

THE RELATIONSHIP OF PARENTAL AND
PEER ATTACHMENTS AND ROMANTIC
CONNECTIONS WITH SELF-INJURIOUS
BEHAVIORS AMONG
COLLEGE STUDENTS

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Introduction

A quick search of “self-injury” on the internet, and one can readily see the significance of the topic. Over a million hits surface discussing issues relating to self-injury such as causes, types, and treatment. It is known by various names such as self-mutilation, self-harm, and self-injurious behavior. Whatever name is used, it is a behavior that is frequently encountered by mental health professionals, parents, educators, and others involved in the care of adolescents. Estimates of the prevalence rate suggest that between 1,400 and 1,800 out of every 100,000 people engage in self-injury, and those numbers appear to be growing (Farber, 2000; Yip, Ngan, & Lam, 2003). Self-injurious behavior often begins in adolescence and can continue for many years (Favazza, 1989). The very fact that the behavior is affecting such a vulnerable population as adolescents suggests that further examination is warranted.

Self-Injury. Self-injury has been defined in many different ways. Some authors have defined it as a deliberate form of self-harm that it not suicidal in nature (Crawford, Geraghty, Street, & Simonoff, 2003; Favazza, 1996; Muehlenkamp & Guitierrez, 2004). Others have added aggression, impulsivity, and tissue damage to this definition (Favazza, 1996; New, Trestman, Mitropoulou, Benishay, Coccaro, Silverman, & Siever, 1997;

Turner, 2002;). The consensus is that it is a deliberate intent to cause harm to the body. Examples of the behavior include cutting, burning, and erasing the skin.

Theorists have identified different types of self-injury, for example, culturally sanctioned and deviant self-injury according to Stone and Sias (2003), and major self-mutilation, stereotypic self-mutilation, and superficial/moderate self-mutilation according to Favazza (1998). Connors (1996) theorized four distinct types of self-injury based on their purpose: body alterations, indirect self-harm, failure to care for self, and overt self-injury. For instance, if one opts to have plastic surgery, this would be categorized as body alterations. Whereas, if one were to deliberately cut his/her body, this would be defined as overt self-injury. Overt self-injury is less culturally acceptable than body alterations.

While it is difficult to imagine why an individual would intentionally harm himself or herself, researchers have attempted to answer this question. Some have suggested that the behavior is functional in that it becomes a coping mechanism to deal with the stresses of life (MacAniff Zila & Kiselica, 2001; Stone & Sias, 2003). Others have suggested that it is an attempt to prevent suicide (Connors, 1996). Still others have suggested that neurobiological, trauma and abuse, and self-objectification/eating disorders are potential causes (Favazza, 1996; MacAniff Zila & Kiselica, 2001; Muehlenkamp, Swanson, & Brausch, 2005; Strong, 1998).

Neurobiological researchers have focused on problems with three neurotransmitters in the brain: serotonin, dopamine, and endogenous opiates. For example, lower levels of serotonin have consistently been associated with increased levels of self-injury (Evan, Reeves, Platt Leibnau, Goldman, Jefferson, & Nutt, 2000; Herpertz, Sass, & Favazza, 1997; Meyer, McMain, Kennedy, Korman, Brown, DaSilva,

et al., 2003; New, Trestman, Mitropoulou, Benschay, Coccaro, Silverman, & Siever, 1997; Pooley, Houston, Hawton, & Harrison, 2003). Other researchers have studied the effects of dopamine on self-injury and have found similar results (Sivam, 1995). Finally, researchers studying endogenous opiates suggest that these operate to decrease the sensation of pain in the body, which allows the self-injurer to harm the body without feeling it (Favazza, 1996). In summary, neurobiological researchers suggest that some individuals are chemically prone to self-injure.

Other researchers have explored intrapersonal factors associated with self-injurious behaviors. Some theorists and researchers suggest that self-injury is the result of abuse and trauma in childhood, especially sexual abuse (MacAniff & Zila, 2001; Strong, 1998). Both abuse and neglect have been significantly related to self-injury (van der Kolk, Perry, & Lewis Herman, 1991). This apparent link between trauma and self-injury may be the result of dissociation in which the individual feels a sense of separation from the body, making it easier to harm the body (Favazza, 1996). Because of the psychological effects created by trauma, it only makes sense that trauma could be a potential link to self-injury.

Researchers in the fields of self-objectification and/or eating disorders suggest that people who self-injure tend to dissociate from their bodies. This dissociation creates a numbing effect, which allows the individual to self-injure without pain. Self-objectification is associated with a negative view of the self (Muehlenkamp, Swanson, & Brausch, 2005). Research indicates that while self-objectification itself does not affect self-injury, through negative body image and depression, it does (Muehlenkamp, Swanson, & Brausch, 2005).

In summary, theorists have speculated about the potential factors associated with self-injury and there is some current evidence that self-injurious behaviors are related to neurobiological factors, abuse and trauma, and self-objectification. To date, theorists and researchers have focused on the impact of intrapersonal factors on self-injury. Little, if any, research has been conducted to explore the interpersonal factors that may be related to self-injurious behaviors, which is the focus of the present study with college students.

Attachments and Connections. Adolescents' attachments and connections to significant people in their lives may serve to buffer them from engaging in self-harming behaviors. Attachment was originally defined as the bonds created between the infant and the caretaker. Early attachment theorists focused on how those early bonds later affected the development of other relationships in people's lives (Bowlby, 1979) as well as the development of the personality and coping mechanisms (Bowlby, 1988; Feeney, 2006). Once an individual has established a pattern of reaction by a caretaker, he/she internalizes that reaction to create an internal working model of the self (Soares, Lemos, & Almeida, 2005). Thus, if positive experiences occurred, the individual feels supported and is willing to enter into new relationships. These individuals are referred to as securely attached individuals (Cooper, Shaver, & Collins, 1998). When negative experiences occur, the opposite reaction is seen, but in two distinct ways. Anxious individuals are preoccupied with rejection, but still enter into new relationships (Cooper, Shaver, & Collins, 1998). Avoidant individuals avoid close relationships with others out of fear of rejection or harm (Cooper, Shaver, & Collins, 1998).

In recent years, attachment researchers have explored bonds beyond the parent-infant relationship, including parent-child and parent-adolescent relationships as well as

peer relationships and romantic partner attachments (Brack, Gay, & Matheny, 1993; Cooper, Shaver, & Collins, 1998; Goldstein, Davis-Kean, & Eccles, 2005; Kenny & Donaldson, 1991; Powell, Denton, & Mattsson, 1995).

Relational-cultural theorists also discuss the importance of connections in people's lives. Relational-cultural theory is based on the premise that problems arise when individuals do not feel a sense of connection to others, and that these disconnections, in turn, create psychological problems (Jordan, 2001; Miller & Stiver, 1997). Like attachment theorists, relational-cultural theorists suggest that individuals create images of themselves based upon their relationships, or what is known as self-in-relation (Surrey, 1991). Relational-cultural theory goes a step farther to suggest that it is not merely being in a relationship that is important, but feeling a sense of mutuality within that relationship. According to relational-cultural theory, mutuality is a sense of feeling understood, and in turn, understanding the other person (Genero, Miller, & Surrey, 1992). If the individual feels as though the other person is not caring or empathic of his/her feelings and thoughts, the individual may internalize this to mean that he/she is unworthy of another person's care and understanding.

Researchers have examined various psychological issues using the tenets of relational-cultural theory. For example, growth-fostering relationships with peers and the community (i.e. relationships where mutual engagement, authenticity, and empowerment are present) have been significantly correlated with positive body image and perceived physical health (Nakash, Williams, & Jordan, 2004). While some researchers have

suggested a link between self-injury and relational-cultural theory (e.g., Kaplan & Klein, 1990), no researchers to date have explored this connection.

Attachment and cultural-relational theorists emphasize the importance of relationships to psychological well-being, but for adolescents, three relationships stand out—parent-adolescent, peer, and dating partners. The parent-adolescent relationship is, most often, the first developed. Research findings indicate that the parent-adolescent relationship has a significant affect on the psychological well-being of adolescents (Brack, Gay, & Matheny, 1993; Goldstein, Davis-Kean, & Eccles, 2005; Kenny & Donaldson, 1991). Brack, Gay, and Matheny (1993) studied the relationship between coping resources and parental and peer attachments in teenagers. Adolescents who had a secure base at home had better resources than those without that base, which influenced their coping resources and relationships with others. Kenny and Donaldson (1991) found a significant and positive relationship between family relationships and psychological well-being. Finally, Goldstein, Davis-Kean, and Eccles (2005) explored both family and peer relationships in relation to risk-taking behavior. Negative relationships with family and peers created the potential for risk-taking behaviors later. These studies suggest that parents in addition to peers play a significant role in the well-being of adolescents.

Peers also play a significant role in the well-being of adolescents. Because adolescents spend a great deal of time with peers during this stage of development, it makes sense that the peer relationship would be important. Like research on the parent-adolescent relationship, researchers have discovered significant positive correlations between peer relations and psychological well-being (Field, Diego, & Sanders, 2002; Hay & Ashman, 2003; Stanton-Salazar & Urso Spina, 2005). Hay and Ashman (2003) found

that emotional stability was significant related to peer and parent relationship. Field, Diego, and Sanders (2002) found that adolescents who reported positive relationships with peers also reported less depression. Finally, Stanton-Salazar and Urso Spina (2005) found that peer relationships provide social support and a coping resource for adolescents. The findings of these studies suggest that the nature of the peer relationship is important with regard to the support the adolescent believes he/she has in difficult situations.

A final relationship of importance during adolescence is the romantic/dating relationship. Developmentally, adolescents are experimenting with the concept of intimacy, making this relationship particularly important (Overbeek, Vollebergh, Engels, & Meeus, 2003). Like parent-adolescent and peer research, researchers examining romantic/dating relationships have also focused on emotional well-being in conjunction with these relationships. Overbeek, Vollebergh, Engels, and Meeus (2003) looked at how the parental relationship affected emotional well-being, but how this in turn affected romantic relationships. They found that the relationship between parental relationship and emotional disturbance was weaker for those in romantic relationships compared to those who were not. Finally, La Greca and Harrison (2005) examined the relationship between anxiety, depression, and peer and romantic relationships. According to their findings, being in a romantic relationship was associated with less depression, but more anxiety for adolescents.

Of interest, attachment styles have been associated with certain risk-taking behaviors in adolescents including educational underachievement, delinquent behaviors, substance use, and sexual behavior (Cooper, Shaver, & Collins, 1998; Goldstein, Davis-

Kean, & Eccles, 2005; Stanton-Salazar & Ursa Spina, 2005). In particular, anxious adolescents were more likely to engage in risk-taking behaviors compared to securely attached and avoidant adolescents. The authors suggest that because avoidant individuals are less likely to be involved in social activities, they are thus less likely to engage in activities that may be risky (Cooper, Shaver, & Collins, 1998). Because self-injury is a risk-taking behavior that could lead to injury, it would make sense that self-injury would also be related to attachment style. However, research on attachment relationships and self-injury is lacking.

In summary, while researchers have found important effects these relationships (i.e., parent-adolescent, peer, and romantic/dating relationships) can have on psychological well-being among adolescents, including their use of certain risk-taking behaviors such as delinquency, substance use, and sexual behavior, researchers have not explored how these attachments/connections might be related to self-injurious behaviors specifically. While there is research evidence for some neurobiological and intrapersonal factors related to self-injury (i.e. anxiety, depression, reaction to trauma), further research is needed to explore how interpersonal relationships might be associated with self-injury in adolescents.

Purpose of Study. The purposes of this study were to 1) explore the relationships of parental-adolescent attachment, peer attachment, and romantic connections with self-injurious behaviors (i.e., frequency with which they are used) in college students (older adolescents) and 2) to explore these attachments and connections as significant predictors of self-injurious behaviors among college students.

The primary research questions for this study were: 1) What are the relationships between and among parent-adolescent attachment (trust, communication, alienation), peer attachment (trust, communication, alienation), mutuality in romantic/dating relationships and the frequency of self-injurious behaviors (overt and indirect) in college students? 2) Do parent-adolescent attachments (trust, communication, alienation) significantly predict the frequency of overt and indirect self-injury among college students? 3) Do peer attachments (trust, communication, and alienation) significantly predict the frequency of overt and indirect self-injury among college students?, and 4) Do parent-adolescent, peer, and romantic/dating relationships significantly predict the frequency of overt and indirect self-injury among college students?

This study was exploratory in nature due to the lack of research on interpersonal relationships and self-injury. Parent-adolescent attachment (i.e., trust, communication), peer attachment (i.e., trust, communication), and mutuality in romantic/dating relationships were expected to be negatively correlated with the frequency of self-injurious behaviors in college students. However, alienation in parent-adolescent and peer relationships were expected to be positively related to self-injurious behaviors in college students. Additionally, parent-adolescent attachment, peer attachment, and mutuality in romantic/dating relationships were expected to predict a higher frequency of self-injury (both overt and indirect self-injury).

METHOD

Participants

Participants for this study consisted of 508 undergraduate college students ages 18-25. Participants for this study were obtained using the Experimetrix program at a large, Midwestern university. Of the 508 participants, 14 were missing significant amounts of data and were omitted from the data analysis. The mean age of the remaining 494 individuals was 19.4 (SD = 1.65) with a range of 18-25. Two students were outside the range of 18-25 and were omitted based upon the initial age restrictions of the study. Approximately 71% of the participants were female (n = 349) and 29% were male (n = 144). The majority of participants identified themselves as White/Caucasian (80.8%, n = 399), 3.8% identified as African American (n = 19), 1.2% as Hispanic (n = 6), 5.3% as Native American (n = 26), 1.2% as Asian/Asian American (n = 6), .8% as Other (n = 4), and 6.3% as Multiracial (n = 31).

With regard to sexual orientation, 96.3% identified themselves as heterosexual (n = 473), 1.8% as homosexual (n = 9), and 1.8% as bisexual (n = 9). Three did not respond to this question. The majority of participants in the study were freshmen (48.4%, n = 237), 19.8% were sophomores (n = 97), 15.5% were juniors (n = 76), and 16.3% were seniors (n = 80).

Yearly family income was also collected via the demographics page. 5.7% of participants reported that their families make less than \$10,000 per year (n = 28), 2.3% reported \$10,001-15,000 (n = 11), 2.7% reported \$15,001-20,000 (n = 13), 6.4% reported

\$20,001-30,000 (n = 31), 3.1% reported \$30,001-40,000 (n = 15), 11.7% reported 40,001-50,000 (n = 57), 8.8% reported \$50,001-60,000 (n = 43), 10.9% reported \$60,000-70,000 (n = 53), 9.9% reported \$70,001-80,000 (n = 48), 6% reported \$80,001-90,000 (n = 29), and 32.4% reported \$90,001 or above (n = 158). Seven participants did not report their family income. See Table 1 for the demographic characteristics of this sample.

Measures

Instruments used in this study will include a demographic sheet, the Self-Injury Questionnaire (Alexander, 1999), the Inventory of Parent and Peer Attachment (Armsden & Greenberg, 1987), and the Mutual Psychological Development Questionnaire (Genero, Miller, & Surrey, 1992).

Demographic Sheet. The demographic sheet will be used for descriptive purposes only. Participants are asked to provide their age, race, gender, sexual orientation, family income, and academic year (i.e., freshman, sophomore, junior, or senior).

Self-Injury Questionnaire (SIQ) (Alexander, 1999). The SIQ is self-report measure consisting of 32 items that address the type of self-injury used, the frequency with which participants engage in that type of self-injurious behavior, and the reasons for engaging in the behavior (e.g., “For fun”, “To feel real or alive”, ”To reduce tension or anxiety”).

The SIQ initially included four subscales based on Connors’ (1996) classification of four types of self-injury: body alterations (e.g., tattoos), indirect self-harm (e.g., binge drinking), failure to care for self (e.g., not seeking medical attention when ill), and overt

self-injury (e.g., cutting). The SIQ was later changed to measure indirect self-injury and overt self-injury.

The overt self-injury scale includes items that address different types of obvious self-injury behaviors including gouging, cutting, and burning. The overt self-injury frequency subscale is a 13-item subscale (items 20-32) that measures the frequency and motivation for engaging in each behavior. Each item is assessed for frequency and reasons for engaging in the behavior. For each item, participants rate the frequency with which they engage in that particular self-injurious behavior, using a 7-point, Likert-type scale (1 =“Never” engaged in the behavior, 7 = engaged in the behavior “Daily”).

Participants are asked to record the number that describes the most they have engaged in the behavior even if this is not their current experience. Participants are additionally asked to mark all the reasons (30 possible) that apply to their engaging in the behavior.

An example of a question concerning overt self-injury is item 21, which reads “Cut or gouged your body with a razor, broken glass, etc. on purpose.” Examples of reasons provided for engaging in this behavior are “For fun,” “My friends or family did it or taught me to do it,” and “To get help or care from someone.” Each of the items involving overt self-injury provide 30 possible reasons for the behavior with an additional blank space for reasons not listed. Item 32 will also be used though it does not provide an example of a specific behavior, but instead reads “Other behavior(s) not listed” allowing space for an additional response, but still providing the 7-point scale and 30 potential causes. Scores will be based upon the frequency of engaging in each behavior. High scores on each item (4 or over) suggest that the individual frequently engages in the

behavior. Low scores on each item (3 or below) indicate the individual rarely or never engages in the behavior.

The indirect self-harm subscale is a 19-item scale (items 1-19) that measures the frequency with which participants engage in indirect forms of self-harm. The indirect self-injury subscale includes items that address body alterations, failure to care for self, and indirect self-injury (e.g., driving recklessly, binge eating, tattooing, and not seeking medical attention when ill). Questions 1-3 ask the participant to note surgeries, tattoos, and body piercings they have. If the question does not apply to the participant, he/she is asked to skip to the next question. Questions 4-19 are in the same format as the overt self-injury subscale. An example of an indirect self-harm item is “Drank alcohol until you vomited or passed out.” Like the overt self-injury subscale, high scores (4 or over) suggest the individual frequently engages in the behavior, while low scores (3 or below) suggest the individual does not frequently engage in the behavior. Participants also rate their reasons for engaging in each self-injurious behavior by reviewing a list of 30 possible reasons and selecting the ones that apply. If a reason is not listed, participants may write it in beside “Other reason not indicated on list.” For the purposes of this study, only the total scores of the overt self-injury frequency scale and indirect self-injury frequency scale will be used. The reason section for each question will be omitted as it is not relevant to the current study.

The original version of the questionnaire contained 46 items, but was trimmed to 32 to eliminate items that were unclear and to decrease measurement error (Alexander, 1999). Alexander (1999) used a college population to test her questionnaire, which were

predominantly white females. In both Study 1 and 2, nearly half of the participants reported they had seen a mental health professional at some point.

Additionally, Alexander's (1999) findings suggest good test-retest reliability. Test-retest reliability for Study 2 was strong for SIQ total ($r=.91$), SIQ frequency total ($r=.90$), Indirect total ($r=.87$), Indirect frequency total ($r=.92$), Overt total ($r=.90$), and Overt frequency total ($r=.77$) (Alexander, 1999). There is evidence of strong internal consistency reliability for the total SIQ scale ($\alpha=.83$). However, Cronbach alphas were not calculated for the overt self-injury and indirect self-injury scales separately (Santa Mina, Gallop, Links, Heslegrave, Pringle, Wekerle, and Grewal, 2006). Please note that some researchers have only used the overt self-injury subscale of the SIQ (e.g., Santa Mina, Gallop, Links, Heslegrave, et al., 2006).

The internal consistency reliability estimates for the SIQ scales for this sample were as follows: Indirect frequency total ($\alpha=.83$), Overt frequency total ($\alpha=.81$), and SIQ total ($\alpha=.86$). For the purposes of this study, the Indirect and Overt Self-Injury scales were used in the analyses of this study.

The SIQ has good face validity, convergent validity, and discriminant validity; however, little is known about the construct validity of the SIQ (Alexander, 1999). A principle component analysis of the reasons for overt self-injury was conducted by one research group to explore the construct validity of this subscale of the SIQ (Santa Mina et al., 2006). They discovered a five-factor solution based on theory that consisted of Affect Regulation, Coping, Protection, Stimulation, and Dissociation. However, this was only conducted for the overt self-injury reasons subscale.

Santa Mina, Gallop, Links, Heslegrave, Pringle, Wekerle, and Grewal (2006) used only the overt self-injury subscale of the SIQ and correlated it with other measures in their study including the Suicide Intent Scale, Self-Inflicted Severity Form, Dissociative Experiences Scale, Structured Interview for Disorders of Extreme Stress, Trauma Symptoms Checklist-40, Beck Hopelessness Scale, and Beck Depression Inventory II) to determine the convergent validity of the SIQ with other measures of distress. The five factors of overt self-injury were used in the analyses. According to Santa Mina et al. (2006), “The correlations between the SIQ subscales and its individual items with seven preexisting measures for the key constructs in self-harm intentions demonstrated significance” (p. 226). Again, it is important to note that only the overt self-injury subscale’s reasons list was used. Little is known about the validity of the frequency of overt and indirect self-injury subscales, which will be used in this study.

Inventory of Parent and Peer Attachment (IPPA) (Armsden & Greenberg, 1987). The IPPA is a 75-item questionnaire intended to measure attachment bonds with parents and peers (Armsden & Greenberg, 1987). The questionnaire also assesses “...the role of security of attachment in late adolescence” (Armsden & Greenberg, 1987, p. 433). The IPPA contains three subscale scores for Trust, Communication, and Alienation. Trust indicates that the parent or peer is accessible, and that the individual feels secure. Communication refers to the responsiveness and helpfulness of parents and peers. Alienation refers to feelings of insecurity or detachment from the parent or peer.

The IPPA is divided into three sections. The first 25 items contain statements examining the adolescent’s feelings towards the mother rating the response on a 5-point Likert-type scale. A response of “1” indicates that the item is “Almost Never or Never

True.” A response of “5” indicates that the item is “Almost Always or Always True” for the individual. An example of an item for the mother section is “I like to get my mother’s point of view on things I’m concerned about.”

The second set of 25 items contains statements examining the adolescent’s feelings about the father. Each response is rated using the same 5-point Likert-type scale. An example response designed to examine a problem in the attachment bond with the father is “My father has his own problems, so I don’t bother him with mine.”

The third set of 25 items contains statements intended to examine the attachment bond between the adolescent and peers. Again, the same 5-point Likert-type scale is used to rate the response. An example of a question intended to get at problems in the peer relationship is “My friends don’t understand what I’m going through these days.” For all three sections, the items are intended to measure trust, communication, and alienation. High or low scores are relative to the statement being assessed. For example, item 22 states, “I trust my mother.” A “5” response of this item would suggest strong feelings of trust. However, a “5” response on item 18, which states, “I don’t get much attention from my mother” would suggest alienation. This indicates some reverse scoring.

For each section of this questionnaire, subscale scores of Trust, Communication, and Alienation can be calculated. High scores on the Trust and Communication subscales mean that the parent or peer is accessible and responsive. High scores on the Alienation subscale suggest the opposite, or that the individual does not feel secure or understood.

Reliability and validity for the questionnaire were determined in two separate studies. In Study I (Armsden & Greenberg, 1987), two samples consisting of a combined 179 participants were used. Participants had a mean age of 18.9 years and were

predominantly white, middle class. Sixty-three percent of the participants were women. Test-retest reliability was not calculated for the scale. Internal consistency for the three subscales was calculated. Cronbach's alphas for the three parent scales were .91 for Trust, .91 for Communication, and .86 for Alienation. For the peer scales, .91 for Trust, .87 for Communication, and .72 for Alienation (Armsden & Greenberg, 1987).

The internal consistency reliability estimates for the IPPA scales for this sample were as follows: Mother Trust ($\alpha=.93$), Mother Communication ($\alpha=.92$), Mother Alienation ($\alpha=.83$), Father Trust ($\alpha=.95$), Father Communication ($\alpha=.94$), and Father Alienation ($\alpha=.85$). For the peer scales, Peer Trust ($\alpha=.93$), Peer Communication ($\alpha=.92$), and Peer Alienation ($\alpha=.70$). For the purposes of this study, the subscales of the mother, father, and peer attachment scales (i.e., trust, communication, and alienation for each scale) were used in the analyses of this study.

Study II was used to determine the validity of the scale. Participants consisted of 86 males and females from the first study. Participants were 17-20 years of age, and the majority of them (80%) were Caucasian (Armsden & Greenberg, 1987). Convergent validity was determined using three other scales that measured well-being, family characteristics, and proximity seeking. Results were favorable suggesting a strong association ($r=.78$) between the parent attachment section and family self-concept on a separate scale. Peer attachment was significantly related to social self-concept ($r=.57$), but was not related to subscales of the Family Environment Scale (cohesion, expressiveness, conflict, organization, control, and independence) (Armsden & Greenberg, 1987). While construct validity could not be determined in this study, Armsden & Greenberg (1987) conclude that "The IPPA has shown substantial reliability

and good potential validity as a measure of perceived quality of close relationships in late adolescence” (p. 447).

Mutual Psychological Development Questionnaire (MPDQ) (Genero, Miller, & Surrey, 1992). The Mutual Psychological Development Questionnaire is a 22 item questionnaire used to assess “...perceived mutuality in close adult relationship” and is based on the relational-cultural theory (Genero, Miller, Surrey, & Baldwin, 1992, p. 37). The items in the questionnaire are intended to measure six characteristics of mutuality: empathy, engagement, authenticity, empowerment, zest, and diversity (Genero, Miller, & Surrey, 1992).

The Mutual Psychological Development Questionnaire is divided into two sections. In one section, the participant answers according to how she is likely to respond using a 6-point Likert-type scale. A response of “1” indicates the individual “never” responds in this manner. A response of “6” indicates the individual responds in this manner “all the time.” In the other section, the participant is asked to rate how her spouse/partner would respond to the statements using the same 6-point Likert-type scale. There are two forms of the MPDQ. The difference is in the set of items the individual answers for herself and for her spouse/partner. Either form can be used. For Form A, participants are asked to rate 11 responses based on the statement “When we talk about things that matter to my spouse/partner, I am likely to...” Examples of responses are “be receptive,” “get impatient,” and “get bored.” Form B asked this question with regard to how the partner/spouse would respond. For Form A, the statement provided is “When we talk about things that matter to me, my spouse/partner is likely to...” with example responses of “pick up on my feelings,” “keep feelings inside,” and “feel down.” Form B

asked this same question with regard to how the participant would respond. Scoring requires a reversal of negative items first. An example would be “get frustrated.” If the response to this were “1” or “Never,” then the score would be changed to “6” to indicate high mutuality in relation to the positive items. The scores are then added and divided by 22. High scores indicate high levels of mutuality in the relationship. Low scores indicate low mutuality and may correlate with high depression scores (Genero, Miller, & Surrey, 1992, p.2). Form A was used for this study.

Genero, Miller, Surrey, and Baldwin (1992) assessed the validity and reliability of the instrument in two separate studies. Study 1 examined the interitem reliability of the instrument using 345 women and men. Seventy-seven percent of the participants were women ages 18-58. Eighty percent of the participants were white, and 99% of the women were married or in a significant relationship. Two forms of the instrument were created to assess for interitem reliability. Results indicated an alpha coefficient of .92 for romantic relationships indicating strong internal consistency (Genero, Miller, Surrey, & Baldwin, 1992).

Study 2 examined test-retest reliability and consisted of 81 individuals. Of those who participated, 40 were women ages 20-68 with 94% being white. Results indicated strong test-retest reliability with an $r=.74$ for Form A and $r=.83$ for Form B (Genero, Miller, Surrey, & Baldwin, 1992).

The internal consistency reliability estimate for the overall score of mutuality in romantic relationships for the sample in this current study was .90. The overall mutuality score will be used in the analyses of this study.

Construct validity was also measured in Study 1 using instruments that measured depression, social support, and relationship satisfaction as these were determined to relate to perceived mutuality. Results indicated that mutuality significantly correlated with social support ($r=.43$) and relationship satisfaction ($r=.70$) for Form A. Similar findings were reported for Form B. Depression was negatively correlated with mutuality as expected (Genero, Miller, Surrey, & Baldwin, 1992, p. 41). Genero, Miller, Surrey, and Baldwin (1992) concluded that “Validity data suggest that, for women and men, perceived mutuality is significantly correlated to relationship satisfaction and cohesion and that changes in these variables are significantly predictive of changes in mutuality” (p. 43).

Procedure

Participants were recruited from the Experimentrix system available online through the psychology department at Oklahoma State University. Participants were asked to participate in an on-line study exploring their relationships with their parents, peers, and romantic/dating partners and their involvement in behaviors which may or may not affect their bodies. Students who chose to participate, clicked on a URL that took them to a secure website. Only the researcher had access to the userid and password needed to obtain the data. Once the participant clicked the URL and was taken to the website, he/she was met with the informed consent form. Participants either clicked “Accept” or “Decline” after reading the informed consent form. If they clicked the “Accept to Participate” button, they were taken to a second page that contained the four questionnaires to complete. Participants did not write their names anywhere on the on-line survey pages; however, they were redirected to a separate signature page for the

purposes of assigning credit, which was not in any way connected to their data. At the end of the surveys, participants clicked the “Submit” button and were directed to a page thanking them for participating in the study along with a list of counseling referral sources. At the bottom of the page, participants were given the option to return to the Experimetrix website via the URL for this site. The name list was collected separately from the datafile, so there was no way to connect students’ participation in this study with their name. The list of names was sent to a separate Microsoft Excel file from which the researcher could assign credit. Students were assigned credit for their participation, but were not penalized for not participating in the study or completing the materials. Additionally, instructors were given access to individual responses to items. No one was given access to the datafile except the primary researchers of this study.

Results

Several series of multiple regressions were conducted to explore parent-adolescent attachment, peer attachment, and romantic mutuality as predictors of indirect and overt self-injurious behaviors among college students. See Tables 2-5 for results of these analyses.

Do parent-adolescent attachments (trust, communication, alienation) significantly predict the frequency of overt self-injury among college students?

A series of multiple regression analyses were conducted to evaluate how well parent-adolescent attachments predicted overt self-injury among college students. In the first regression, trust, communication, and alienation with mothers was explored in relation to overt self-injury. There was a significant linear relationship between the subscales measuring attachment to mothers and overt self-injury in college students, $F(3, 490) = 9.70, p < .01$. Trust, communication, and alienation in relation to mothers accounted for a total of 5.6% of the variance in overt self-injury scores. See Table 2.

A second regression was performed to examine the linear relationship of attachment to the father and overt self-injury using three predictor variables: trust, communication, and alienation. There was a significant linear relationship between the father attachment subscales and overt self-injury in college students, $F(3, 485) = 8.85, p < .01$. Trust, communication, and alienation with fathers explained 5.2% of the total variance in overt self-injury scores. See Table 2

A third regression was conducted to explore the linear relationship of attachment to both mother and father and overt self-injury using six predictor variables: mother (trust, communication, alienation) and father (trust, communication, alienation). A significant linear relationship was found between the mother attachment and father attachment subscales with overt self-injury, $F(6, 482) = 6.87, p < .01$. The variables together accounted for 7.9% of the total variance in overt self-injury scores. See Table 2.

Do parent-adolescent attachments (trust, communication, alienation) significantly predict the frequency of indirect self-injury among college students?

To determine whether or not parent-adolescent attachments significantly predicted the frequency of indirect self-injury, three multiple regressions were conducted. The first regression, mother attachment subscales (trust, communication, and alienation) were the predictor variables. Trust, communication, and alienation together did significantly predict the frequency of indirect self-injury, $F(3, 489) = 4.62, p < .01$, and accounted for 2.8% of the variance. See Table 3.

A second regression was performed to determine if father attachment subscales (trust, communication, and alienation) significantly predicted the frequency of indirect self-injury. The father attachment subscales did have a significant linear relationship to indirect self-injury; however, not as significant a relationship as the mother attachment, $F(3, 484) = 3.7, p < .05$. Father attachment subscales accounted for 2.2% of the variance in indirect self-injury. See Table 3.

A third regression analysis was conducted to determine if mother attachment and father attachment together predicted the frequency of indirect self-injury in college

students. Results indicated that mother attachment (trust, communication, alienation) and father attachment (trust, communication, alienation) did have a significant linear relationship with indirect self-injury, $F(6, 481) = 3.25, p < .01$. Together, mother and father attachments accounted for 3.9% of the variance in indirect self-injury. See Table 3.

Do peer attachments (trust, communication, and alienation) significantly predict the frequency of overt self-injury among college students?

A multiple regression analysis was conducted to determine if peer attachments significantly predicted the frequency of overt self-injury in college students. Peer trust, communication, and alienation did exhibit a significant linear relationship to the overt self-injury, $F(3, 488) = 9.18, p < .01$. See Table 2. Peer attachment subscales accounted for 5.3% of the variance in overt self-injury.

Do peer attachments (trust, communication, and alienation) significantly predict the frequency of indirect self-injury among college students?

A multiple regression analysis was conducted to determine if peer attachments significantly predicted indirect self-injury. Peer trust, communication, and alienation did appear to have a significant linear relationship to indirect self-injury, $F(3, 487) = 6.92, p < .01$. Peer attachment accounted for 4.1% of the variation in indirect self-injury. See Table 3.

Is there a significant relationship between mutuality in romantic/dating relationships and indirect self-injury in college students and between mutuality in romantic/dating relationships and overt self-injury in college students?

Pearson correlational analyses were conducted to explore the relationship between mutuality and both types of self-injury. Mutuality was significantly and negatively

correlated with indirect self-injury ($r = -.23, p < .01$) and overt self-injury ($r = -.16, p < .01$). The shared variance between mutuality shared with indirect and overt self-injury was 5.29% and 2.56% respectively.

Do parent-adolescent attachments, peer attachments, and mutuality in romantic/dating relationships significantly predict the frequency of overt self-injury among college students?

To answer this question, a hierarchical regression analysis was performed. The order of blocks was determined based upon support from the theoretical evidence in the literature review. The first predictor variable entered into the hierarchical design was mother attachment. This variable was chosen based on attachment theory that suggests the importance of the primary caretaker, often the mother, in the well-being of the child. Mother attachment was represented by the variables trust, communication, and alienation. After entering these three variables into the first block, with overt self-injury as the criterion variable, mother attachment accounted for 2.8% of the variance, but was not significant in predicting overt self-injury, $F(3, 274) = 2.61, p > .05$.

The second block entered into the equation included the father attachment subscales. This set of variables was entered into the second block given the support in the literature regarding parents as the most influential figures in relation to child and adolescent well-being. Father attachment was represented by three predictor variables: trust, communication, and alienation. Father attachment accounted for 4.9% of the variance in overt self-injury, $F \text{ Change}(3, 271) = 4.77; p < .01$, after controlling for the relationship between mother attachment and overt self-injury. This variable was

significant in predicting overt self-injury in this model based upon the incremental F value.

The third block entered into the equation was attachment to peers. This variable was chosen third as theoretical evidence supports the effects of peer relationships on adolescent well-being though not as strongly as research with parents. Peer attachment was represented by three predictor variables: trust, communication, and alienation. Peer attachment subscales explained 4.3% of the variance after controlling for the relationship of overt self-injury with mother and father attachment. Peer attachment was also a significant predictor of overt self-injury, $F \text{ Change } (3, 268) = 4.37, p < .01$.

The fourth block entered into the equation was mutuality in romantic/partner relationships. This variable was entered last because it is an exploratory variable with little research base to suggest its importance in relation to self-injury. Mutuality added less than 1% to the variance ($R^2 \text{ Change} = .003$) after controlling the other three variables and was not a significant predictor of overt self-injury, $F \text{ Change } (1, 267) = .99, p > .05$.

While father and peer attachment were the significant predictors of overt self-injury based upon the incremental F values, the model overall model (i.e., mother attachment, father attachment, peer attachment, and mutuality in the romantic/dating relationship) explained 12% of the variation in overt self-injury scores. This suggests that there were other significant predictors of overt self-injury that were not explored in this study (88% of the variance in overt self-injury still not accounted for). However, given this large sample size, this amount of variation is important.

In summary, both father and peer attachments predicted the frequency of overt self-injury in college students. See Table 4.

A separate multiple regression was conducted using simultaneous entry (i.e., entering all of the variables at once) to determine if the predictor set as a whole was significant in predicting overt self-injury. Results indicated that the predictor set did have a significant linear relationship with overt self-injury, $F(10, 267) = 3.74$; $p < .01$, accounting for 12.3% of the variance in overt self-injury. See Table 2.

Do parent-adolescent attachments, peer attachments, and mutuality in romantic/dating relationships significantly predict the frequency of indirect self-injury among college students?

A hierarchical regression was conducted. Predictor variables were entered into the same blocks as mentioned in the previous analysis. The criterion variable was indirect self-injury. The first block entered included the mother attachment subscales of trust, communication, and alienation. Mother attachment did not significantly enter the equation, and accounted for 1.6% of the variation in indirect self-injury, $F(3, 273) = 1.48$, $p > .05$.

The second block again consisted of father attachment variables (trust, communication, alienation). Father attachment did not significantly enter the equation and accounted for only 1.1% of the variation in indirect self-injury ($R^2 = .011$), $F \text{ Change}(3, 270) = .98$, $p > .05$.

The third block entered into the regression equation was peer attachment. Peer attachment was measured using three subscales: trust, communication, and alienation. Peer attachment accounted for 3.9% of the variance in indirect self-injury after controlling for mother attachment and father attachment. Peer attachment was a

significant predictor of indirect self-injury in college students, F Change (3, 267) = 3.69, $p < .05$.

The fourth block entered was mutuality in the romantic/dating relationship. This variable accounted for 2.7% of the variation in indirect self-injury after controlling for mother, father, and peer attachment. It also significantly contributed to the equation, F Change (1, 266) = 8.06, $p < .01$. Peer attachment and mutuality in dating/romantic relationships significantly predicted indirect self-injury in college students. See Table 5.

A final regression was conducted with all variables entered simultaneously to determine the linear relationship with indirect self-injury. Results indicated that the predictor set as a whole did have a significant linear relationship with indirect self-injury, F (10, 266) = 2.72; $p < .01$. The variables together accounted for 9.3% of the variance in indirect self-injury. See Table 3.

Pearson moment correlational analyses were conducted to explore the bivariate relationships between and among parent-adolescent attachment (trust, communication, alienation), peer attachment (trust, communication, alienation), mutuality in romantic/dating relationships and the frequency of self-injurious behaviors (overt and indirect) in college students. See Table 6 for the correlation matrix.

What is the relationship between parent-adolescent relationships and self-injury (indirect and overt)?

Indirect Self-Injury. For mother attachment, two subscales were negatively correlated with indirect self-injury: trust ($r = -.15$, $p < .01$) and communication ($r = -.14$, $p < .01$). Alienation in the attachment to mother was positively correlated with indirect self-injury ($r = .16$, $p < .01$). While these correlations were statistically significant, there was

little shared variance between indirect self-injury and trust with mothers (2.26%) and between indirect self-injury and communication with mothers (1.96%).

For father attachment, trust ($r = -.11$, $p < .05$) had a statistically significant and negative correlation with indirect self-injury. Alienation in the father relationship showed a significant, positive correlation to indirect self-injury ($r = .14$, $p < .01$). Communication in the father relationship was not significantly correlated with indirect self-injury in college students. While these correlations were statistically significant, there was little shared variance between indirect self-injury and trust with fathers (1.21%) and between indirect self-injury and alienation with fathers (1.96%).

Overt self-injury. For mother attachment, two subscales were negatively correlated with overt self-injury: trust ($r = -.21$, $p < .01$) and communication ($r = -.22$, $p < .01$). The shared variance between overt self-injury and each of these scales were as follows: trust with mothers (4.41%) and communication with mothers (4.84%). Alienation in the attachment to mother was positively correlated with overt self-injury ($r = .22$, $p < .01$). The shared variance between alienation from mother and overt self-injury was 4.84%.

For father attachment, both trust ($r = -.17$, $p < .01$) and communication ($r = -.15$, $p < .01$) were negatively correlated with overt self-injury. The shared variance between overt self-injury and trust with fathers and communication with fathers was 2.89% and 2.25% respectively. Alienation in the father relationship was positively correlated with overt self-injury ($r = .22$, $p < .01$), explaining 4.84% of the variance in overt self-injury scores. It should be noted that the mother and father scales were highly correlated with each other, which could affect results. See Table 6 for these correlations.

What is the relationship between peer relationships and self-injury?

Peer attachment subscales were significantly and negatively correlated with indirect self-injury on two subscales: trust ($r = -.17$, $p < .01$) and communication ($r = -.11$, $p < .05$). The shared variance between indirect self-injury and trust with peers and communication with peers was 2.89% and 1.21% respectively. Alienation from peers was significantly and positively correlated with indirect self-injury ($r = .18$, $p < .01$); these two variables shared 3.24% of the variance.

For overt self-injury, similar results were found. Both trust with peers ($r = -.17$, $p < .01$) and communication with peers ($r = -.13$, $p < .01$) were significantly correlated with overt self-injury in college students. The shared variance between overt self-injury and trust with peers and communication with peers was 2.89% and 1.69% respectively. Alienation from peers was positively correlated with overt self-injury in college students ($r = .23$, $p < .01$); these two variables shared 5.29% of the variance.

In summary, attachment to parents and peers (i.e., trust and communication), and mutuality in romantic/dating relationships were significantly and negatively correlated with the frequency of self-injurious behaviors in college students. In addition, alienation from parents and peers was significantly and positively correlated with the frequency of self-injurious behaviors in college students.

Discussion

This study was conducted to explore the relationships of parental attachment, peer attachment, and romantic/dating connections with the frequency of overt and indirect self-injury behaviors in college students. This study was exploratory in nature given the lack of research examining the links between attachments/connections and self-injury. Several theorists have argued that attachments and connections with others may indeed be related to self-injury behaviors in adolescents, including college students (Kaplan & Klein, 1990; MacAniff Zila & Kiselica, 2001). Because of the prevalence of self-injurious behaviors among children, adolescents, and older adolescents, including college students, and adults, it is important to understand the significant factors that are related to and may influence self-injurious behaviors in college students so that effective preventive, educational and remedial counseling/therapy services can be developed to address these factors and not just the self-injurious behavior itself.

Overall, results indicated that the attachment to parents and peers (i.e., trust and communication), and mutuality in romantic/dating relationships were significantly and negatively correlated with the frequency of self-injurious behaviors in college students. In addition, alienation from parents and peers was significantly and positively correlated with the frequency of self-injurious behaviors in college students.

Attachments to parents and peers as well as mutuality in romantic/dating relationships were also significant predictors of indirect and overt self-injury behaviors in college students in a series of separate multiple regressions. When mother and father

attachments were considered together, they were found to be significant predictors of both overt and indirect self-injury. When mother, father, and peer attachments, as well as romantic mutuality were considered together, father and peer attachments significantly predicted overt self-injury behaviors in college students (accounting for 12.3% of the variance) whereas peer attachments and mutuality in romantic/dating relationships significantly predicted indirect self-injury behaviors in college students (accounting for 9.3% of the variance). While there is still a lot of the variance in self-injury scores that was not accounted for by attachments and/or connections with parents, peers, and romantic partners, these findings still have some statistical and practical significance for a non-clinical sample of students with a range of self-harm behaviors.

The results of this study imply that if college students feel a sense of trust and have good communications with their parents and peers, they engage in self-injury with less frequency. Goldstein, Davis-Kean, and Eccles (2005) suggested this in their study by stating that relationships with family and friends that are positive support healthy psychological developmental, but unhealthy relationships may lead to risk-taking behaviors. The findings in this study appear to support this statement in that good communication relates to lower frequencies of self-injury while alienation in these relationships relates to higher frequencies of self-injury.

While both mother and father attachments are important in understanding self-injury among college students, the results of the hierarchical regressions indicate that father and peer attachments were related to overt self-injury among college students. The importance of father attachment, and not mother attachment, in predicting overt self-

injury, is somewhat inconsistent with the literature on attachment theory that suggests that the primary caretaker, often the mother, has more impact on the psychological well-being of the individual than the father (Bowlby, 1973). One possible explanation not examined in the literature might be the change in the father-adolescent attachment during puberty, particularly, with girls. In my clinical experience with adolescent girls, I often find that the father relationships girls have with their fathers becomes more distant in puberty as girls are changing physically and emotionally, which the father may have difficulty coping with. This distance could impact the resulting self-image that is so fragile during puberty for girls. Additionally, this disconnection may continue into later adolescent develop as a sort of internalized sense of self. This may be particularly important as adolescents leave the home for college, which could cause a further disconnection.

The parent-adolescent relationship has also been found be associated with coping resources and problem solving skills in adolescents (Brack, Gay, & Matheny, 1993). The results of the present study support the findings of Brack et al. (1993) in that the nature and quality of college students' relationships with their fathers was associated with the use of overt self-injury which may be viewed as an ineffective coping strategy for college students. Poor attachments to fathers tend to be associated with a higher frequency of overt self-harm behavior which implies that college students may have fewer coping resources in place to handle the stress that is associated, not just with adolescence, but also the transition to college if the trust and communication with their fathers is not strong.

Other research has suggested that a perceived, higher quality relationship with parents can help with such areas as higher academic expectations, engaging in extracurricular activities, and less substance use (Field, Diego, & Sanders, 2002). Goldstein, Davis-Kean, and Eccles (2005) also found that family relationships impacted risk-taking behavior. While more traditional risk-taking behaviors like alcohol or drug use were not aspects of overt self-injury, but rather indirect self-injury, where as activities such as engaging in sexual behaviors that cause pain, eating toxic substances, and cutting behaviors were overt self-injury, and it could be argued that all of these behaviors are risk-taking behaviors. Therefore, the results of this study also add to the literature on the relationship between parent attachment and risk-taking behaviors in general with adolescents, including college students.

Finally, while no links have been found in the literature or previous studies that might specifically implicate the father's role in overt self-injury, divorce has been suggested as a possible catalyst for self-injury ("Self-Injury: Is This Troubling Behavior a Growing Problem in Adolescents?", 2004). Although this is pure speculation, fathers are often the parent who leaves the home when a divorce occurs. While fathers may maintain contact with the adolescent following divorce, the adolescent may experience a further disconnection and seek out an unhealthy method of coping such as engaging in self-injury when such disconnections occur.

There were relatively strong correlations between the mother and father attachment subscales. This suggests that there could be some significant interactions between mother and father that then affect the adolescent and in turn influence self-injury.

Peers are often the individuals adolescents go to for support especially if the parent is absent (Stanton-Salazar & Urso Spina, 2005). This is consistent with the finding that alienation from that peer support means the adolescent has no one to go to and relieve stress or seek support from, which then in turn leads to unhealthy coping mechanisms such as overt and indirect self-injury.

Since peer attachments were found to be important both for overt and indirect forms of self-injury (as noted in the hierarchical regression findings), both will be discussed in a bit more depth. Overt behaviors such as slapping self, biting self, or pulling out ones hair appear to be events that the individual would do in private though still are risky behaviors as they do cause harm to the individual. This would make sense if a college student felt isolated from peers because the college student would have to rely on himself/herself to cope with stress. It could also be speculated that these kinds of behaviors could lead to further alienation from peer groups because they are more abnormal behaviors, which peers may be afraid to deal with or repelled by. Indirect forms of self-injury as used in this study are much different in that they tend to have a more social nature about them and are more like traditional risk-taking behaviors in the literature. Examples of the behaviors studied here include drinking alcohol until passing out, using marijuana, using other illegal drugs, and spending time with people who are dangerous. These activities are similar to other risk-taking type behaviors studied by others who also looked at problems in peer relationships (Goldstein, Davis-Kean, & Eccles, 2005). This supports that indirect forms of self-injury are similar to risk-taking behaviors previously considered in the literature, suggesting that these results could further add to the literature not just on self-injury, but also on risk-taking behaviors. It

also suggests that negative, peer relationships may have an impact on what an adolescent is willing to do to himself/herself to gain acceptance and avoid alienation. It may also mean that more positive, peer relationships could help to curb these behaviors. The findings of the current study are similar the findings in other studies in which peer relationships were explored in relation to emotional stability, well-being, and coping resources, which are similar to problems found in self-injurers (Field, Diego, & Sanders, 2002; Hay & Ashman, 2003; Stanton-Salazar & Urso Spina, 2005). If positive, peer relationships are formed with other college students who do not engage in indirect self-injury, the college student may feel he/she has a stronger support system in times of stress that will enable him/her to deal with problems in a healthy manner.

Mutuality in the romantic/dating relationship, which is characterized by such elements as empowerment, zest, empathy, etc. (Genero, Miller, & Surrey, 1992), was related to both overt and indirect self-injury. In other words, if there was perceived mutuality in the romantic relationship, the college student also engaged in self-injury with less frequency. However, a stronger relationship was found between mutuality and indirect self-injury. One possible explanation may be that because indirect self-injury is more social in nature, problems within the context of a dating relationship may relate more directly to these behaviors than to overt behaviors, which are more internal and private in nature. Previous researchers have found that adolescents who were not in a romantic/relationship were more anxious, and those in a negative one were more depressed (La Greca & Harrison, 2005). This is similar to the above findings in that the quality of the relationship affects the adolescent's psychological well-being or how resilient they are in stressful times. If a negative relationship is perceived or mutuality

does not exist, the adolescent may turn to other methods to cope with depression such as binge drinking. Another possible explanation is similar to that with peer groups in that a relationship with someone who has a negative influence may in turn influence the romantic partner to also engage in these behaviors. While little research has been done to link romantic relationships during late adolescence to indirect self-injury, authors have suggested how important these relationships are in adolescents especially with regard to sexual issues, intimacy issues, and identity development (Overbeek, Vollebergh, Engels, & Meeus, 2003). A good example of this would be the indirect self-injury question that asks the individual about the frequency with which he/she engages in unprotected sex. It could be speculated that being in a relationship in which the adolescent did not feel heard or cared for could result in he/she engaging in risky sexual behaviors since these issues cannot be resolved in the boundaries of a healthy relationship. This would also address the intimacy aspect of adolescent development mentioned by the authors above.

Important to note, however, is the resiliency of mutuality in romantic/dating relationships with regard to the frequency of overt self-injury. It would appear that based upon the results, mutuality in the romantic relationship is not a significant predictor of overt forms of self-injury. While authors such as Kaplan and Klein (1990) suggest that the individual's attempt to make sense of disconnections in relationships could lead to self-injury, the results of this study suggest that the romantic/dating relationship may be more resilient in guarding against overt self-injury. Although it is purely speculation, this may go back to the less social nature of overt self-injury as opposed to the social quality of indirect self-injury.

Overall, peer and romantic relationships appear to be very important in adolescent development. This could be, based solely on opinion, particularly true for college students who are often not near parents and who seek out the support of peers and others to assist in coping with the stress of life changes. When these relationships are unhealthy, the adolescent may turn to other methods of coping such as drinking or alcohol use. The reverse may also be true in that these negative relationships may lead these late adolescents who feel isolated to engage in risky behaviors that could potentially cause harm to their bodies.

Limitations of the Study

The purpose of this study was to examine mutuality in relation to the frequency of overt and indirect self-injury behaviors among college students. One limitation of the study is the population sampled. Since only college students were used, it is not representative of the adolescent population as a whole. Additionally, students who participated in the study were given extra credit for their courses and may have had this as motivation rather than interest in or experience with the topic. Given that this sample of college students were not recruited from a clinical setting, it is likely that they may not exhibit clinically significant self-injurious behaviors. Therefore, it is possible that the relationships of attachment, mutuality, and self-injurious behavior may be stronger than what was found in this non-clinical sample. Finally, the instruments used were self-report and based upon the participant's perception of relationships rather than observation of these relationships. Participants may or may not have reported with complete honesty, which could affect the results. Another set of limitations related to the study involves the variables studied and analysis conducted. This study was limited to three independent

variables: parent-adolescent attachment, peer attachment, and mutuality in romantic/dating relationships. These variables accounted for approximately 12% of the variance in overt self-injury scores and 9% of the variance in indirect self-injury scores, which means that there are other correlates and/or contributors to self-injury that were not explored in this study. Also, correlational and multiple regression analyses were conducted, and these analyses are not able to determine causality. The results can only indicate a relationship between attachments/connections and self-injury, and the extent to which attachments/connections can predict self-injury. It could not be determined whether or not one of the independent variables actually caused self-injury.

Of interest, the mother and father subscales for the IPPA (i.e., trust, communication, and alienation) were significantly correlated with one another. Future researchers may prefer to use total scores for mother, father, and peer attachment rather than the original subscales given these strong correlations between and among the subscales.

While the Self Injury Questionnaire has been used in previous research, the overt self-injury subscale appears to have more utility than the indirect self-injury scale. The extent to which college students engage in risky behavior, such as drinking and sexual exploration, is somewhat developmental in nature. Learning to redefine one's self and his/her boundaries is one of the many developmental tasks of college student development, especially for more traditional students. While participants are asked if they engage in such behaviors, the extent to which students engage in risky behavior to indirectly hurt themselves is still unclear.

One final note to interject is that this study had a large sample size ($n = 494$). This could be beneficial in that there are more participants to study, but also problematic in that large sample sizes can increase the power to the point that any finding appears statistically significant (BBN Corporation, 1996). This suggests that the results should be interpreted with caution because while they are statistically significant, they're practical applications may not be significant.

Suggestions for Further Research on Self-Injurious Behaviors among College Students

There are several areas that could be considered for future research. One suggestion would be for future researchers to look at a more clinical population, which might provide for a more representative sample of self-injurers. Additionally, one limitation of the current study is the use of self-report measures. While these measures did provide the needed information, participants may or may not have been completely honest in their responses. Future research may be used to examine self-injurious behaviors through clinical interviews or direct observations via qualitative methods using a more clinical population than the college sample used in this study. Also, because the variables used in this study accounted for only a small amount of the variance in the dependent variables, the addition of other variables may be helpful in determining what the best predictor set is for both overt and indirect self-injury. Also, the analyses used for this study only included correlational analyses and regression analyses, which cannot explain causality.

A final consideration for future research is a focus on the quality of the relationships between adolescents and their parents and/or peers, and how the quality or nature of the relationship affects overt self-injury since this form can be so dangerous to

the adolescent. Research is needed in order to specifically tease out what it is about the quality of these relationships that may predict self-injury in order to protect college students and possibly others from these dangerous behaviors. For example, possible interaction effects between mother and father attachment in relation to college students' self-injurious behaviors could be explored.

Also, future research could be instrumental in determining how these behaviors can be prevented through further examination of these relationships, especially the relationships with fathers and peers since research is lacking in understanding overt self-injury and these results suggest its importance. The findings in this study suggest that something about the connection/attachment to peers and romantic partners predicts the frequency of indirect self-injury; however, the results do not explain how such connections/attachments are tied to the decision whether or not to engage in self-injury behaviors specifically in certain moments in time. Future research could be particularly important in this area given that this form of self-injury is so serious and common, and preventative and/or protective measures could be available if more were known. Further research would not just help to identify effective programs or interventions for college students who are at risk for risk-taking behaviors, including self-injury.

Implications for Theory and Practice

In summary, the nature and quality of relationships in the adolescent's life may play an important role in the frequency with which s/he chooses to engage in self-injury. Given the increase in incidence of self-injurious behaviors for both adults and adolescents (Farber, 2000; Yip, Ngan, & Lam, 2003), exploring the nature and quality of college students' relationships with parents, peers, and partners appear to be particularly

important for those in the mental health fields who are assisting and counseling college students who engage in self-injurious behaviors. One interesting and important area to explore with overt self-injury may be the quality and nature of college students' relationships with their fathers as well as their peers. This has both implications for practice and theory. An implication for practice may be that therapists focus more attention on the relationship with the father and how the college student is coping with any issues that exist in that relationship. It may be that fathers need more involved in therapy to help the adolescent work through these issues. It may also be important to educate fathers on the role they play in their child's well-being. Since fathers are sometimes not viewed as important in theoretical considerations, this may suggest that conceptualization of the problem also needs to emphasize the father/child relationship as well as the mother/child relationship.

With regard to peers, the practice aspect seems to be of extreme importance. Therapists may need to focus more on the healthy and unhealthy aspects of peer relationships with adolescents. It may also mean that therapists wear different hats as both advocates of community and school programs that promote positive peer interactions and educators on the dangers of negative peer interactions. It also adds to the theoretical conceptualization by emphasizing the social factors involved in overt self-injury.

Another important finding for practice would be the influence of peers and romantic partners on indirect forms of self-injury such as risk-taking. These behaviors such as drinking, substance use, and unprotected sex could cause serious harm to the college student and are extremely important to acknowledge in treatment. The findings

suggest that these issues may need to be addressed through exploring the college students relationships with romantic partners and peers as well as the quality of these relationships. Educators, mental health professionals, and others involved in the care of adolescents who self-injure may seek ways to help adolescents form more healthy relationships as well as activities that promote positive self-image and peer support. This may mean helping the college student to find activities in school or the community in which they will find more positive support since the findings suggest that alienation from peers or possibly negative peer influences lead to self-injury behaviors. Activities such as mentoring programs could be helpful in modeling healthy development and positive behaviors. A final implication may be that practice using forms of modeling may be helpful in teaching healthy relationships to the adolescent. This could be achieved by a very supportive and empathic relationship in which the adolescent feels this sense of mutuality and care. Modeling could also be helpful in showing the adolescent how a healthy relationship looks through the actions of the therapist and interactions with the therapist. Additionally, therapy aimed at repairing or healing these disconnections in relationships may be extremely beneficial. More research could determine specifically which forms of therapy would be most effective in doing this, but it would seem that any supportive relationship in which the college student is allowed to express past traumas and disconnections, develop a healthy connection with another person, and learn more healthy coping mechanisms would be beneficial.

Attachment theorists often place greater importance on the relationship individuals have with their mother since the historical significance of mothers as the primary caregivers. However, the results of this study indicate that the father attachment

may actually be more important for adolescents who are engaging in overt self-injury. Additionally, peer attachments were more important in indirect and overt forms of self-injury, which suggests that it is not simply the attachment to the primary caretaker, but attachments in general that are important in the psychological well-being and coping resources of adolescents. The results for peer and romantic attachments do support relational-cultural theory in that this theory focuses on the importance of connections with others in the psychological well-being of an individual. Disconnections created by isolation from others, leads to suffering (Jordan, 2001). Overall, the results may indicate a mix of both theories for conceptualizing self-injury; however, without the focus of one specific attachment/connection as being the most important.

Another important finding for practice would be the influence of peers and romantic partners on indirect forms of self-injury such as risk-taking. Educators, mental health professionals, and others involved in the care of adolescents who self-injure may look seek ways to help adolescents form more healthy relationships as well as activities that promote positive self-image and peer support.

Summary

The purpose of this study was to explore the relationships of parent-adolescent attachments (trust, communication, alienation), peer attachment (trust, communication, alienation), and mutuality in the romantic/dating relationship with the frequency of self-injurious behaviors in college students. Variables were chosen based on attachment theory and relational-cultural theory. Results indicated that parent-adolescent attachment, peer attachment, mutuality in dating relationships were significantly correlated with both overt forms of self-injury and indirect forms of self-injury. Without blocking variables,

the predictor set as a whole significantly predicted the frequency of overt and indirect self-injury in college students. However, when variables were blocked, father attachment and peer attachment were significant predictors of overt self-injury while peer attachment and mutuality in the romantic/dating relationship were significant predictors of indirect self-injury. Future research may be used to determine causality, the influence of other variables in understanding self-injury, and the importance of studying the relationships of attachments/connects and self-injury in clinical samples of college students. Implications for practice include helping college students to build upon and strengthen relationships with parents, peer, and partners with specific focus on trust, communication, and healthy connections in these relationships. Additionally, educating the community, schools, and families on the potential effects of unhealthy relationships in relation to self-injury could help to both protect and prevent the incidence of self-harm.

References

- Ainsworth, M.D., Blehar, M.C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Hillsdale, New Jersey: Lawrence Erlbaum Associates.
- Alexander, L.A. (1999). The functions of self-injury and its link to traumatic events in college students (Doctoral dissertation, University of Massachusetts, 1999). *Dissertation Abstracts International-B*, 60(05), 2328.
- Allen, J.P, Aber, J.L., & Leadbeater, B.J. (1990). Adolescent problem behaviors: The influence of attachment and autonomy. *Psychiatric Clinics of North America*, 13(3), 455-467.
- Austin, L, & Kortum, J. (2004). Self-injury: The secret language of pain for teenagers. *Education*, 124(3), 517-527.
- BBN Corporation (1997, March 13). *PROPHET Statguide: Do your data violate normality test assumptions?* Retrieved April 15, 2008 from www.basic.northwestern.edu/statguidefiles/n-dist_ass_vio.html
- Barber, J.G., & Delfabbro, P. (2000). Predictors of adolescent adjustment: Parent-peer relationships and parent-child conflict. *Child and Adolescent Social Work Journal*, 17(4), 275-288.
- Bowlby, J. (1973). *Attachment and loss. Separation: Anxiety and anger* (Vol. 2). New York: Basic Books.
- Bowlby, J. (1979). *The making & breaking of affectional bonds*. London:

Routledge.

- Bowlby, J. (1988). *A secure base: Parent-child attachment and healthy human development*. New York: Basic Books.
- Brack, G., Gay, M.F., & Matheny, K.B. (1993). Relationships between attachment and coping resources among late adolescents. *Journal of College Student Development*, 34, 212- 215.
- Connors, R. (1996). Self-injury in trauma survivors: 1. functions and meanings. *American Journal of Orthopsychiatry*, 66(2), 197-206.
- Cooper, M.L., Shaver, P.R., & Collins, N.L. (1998). Attachment styles, emotion regulation, and adjustment in adolescence. *Journal of Personality and Social Psychology*, 74(5), 1380-1397.
- Crawford, T., Geraghty, W., Street, K., & Simonoff, E. (2003). Staff knowledge and attitudes towards deliberate self-harm in adolescents. *Journal of Adolescence*, 26, 619-629.
- Evans, J., Reeves, B., Platt, H., Leibenau, A., Goldman, D., Jefferson, K., and Nutt, D. (2000). Impulsiveness, serotonin genes and repetition of deliberate self-harm (DSH). *Psychological Medicine*, 30, 1327-1334.
- Farber, S. (2000). *When the body is the target*. Northvale, NJ: Jason Aronson.
- Favazza, A.R. (1998). The coming of age of self-mutilation. *The Journal of Nervous and Mental Disease*, 186(5), 259-268.
- Favazza, A.R. (1996). *Bodies under siege: Self-mutilation and body modification in culture and psychiatry* (2nd ed.). Baltimore: The Johns Hopkins University Press.

- Favazza, A.R. (1989). Why patients mutilate themselves. *Hospital and Community Psychiatry, 40*(2), 137-145.
- Feeney, B.C. (2006). An attachment theory perspective on the interplay between intrapersonal and interpersonal processes. In K.D. Vohs & E.J. Finkel (Eds.), *Self and relationships: Connecting intrapersonal and interpersonal processes* (pp.133-159). New York: The Guildford Press.
- Field, T., Diego, M., & Sanders, C. (2002). Adolescents' parent and peer relationships. *Adolescence, 37*(145), 120-129.
- Genero, N.P., Miller, J., & Surrey, J. (1992). *The Mutual Psychological Development Questionnaire* (Stone Center Rep. No. 1). Wellesley, MA: Wellesley College.
- Genero, N.P, Miller, J., Surrey, J., & Baldwin, L.M. (1992). Measuring perceived mutuality in close relationships: Validation of the Mutual Psychological Development Questionnaire. *Journal of Family Psychology, 6*(1), 36-48.
- Goldstein, S.E., Davis-Kean, P.E., & Eccles, J.S. (2005). Parents, peers, and problem behavior: A longitudinal investigation of the impact of relationship perceptions and characteristics on the development of adolescent problem behavior. *Developmental Psychology, 41*(2), 401-413.
- Harper, M.S., Dickson, J.W., & Welsh, D.P. (2006). Self-silencing and rejection sensitivity in adolescent romantic relationships. *Journal of Youth and Adolescence, 35*(3), 459-467.
- Hay, I., & Ashman, A.F. (2003). The development of adolescents' emotional stability and general self-concept: The interplay of parents, peers, and gender. *International Journal of Disability, Development, and Education, 50*(1), 77-91.

- Herpertz, S., Sass, H., & Favazza, A. (1997). Impulsivity in self-mutilative behavior: Psychometric and biological findings. *Journal of Psychiatry*, 31(4), 451-465.
- Jordan, J.V. (1991). The meaning of mutuality. In J.V. Jordan, A.G. Kaplan, J.B. Miller, I.P. Stiver, & J.L. Surrey, *Women's growth in connection: Writings from the Stone Center* (pp. 81-96). New York: The Guilford Press.
- Jordan, J.V. (2001). A relational-cultural model: Healing through mutual empathy. *Bulletin of the Menniger Clinic*, 65(1), 92-103.
- Kaplan, A.G., & Klein, R. (1990). Women and suicide: The cry for connection. *Works in Progress* 46. Wellesley, MA: Stone Center Working Paper Series.
- Kenny, M.E., & Donaldson, G.A. (1991). Contributions of parental attachment and family structure to the social and psychological functioning of first-year college students. *Journal of Counseling Psychology*, 38(4), 479-486.
- Kenny, M.E., & Rice, K.G. (1995). Attachment to parents and adjustment in late adolescent college students: Current status, applications, and future considerations. *The Counseling Psychologist*, 23(3), 433-456.
- La Greca, A.M., & Harrison, H. (2005). Adolescent peer relations, friendships, and romantic relationships: Do they predict social anxiety and depression? *Journal of Clinical Child and Adolescent Psychology*, 34(1), 49-61.
- Levenkron, S. (1998). *Cutting: Understanding and overcoming self-mutilation*. New York: W.W. Norton and Company.
- MacAniff Zila, L., & Kiselica, M.S. (2001). Understanding and counseling self-mutilation in female adolescents and young adults. *Journal of Counseling & Development*, 79, 46-52.

- Meyer, J.H., McMain, S., Kennedy, S.H., Korman, L., Brown, G.M., DaSilva, J.N., et al. (2003). Dysfunctional attitudes and 5-HT₂ receptors during depression and self-harm. *American Journal of Psychiatry*, 160(1), 90-99.
- Miller, J.B. (1991). The development of women's sense of self. In J.V.Jordan, A.G. Kaplan, J.B.Miller, I.P. Stiver, & Surrey, J.L., *Women's growth in connection: Writings from the Stone Center* (pp.11-26). New York: The Guilford Press.
- Miller, J.B., & Stiver, I.P. (1997). *The healing connection: How women form relationships in therapy and in life*. Boston: Beacon Press.
- Muehlenkamp, J.J. and Gutierrez, P.M. (2004). An investigation of differences between self-injurious behavior and suicide attempts in a sample of adolescents. *Suicide and Life-Threatening Behavior*, 34(1), 12-23.
- Muehlenkamp, J.J., Swanson, J.D., & Brausch, A.M. (2005). Self-objectification, risk-taking, and self-harm in college women. *Psychology of Women Quarterly*, 29, 24-32.
- Nakash, O., Williams, L.M., Jordan, J.V. (2004). Relational-Cultural Theory, body image, and physical health. *Works in Progress 416*. Wellesley, MA: Stone Center Working Paper Series.
- National Mental Health Association (NMHA) (2006). *Self-Injury*. Retrieved September 10, 2006, from <http://www.nmha.org/infoctr/factsheets/self-injury.cfm>
- Overbeek, G., Vollebergh, W., Engels, R.C.M.E., & Meeus, W. (2003). Parental attachment and romantic relationships: Associations with emotional disturbance during late adolescence. *Journal of Counseling Psychology*, 50(1), 28-39.

- Pooley, E.C., Houston, K., Hawton, K., & Harrison, P.J. (2003). Deliberate self-harm is associated with allelic variation in the tryptophan hydroxylase gene (TPH A779C), but not with polymorphisms in five other serotonergic genes. *Psychological Medicine*, 33, 775-783.
- Powell Whitley, J., Denton, R., & Mattsson, A. (1995). Adolescent depression: Effects of mutuality in the mother-adolescent dyad and locus of control. *American Journal of Orthopsychiatry*, 65(2), 263-273
- Santa Mina, E.E., Gallop, R., Links, P., Heslegrave, R., Pringle, D., Wekerle, C., & Grewal, R. (2006). The Self-Injury Questionnaire: Evaluation of the psychometric properties in a clinical population. *Journal of Psychiatric and Mental Health Nursing*, 13, 221-227.
- Self-injury: Is this troubling behavior a growing problem in adolescents? (2004, March). *The Brown University Child and Adolescent Behavior Letter*, 20(3), 1-8.
- Spencer, R., Jordan, J., & Sazama, J. (2004). Growth-promoting relationships between youth and adults: A focus study group. *Families in Society*, 85(3), 354-362.
- Sivam, S.P. (1995). GBR-12909-induced self-injurious behavior: Role of dopamine. *Brain Research*, 690, 259-263.
- Soares, I., Lemos, M.S., & Almeida, C. (2005). Attachment and motivational strategies in adolescence: Exploring links. *Adolescence*, 40(157), 129-154.
- Stanton-Salazar, R.D., & Urso Spina, S. (2005). Adolescent peer networks as a context for social and emotional support. *Youth & Society*, 36(4), 379-417.

- Stone, J.A., & Sias, S.M. (2003). Self-injurious behavior: A bi-modal treatment approach to working with adolescent females. *Journal of Mental Health Counseling*, 25(2), 112-125.
- Strong, M. (1998). *A bright red scream: Self-mutilation and the language of pain*. New York: Viking.
- Surrey, J.L. (1991). The self-in-relation: A theory of women's development. In J.V. Jordan, A.G. Kaplan, J.B. Miller, I.P. Stiver, & Surrey, J.L., *Women's growth in connection: Writings from the Stone Center* (pp. 51-66). New York: The Guilford Press.
- Turner, V.J. (2002). *Secret scars: Uncovering and understanding the addiction of self-injury*. Center City, Minnesota: Hazelden.
- Ungar, M. (2004). The importance of parents and other caregivers to the resilience of high-risk adolescents. *Family Process*, 43(1), 23-41.
- van der Kolk, B.A., Perry, J.C., & Herman Lewis, J. (1991). Childhood origins of self-destructive behavior. *American Journal of Psychiatry*, 148(12), 1665-1671.
- White Kress, V.E., Gibson, D.M., & Reynolds, C.A. (2004). Adolescents who self-injure: Implications and strategies for school counselors. *Professional School Counseling*, 7(3), 195-201.
- Yip, K., Ngan, M., & Lam, I. (2003). A qualitative study of parental influence on and response to adolescents' self-cutting in Hong Kong. *Families in Society*, 84(3), 405-416.

Table 1

Demographics of the Sample (n = 494)

Age	m =19.41	sd = 1.65	range = 18-25
Gender	n		%
Male	144		29.2
Female	349		70.8
Race	n		%
African American	19		3.8
Hispanic	6		1.2
Indian/Native American	26		5.3
White/Caucasian	399		80.8
Asian	6		1.2
Other	4		.8
Multiracial	31		6.3
Sexual Orientation	n		%
Heterosexual	473		96.3
Gay/Lesbian	9		1.8
Bisexual	9		1.8

Table 1 (continued)

Demographics of the Sample (n = 494)

Year in College	n	%
Freshman	237	48.4
Sophomore	97	19.8
Junior	76	15.4
Senior	80	16.3
Family Income	n	%
<10,000	28	5.7
10,001-15,000	11	2.3
15,001-20,000	13	2.7
20,001-30,000	31	6.4
30,001-40,000	15	3.1
40,001-50,000	57	11.7
50,001-60,000	43	8.8
60,001-70,000	53	10.9
70,001-80,000	48	9.9
80,001-90,000	29	6.0
90,001 or above	158	32.4

Table 2

Multiple Regression Findings for Mother Attachment, Father Attachment, Peer Attachment as Predictors of Overt Self-Injury

Predictors	R	Rsqr	F
Mother Trust, Communication, Alienation	.24	.056	9.71**
Father Trust, Communication, Alienation	.23	.052	8.85**
Peer Trust, Communication, Alienation	.23	.053	9.18**
Parent Attachment (Mother and Father)	.28	.079	6.87**
Mother Attachment, Father Attachment, Peer Attachment, Mutuality	.35	.123	3.74**

* p<.05

** p<.01

Table 3

Multiple Regression Findings for Mother Attachment, Father Attachment, Peer Attachment as Predictors of Indirect Self-Injury

Predictors	R	Rsquared	F
Mother Trust, Communication, Alienation	.17	.028	4.62**
Father Trust, Communication, Alienation	.15	.022	3.71*
Peer Trust, Communication, Alienation	.20	.041	6.92**
Parent Attachment (Mother and Father)	.20	.039	3.25**
Mother Attachment, Father Attachment, Peer Attachment, Mutuality	.31	.093	2.72**

* p<.05

** p<.01

Table 4

Hierarchical Regression Findings for Mother Attachment, Father Attachment, Peer

Attachment, and Mutuality with Overt Self-Injury

Model	Rsq Change	F Change
Mother Attachment	.028	2.61
Father Attachment	.049	4.77**
Peer Attachment	.043	4.37**
Mutuality in Romantic/ Dating Relationship	.003	.99

* $p < .05$

** $p < .01$

Table 5

Hierarchical Regression Findings for Mother Attachment, Father Attachment, Peer

Attachment, and Mutuality with Indirect Self-Injury

Model	Rsq Change	F Change
Mother Attachment	.016	1.48
Father Attachment	.011	.98
Peer Attachment	.039	3.69*
Mutuality in Romantic/ Dating Relationship	.027	8.06**

* p< .05

** p<.01

Table 6

Correlation Matrix of Main Study Variables

	SIQTOT	SIQID	SIQDIR	MDQTOT	MTRU	MCOM	MALI	FTRU	FCOM	FALI	PTRU	PCOM	PALI
SIQTOT	1.00												
SIQID	.92**	1.00											
SIQDIR	.72**	.39**	1.00										
MPDQTOT	-.25**	-.23**	-.16**	1.00									
MTRU	-.20**	-.15**	-.21**	.20**	1.00								
MCOM	-.20**	-.14**	-.22**	.29**	.82**	1.00							
MALI	.22**	.16**	.22**	-.22**	-.77**	-.75**	1.00						
FTRU	-.16**	-.11*	-.17**	.09	.36**	.34**	-.38**	1.00					
FCOM	-.13**	-.08	-.15**	.13*	.26**	.35**	-.36**	.85**	1.00				
FALI	.20**	.14**	.22**	-.17**	-.29**	-.30**	.46**	-.77**	-.78**	1.00			
PTRU	-.20**	-.17**	-.17**	.34**	.22**	.26**	-.25**	.14**	.10*	-.15**	1.00		
PCOM	-.14**	-.11*	-.13**	.37**	.15**	.26**	-.17**	.10*	.11*	-.07	.84**	1.00	
PALI	.23**	.18**	.29**	-.35**	-.21**	-.27**	.41	-.22**	-.20**	.35**	-.58**	-.46**	1.00

Table 6 (continued)

Correlation Matrix of Main Study Variables

*p<.05 ** p<.01

SIQTOT =Self-Injury Total

MCOM=Mother Communication

PALI=Peer Alienation

SIQID =Indirect Self-Injury

MALI=Mother Alienation

SIQDIR =Overt Self-Injury

FTRU=Father Trust

MPDQTOT =Mutuality Total

FCOM=Father Communication

MPDQP =Mutuality Partner

FALI=Father Alienation

MPDQS =Mutuality Self

PTRU=Peer Trust

MTRU =Mother Trust

PCOM=Peer Communication

APPENDICES

APPENDIX A: Chapter II

CHAPTER TWO

LITERATURE REVIEW

Introduction

Self-injury is a growing problem among adolescents. The serious nature of the behavior warrants the attention of mental health professionals as well as others involved in the care and treatment of adolescents. Self-injury has been associated with neurobiological problems, childhood abuse and trauma, and self-objectification, but other factors that are more interpersonal in nature have not been examined. In this critical review of the literature, self-injury will be operationally defined and discussed with regard to the various types. Possible causes of self-injury will be described and discussed in the context of research on each. The basic concepts of attachment theory and relational-cultural theory will be explored in relation to how each might explain self-injury. Finally, three types of relationships, parent-adolescent, peer, and romantic/dating, will be examined to explore a potential relationship among these variables and self-injury. The need for additional research regarding the correlates of self-injury will be advanced, with a particular emphasis on exploring the relationships of parent-adolescent, peer, and romantic/dating relationships with self-injury.

Self-Injury

Self-injury, also referred to as self-mutilation (SM), deliberate self-harm (DSH), and self-injurious behavior (SIB), is a growing problem for mental health professionals, as well as, parents and educators. Incidences of self-injury among adolescents appear to be increasing at an alarming rate. The prevalence rate of self-injury in the general population of adolescents and adults is approximately 1,400 in every 100,000 people

(Farber, 2000). Yip, Ngan, and Lam (2003) place the figures somewhat higher reporting that 1,800 out of 100,000 people ages 15-35 have engaged in self-injury. While this estimate considers both adolescent and adult populations, the numbers are nevertheless, staggering. Self-injury often begins in adolescence around age 14 (Austin & Kortum, 2004), and typically continues into young adulthood and possibly decades later, depending on the individual (Austin & Kortum, 2004; Favazza, 1989).

The seriousness of the behavior is not simply that it does begin at such a tender age, but additionally, that it can lead to other issues such as suicide attempts (Favazza, 1989), and other serious symptoms including depression, anxiety, and personality disorders (NMHA, 2006). Others suggest that it may also become an addiction and a coping mechanism (Austin & Kortum, 2004; Connors, 1996). Self-injury can be a “...fundamentally adaptive and life-preserving coping mechanism” (Connors, 1996, p. 199). In other words, the individual learns that by self-injuring he/she is able to cope with turmoil, and thus maintain existence. With all the issues that adolescents face on a day-to-day basis such as drugs and alcohol, sex, and bullying, it is a troubling to think that self-injury may be the primary coping mechanism for some. Given the rise in this behavior and the possible consequences of this behavior, further investigation is warranted in order to both better understand and prevent the behavior.

Definitions and Types

What is self-injury? Self-injury is “...a class of behavior that causes physical or psychological harm to the individual” (Alexander, 1999, p. 1). Self-mutilation is “...the direct, deliberate destruction or alteration of one’s own body tissue without conscious suicidal intent” (Favazza, 1996, p. 225). People do not typically engage in self-injury

with the intent to commit suicide. However, people who engage in self-injury are aware that the behavior can be harmful (Crawford, Geraghty, Street, and Simonoff, 2003).

New, Trestman, Mitropoulou, Benishay, Coccaro, Silverman, and Siever (1997) define self-mutilation as "...self-directed aggression that involves direct physical injury to oneself of sufficient severity to inflict tissue damage, such as bleeding, scarring or bruising, regardless of suicidal intent" (p. 17). This definition is similar to those above, but specifies the type of tissue damage that occurs. Turner (2002) adds that the act is impulsive and involves a heightened sense of tension.

While the definitions are varied, all authors agree that the behavior is self-imposed, resulting in physical and emotional damage, and deliberate. These definitions provide a basis for the behavior, but additional sources provide categories or types within the given definitions.

According to Stone and Sias (2003), "Self-injurious behavior can be divided into two broad categories: culturally sanctioned and deviant self-mutilation" (p. 113).

Culturally sanctioned activities might include tattooing, body piercing, or culturally specific rituals. The deviant type is "...the deliberate alteration or destruction of body tissue without conscious suicidal intent," which more closely fits the above definitions (Stone & Sias, 2003, p. 113). Favazza (1998) suggests that there are three, not two, types of self-mutilation: major self-mutilation, stereotypic self-mutilation, and superficial/moderate self-mutilation. Favazza (1998) writes that "Major SM refers to infrequent acts such as eye enucleation, castration, and limb amputation" (p. 263). The second type, stereotypic self-mutilation, "...refers to acts such as head banging and hitting, orifice digging, arm hitting, throat and eye gouging, self-biting, tooth extraction,

and joint dislocation” (p. 264). The final form of self-mutilation more closely fits the purposes of this study. Favazza (1998) states:

Superficial/moderate SM refers to acts such as trichotillomania, nail biting, and skin picking and scratching, which comprise the compulsive type, and to skin cutting, carving, and burning, needle sticking, bone breaking, and interference with wound healing, which comprise the episodic and repetitive types. (p. 264)

Superficial/moderate self-mutilation is the most prevalent type of self-mutilation while cutting and burning are the most prevalent of the superficial/moderate types (Favazza, 1998).

While this is a thorough classification system, for the purposes of this study, another classification of self-injury will be used. According to Connors (1996), there are four distinct categories of self-injury. The first category is body alterations and involves behaviors that are culturally more acceptable as a way to conform such as tattoos and plastic surgery. Although these behaviors are the intentional alternation of the body and can be harmful, they are often accepted by the individual’s culture or group. The second category is indirect self-harm, which as the name suggests is behaviors that lack the intent to cause harm, but do simply by their nature. An example of this would be binge drinking in which the individual is not intentionally harming himself/herself, but does by engaging in such a dangerous act. The third category is failure to care for self. An example of this may be not seeking medical attention when needed. The final category is overt self-injury. Overt self-injury or simply self-injury is “...direct actions that injure the body and that do not appear to fit the category of body alterations...” (p.199). Overt self-injury includes cutting, burning, erasing, and other intentional forms of self-harm. For the

purposes of this study both indirect and overt self-injurious behaviors will be considered. While the definitions and categories for self-injury vary, all suggest some sort of damage to the body whether intentional or unintentional. While suicide is a potential risk factor involved, the consensus is that the behavior is not intended as a means of ending one's life.

Functions and Causes of Self-Injury

Just as the definitions and types of self-injury vary, so do the possible functions and causes of self-injury. According to the Brown University Child and Adolescent Behavior Letter's article "Self-Injury: Is This Troubling Behavior a Growing Problem in Adolescents?," self-injury may serve as a coping mechanism through which the stresses of an adolescent's life are controlled. Stone and Sias (2003) see the behavior as a functional way in which events and feelings are handled. Finally, Connors (1996) writes that self-injury may be an attempt to avoid suicide, but cautions that "It is also true that suicidality and self-injury, although different, can co-exist" (p. 199). The consensus among these authors appears to be that the primary function of self-injury is to cope with events in the individual's life that may be creating feelings of stress and pain. While it is important to understand the function of the behavior for treatment purposes, the causes of the behavior may be more important in preventing the behavior.

Favazza (1989) suggests that possible causes of self-injury include tension release, control, security, releasing anger, and sexuality. The Brown University Child and Adolescent Behavior Letter's article "Self-Injury: Is This Troubling Behavior a Growing Problem in Adolescents?" additionally lists abuse, divorce, and substance use in the family (2004). This review will specifically examine neurobiological, abuse/trauma, and

self-objectification/eating disorders, and later, relationship problems as potential causes of self-injury.

Neurobiological. Unlike the other potential causes that will be reviewed, the neurobiological causes are chemical and physical in nature, but have an effect on the psychological aspects of the individual as well. Neurobiological causes refer to the neurotransmitter or chemicals in the brain, and the problems associated with the transmission of these chemicals to various parts of the brain and body. Serotonin and dopamine have been linked to self-injurious behaviors (Meyer et al., 2003; Pooley et al., 2003; Sivam, 1995). Endogenous opiates are believed to be involved in self-injury, but research is lacking. This section will discuss research on the relationship between these neurotransmitters and self-injury.

According to Strong (1998), “Serotonin is a critical neurotransmitter that influences mood and aggression” (p. 108). Serotonin has typically been the neurotransmitter studied with regard to self-injury. Serotonin is primarily found in the raphe nuclei part of the brain whose nerves are connected to another area of the brain, the hypothalamus (Favazza, 1996). The hypothalamus is “...a structure that plays a role in regulating impulsivity and aggression as well as appetite, mood, and the sleep-wake cycle” (Favazza, 1996, p. 261). Thus, it would make sense that a lack of serotonin could affect the regulation of mood and impulse, which are both characteristics of self-injurers.

Pooley, Houston, Hawton, and Harrison (2003) examined the role of six serotonergic genes (which are involved in the transmission of serotonin; four polymorphisms, two 5-HT-related genes, and monoamine oxidase A) in individuals who deliberately self-injure. Participants in the study were 129 patients ages 15 and over who

came to the hospital after engaging in self-injury. DNA was taken from each of the participants for the purpose of testing the genes. Additionally, the study used a control group of 329 participants ages 19-71 from a blood bank. The study found a link between one polymorphism, A779 of the tryptophan hydroxylase gene, and deliberate self-injury suggesting that serotonin may potentially be a culprit in the occurrence of self-injury. One limitation of the study is that only clinical populations were used in the sample; participants presented to the hospital with self-injury. This does not take into account those who do not seek help for the behavior. Additionally, only serotonin was examined, which excludes any other factors that may come into play.

Meyer, McMain, Kennedy, Korman, Brown, DaSilva, et al. (2003) studied the relationship between the 5-HT agonism in the prefrontal cortex and deliberate self-injury. According to these authors, "...available evidence suggests that a subpopulation of patients with major depression and/or chronic self-harm behavior have low levels of serotonin (5-HT) stimulation of 5-HT₂ receptors" (Meyer et al., 2003, p. 90). The authors hypothesized that high levels of 5-HT would decrease dysfunctional attitudes while low levels of 5-HT would increase these attitudes. The study involved two separate experiments. In the first experiment, 29 participants who had no history of self-injury or depression were given the Dysfunctional Attitudes Scale, and an hour later, were given a drug to release serotonin. One hour after administration of the drug, participants were again asked to complete the Dysfunctional Attitudes Scale. Results showed a decrease in dysfunctional attitudes from the first administration of the Dysfunctional Attitudes Scale to the second administration suggesting that the release of serotonin caused by the drug played a role in decreasing these attitudes. The second experiment included 22

participants with depressive symptoms, 18 who had engaged in self-injury, and 29 who had no history of either of the above. The participants were examined by PET scan to determine serotonin levels. Results of this experiment found a link between dysfunctional attitudes associated with major depression and low levels of 5-HT agonism. While the results of this study provide important knowledge with regard to individuals who self-injure, the sample size consisted of only 18 individuals who reported self-injuring, which may be too small of a sample to generalize the findings to the population of individuals who engage in self-injurious behaviors.

New, Trestman, Mitropoulou, Benschay, Coccaro, Silverman, and Siever (1997) studied the relationship between self-mutilation and serotonergic activity. These authors hypothesized that because self-injury involves aggression and aggression is associated with problems in serotonergic activity, that there may be a link between aggression and self-injury. Participants for the study were 97 patients who had engaged in self-injury or suicide attempts and who had a personality diagnosis. These patients were given a D,L-fenfluramine challenge to determine the amount and activity of serotonin in their brains. Those who engaged in self-injury or suicide attempts showed low prolactin and cortisol levels suggesting a deficiency in serotonin production. A limitation of this study is that it included only individuals with a personality disorder diagnosis. Though self-injury is a characteristic of some disorders, it is not a current diagnosis. This may not allow for the translation of results to individuals who do self-injure, but who do not meet criteria for a personality disorder.

Evans, Reeves, Platt, Leibenau, Goldman, Jefferson, and Nutt (2000) focused on the impulsiveness characteristic of self-injury. Specifically, they studied genetic

polymorphisms of tryptophan hydroxylase (TPH) and 5-HT_{2c} receptors in relation to impulsiveness. Additionally, the authors sought to determine if those who engage in deliberate self-harm are more impulsive than individuals who do not. Participants were individuals who presented to the hospital after engaging in self-harm. These participants were given Eysenck's Personality Scales and The Hospital Anxiety and Depression Scale. In addition to these scales, participants gave blood to test the TPH polymorphism and 5-HT_{2c} receptors. Results indicated a relationship between a polymorphism of 5-HT_{2c} and impulsiveness in males. Those who did self-injure had higher impulsivity scores than those who had not engaged in the behavior suggesting that impulsivity may be a characteristic of self-injury. One limitation of this study is that it focused on a perceived characteristic of self-injury, impulsivity, and not necessarily self-injury itself.

Herpertz, Sass, and Favazza (1997) also studied the relationship between impulsivity and self-injury. The sample consisted of 120 inpatient participants. Of the 120, 54 had engaged in self-injury, 33 had not engaged in self-injury, but were impulsive, and 33 were without impulsive behaviors. A control group was also used that included 45 participants who had no clinical diagnoses. Participants completed the Barratt Impulsiveness Scale, the State-Trait Anger Expression Inventory, and the Inventory for the Assessment of Factors of Aggressiveness. Additionally, the subjects were interviewed using the Structured Clinical Interview for the DSM-III-R. A d-fenfluramine test was used to test serotonergic functioning. Herpertz, Sass, and Favazza (1997) write, "Self-mutilators engaged in multiple self-harming modes of impulsive behavior, e.g. repeated self-mutilation, suicide attempts, substance abuse, bingeing, and promiscuity" (p. 461). This suggests a link between impulsivity and self-mutilation, which the authors state was

supported by the findings. Additionally, the authors reported that anger, depression, impulsivity, and self-injury occur together possibly due to the lack of serotonin. The authors suggested two limitations that might create difficulties with regard to generalizing the results. The first is that the study focused on anger as an affective reaction and not other feelings. The second is that the sample size did not allow for other influences to be accounted for (Herpertz, Sass, & Favazza, 1997).

While serotonin levels and self-injury have been examined in several studies, other neurobiological factors (e.g., dopamine, enkephalins) have not been as intensely researched. However, Sivam (1995) did investigate the role of dopamine in self-injury. Strong (1998) writes that dopamine is a catecholamine that influences functions such as “...nerve response, heart rate, and other physiological aspects of the fight-or-flight response” (p. 108). Sivam’s (1995) study used a dopamine uptake inhibitor called GBR-12909 to test if dopamine production would increase self-injurious behavior in rats. Sivam (1995) found that the GBR did decrease dopamine production, which was related to self-injurious behaviors in rats. While this study does suggest a link between dopamine levels and self-injury, the study did not consist of human participants making it difficult to generalize the findings to the population examined in this review.

A final neurobiological aspect considered in the research is enkephalins, which Favazza (1996) defines as “...opium-like substances produced by the brain and various glands; among their actions are the suppression of pain and the regulation of emotions” (p. 262). Favazza (1996) writes that the release of these chemicals could have the effect of eliminating the pain creating a sort of addiction to the behavior.

Overall, the research findings on neurobiological aspects of self-injury indicate that a problem exists in the transmission of chemicals in the brain and body for people who engage in self-injurious behaviors. Research suggests that serotonin, dopamine, and endogenous opiates may be the culprits. While the neurobiological researchers focus on physical aspects of psychological distress and self-injury, other researchers focus on intrapersonal and interpersonal factors associated with self-injurious behaviors. In this next section, the self-injury and abuse/trauma research will be presented.

Abuse/Trauma. Abuse and trauma, like neurobiology, are another potential cause or correlate of self-injury. Like the neurobiological causes, abuse and trauma may involve physical factors, but unlike neurobiological causes, the psychological effects of the physical are at the core. According to Strong (1998), “There are many roots to cutting, but the single, most common causal factor is childhood sexual abuse” (p. 64). Strong (1998) reports that “As nearly every study of chronic self-injurers indicates, 50 to 90 percent of those studied report being sexually victimized as children” (p. 64). MacAniff Zila and Kiselica (2001) report that self-injury could be a function of coping with one’s sexuality due to abuse. Additionally, MacAniff and Kiselica (2001) report that sexual identity, which includes abuse, gender issues, and body image, are factors to be examined.

van der Kolk, Perry, and Lewis Herman (1991) examined the effects of childhood trauma including both abuse and neglect on self-destructive behavior. The study consisted of 74 participants who were ages 18-39. Participants met criteria for borderline personality disorder, antisocial personality disorder, schizotypal personality disorder, or bipolar II disorder. Participants were given the Traumatic Antecedents Questionnaire to

assess traumatic experiences. Results indicated that childhood abuse and parental neglect did correlate with self-injury and suicide attempts. One limitation of this study is that it examined a clinical population only and may not generalize to non-clinical populations. Additionally, the study focused on the relationship between traumatic events and self-injury, which may not take into account other variables that may contribute to the self-injury.

Alexander (1999) also studied the relationship between traumatic events and self-injury. The study was completed in two parts. A total of 244 undergraduate students participated in the two studies. Subjects were given the Self-Injury Questionnaire, The Traumatic Events Questionnaire, and the Trauma Symptom Checklist. Of the 244 subjects, 80 returned to retake the Self-Injury Questionnaire. Alexander (1999) found that 9.4% of subjects had engaged in cutting or gouging, while 7% had burned themselves. Alexander (1999) found a significant positive relationship between trauma experience and the likelihood of self-injurious behaviors. A limitation of this study was the lack of diversity in the sample with the majority of participants being Caucasian.

These studies suggest a link between self-injury and traumatic events such as abuse and neglect as a child. Sexual abuse in particular appears to have a strong link to self-injurious behaviors. Favazza (1996) suggests that this link may be the result of a need to feel real, which is experienced by those who have been sexually abused. Children who have been sexually abused dissociate from the experience and later self-injure to feel (Favazza, 1996). This dissociation of the self may also be a link to another potential cause of self-injury. In this next section, the research on self-objectification, eating disorders, and self-injury will be explored.

Self-Objectification/Eating Disorders. Self-objectification and eating disorders share the common bond of dislike for one's own body. Like abuse, the individual has a sense of disgust for his/her own body for whatever reason. As a result, the body becomes the target of negative feelings that the individual has a need to release. However, while self-objectification has been studied in relation to self-injury, research is lacking to support the relationship between self-injury and eating disorders. Muehlenkamp, Swanson, and Brausch (2005) state that "Objectification of women occurs when a women's body, parts of her body, or sexual capabilities are separated from her person and regarded as representing her in exclusion of other personal attributes" (p. 24). In other words, the woman is viewed simply as how she looks or what her body can be used for, and not for whom she is. Like abuse and trauma, the individual may dissociate from the body because it is not seen as a part of him/her. Muehlenkamp, Swanson, and Brausch (2005) write:

It is argued that a negative view of the body may facilitate self-harm because the body is seen as a hated object. Adopting this view makes it more likely that an individual will feel detached from her/his body and the emotional investment in caring for the body will decline, making it easier to harm. (p. 24)

Muehlenkamp, Swanson, and Brausch (2005) examined this idea in their study. The authors examined self-objectification in relation to negative body regard and depression, and how this may affect risk-taking, and ultimately, self-injury. Participants for the study included 391 college undergraduates from a university in the Midwest. Participants were given the Objectified Body Consciousness Scale (OBCS) to measure objectification, the Body Investment Scale (BIS) to measure the level of investment in the

body, the Center for Epidemiological Studies Depression Scale (CES-D), and the National College Health Risk Behavior Survey (NCHRBS). A self-harm scale was not used, instead, the authors used an item on the BIS regarding self-harm, which states, “Sometimes I purposefully injure myself” (Muehlenkamp, Swanson, and Brausch, 2005). Results indicated that self-objectification did not directly affect self-harm; however, it did have an indirect effect on self-harm when taken with negative body regard and depression. Additionally, results indicated that self-objectification affected negative body regard, which affected depressive symptoms, which in turn affected self-harm. The authors reported several limitations to their study including a low-risk population and lack of a self-harm measure. While the findings of this study did not demonstrate a direct link between self-objectification and self-injury, the indirect link suggests that there may be a chain reaction of sorts.

Though no known research exists to posit a link or relationship between eating disorders and self-injury, the two often appear to go together. According to Strong (1998), eating disorders and self-injury have several common factors. These individuals share similar experiences including trauma. Both are a functional way to release feelings, and both involve the release of emotions through physical harm to the body.

Like abuse, self-objectification and eating disorders involve a physical manifestation of psychological distress. Both causes suggest dissociation from the body making it easier to harm. All the possible causes discussed appear to have some relationship with self-injury. However, with the exception of neurobiology, each of the other potential causes suggests aspects of another cause, which has not received attention. These causes focus on the intrapersonal; however, abuse and self-objectification suggest

that interpersonal factors may be at the root of the intrapersonal issues. As a result, it makes sense that there may be a disruption in attachments and connections with others that has previously not been explored. The next section will review the literature on connections with others by examining attachment theory and relational-cultural theory. Three specific types of relationships will also be examined with regard to the psychological adjust of adolescents, and how this may impact the potential for self-injury.

Theories of Attachments and Connections

According to Bowlby (1979), attachment theory is "...a way of conceptualizing the propensity of human beings to make strong affectional bonds to particular others and of explaining the many forms of emotional distress and personality disturbance..." (p. 127).

Attachment theory is concerned with the bonding of the infant to the mother or other caregiver, and how this relationship affects future relationships and views of self. Ainsworth, Blehar, Waters, and Wall (1978) write that attachment theory grew from an integration by Bowlby of many different approaches including psychoanalytic theory, ethology, behaviorism, and cognitive theory. Feeney (2006) states that there are three basic ideas suggested by attachment theory. These three concepts are (1) a genetic predisposition to bond with others, (2) these bonds are necessary to protect the individual from harm, and (3) the type of response given by the attachment figure helps to shape the personality.

Bowlby (1973) believed that the mother-child relationship is based on evolutionary concepts of survival and protection, which in turn creates behaviors associated with instinctual needs. Bowlby (1988) writes that attachment behavior, which

is “...any form of behaviour that results in a person attaining or maintaining proximity to some other clearly identified individual who is conceived as better able to cope with the world” is of the utmost importance in understanding attachment theory (p.27). Armsden and Greenberg (1987) write that “A sense of security is derived from the maintenance of a bond in which confidence in the availability (accessibility and responsiveness) of the attachment figure(s) predominates over fears concerning unavailability of this figure(s) in times of need” (p. 428). While attachment to others may be considered unhealthy or bad in lieu of psychology’s focus on the individual, Feeney (2006) writes that “...attachment behavior (or a reliance on significant others) in certain circumstances is not something to be discouraged and looked down upon. Instead, it is something that should be accepted as an intrinsic part of human nature and acknowledged for the role it plays in promoting optimal human functioning” (p. 134).

Bowlby (1973) stated that the early experiences the infant has within this relationship will determine how the infant reacts later in future relationships, which are referred to as internal working models. Feeney (2006) echoes this by stating that attachment theory is concerned with both the interpersonal and intrapersonal aspects of human beings, and how these interact to create personality characteristics. These personality characteristics are a result of the internal working model. Soares, Lemos, and Almeida (2005) consider this internal working model concept in the following:

Through early interaction with a supportive and sensitive attachment figure and through successful independent attempts, the child will develop a representation of the self as worthy of love, competent, and autonomous, as will it represent the world as responsive, predictable, and allowing freedom. (p. 130).

According to Cooper, Shaver, and Collins (1998), there are three types of attachment styles: securely attached, anxious, and avoidant. Each attachment style has characteristics that reflect attachment experiences as an infant. Securely attached individuals have strong relationships with others and are able to maintain these relationships (Cooper, Shaver, & Collins, 1998). This type reflects the above in which the infant has had a positive experience with a supportive caregiver. However, not all experiences are positive, which lead to the other two types suggested.

Anxious individuals, on the other hand, are concerned with being rejected in relationships though this does not hinder them from becoming involved in relationships rather quickly (Cooper, Shaver, & Collins, 1998). In essence, while there is a fear of rejection, the fear is not strong enough to continue involvement in relationships. The third type, however, does. Avoidant individuals lack social skills necessary to engage in close relationships and may avoid them as such (Cooper, Shaver, & Collins, 1998). With regard to the last two types, there has been an obvious disturbance in the attachment bond. Bowlby (1988) writes the following:

Those who have insensitive, unresponsive, neglectful, or rejecting parents are likely to develop along a deviant pathway which is in some degree incompatible with mental health and which renders them vulnerable to breakdown, should they meet with adverse events. (p. 136)

Kenny and Rice (1995) summarize by simply stating that if a secure internal working model is created, then the individual will display resilience. However, if an insecure internal working model develops, then coping mechanisms are not in place when

difficult situations arise. According to Armsden and Greenberg (1987), when attachment is lost or threatened, depression, anger, and anxiety can develop.

While attachment theory is primarily concerned with childhood experiences, it is not limited to this developmental stage. According to Bowlby (1979), “..attachment behaviour is held to characterize human beings from the cradle to the grave” (p. 129).

One study by Cooper, Shaver, and Collins (1998) examined how attachment theory could be used in relation to risk-taking behavior in adolescents. Specifically, the authors sought to determine if adolescents who were considered to have secure attachments were better adjusted psychologically than those with avoidant or anxious attachment styles.

Additionally, the authors wanted to determine if a relationship existed between the style of attachment and engagement in risk-taking behaviors (Cooper, Shaver, & Collins, 1998). Participants for the study included 2,011 predominantly black and white adolescents ages 13-19. Participants were given measures to determine attachment style, psychological symptomology, and risk-taking behaviors. Results indicated that the adolescents’ attachment styles in relation to adjustment were as expected based on theory. In addition to this finding, the authors concluded that anxious adolescents were most likely to engage in risk-taking behaviors, while secure and avoidant were both less likely to engage in these behaviors. The authors suggested that those with avoidant attachment style most likely were devoid of the social skills necessary to engage in these behaviors (Cooper, Shaver, & Collins, 1998). One limitation of this study is that participants were only asked to consider romantic relationships when responding to the questionnaire designed to measure attachment styles. Perhaps, a broader definition of relationship would elicit more information.

Finally, while research has not confirmed a relationship between attachment theory and self-injury, several authors have suggested it. MacAniff Zila and Kiselica (2001) write, “The absence of appropriate attachment and nurturing during childhood may contribute to the onset of self-mutilation” (p.49). Levenkron (1998) agrees stating the following:

Attachment is a vital part of all human relationships, commonly defined as joining or binding by personal ties. Self-mutilators suffer from severe deficits in the ability to form personal attachments – to join others – whether it’s to have fun, to talk seriously about each other, to talk personally about themselves, or to accept comfort and reassurance from another person. (p. 93)

According to Connors (1996), “Understanding the felt experience, or internal world view, of the survivor provides a ground from which we can better see the functions and meanings of self-injury” (p. 201). Thus, it appears that attachment theory may be a possible theory underlying the existence of self-injury perhaps due to a lack of support or nurturing by the caregiver. A disruption in early attachments may create a lack of security suggesting that other relationships may also fail. As a result, the individual is alone and isolated without others to comfort him/her. Comforting may then come in the form of self-injury.

Like attachment theory, another more recent theory examines the effects of the interpersonal on the intrapersonal. Relational-cultural theory is a perspective that originated from the Stone Center at Wellesley College coming out of feminist literature, object-relations theory, and self-in-relation theory. It seeks to understand individuals in the context of relationships. According to Jordan (2001), “Traditional theories of

psychological development emphasize movement toward autonomy, separation, and self-sufficiency”(p. 92). For example, Jordan (2001) writes that “In Freudian theory, relationships are secondary to the satisfaction of primary drives, and protection against the surrounding environment is more important than creating connection with one’s environment” (p. 93). In contrast to these traditional ideas, relational-cultural theory focuses on relationships. These relationships are defined as a “...set of interactions that occur over a length of time” (p. 26). Thus, relational-cultural theory moves away from the individual to look at the self-in-relationships.

Another premise of relational-cultural theory is the idea of connections and disconnections. Jordan (2001) states:

Relational-cultural theory suggests that the primary source of suffering for most people is the experience of isolation and that healing occurs in growth-fostering connection. This model is built on an understanding of people that emphasizes a primary movement toward and yearning for connection in people’s lives. (p. 95)

Connections, according to relational-cultural theory, are defined as “...an interaction between two or more people that is mutually empathic and mutually empowering” (Miller & Stiver, 1997, p. 26). In other words, when there is a lack of connection in relationships with others, problems arise. Jordan (2001) explains this by stating that “Acute disconnections occur when people fail each other empathically, do not understand, or let each other down in a myriad of ways” (p. 95). Miller and Stiver (1997) define disconnections as “...what we experience when we feel cut off from those with whom we share a relationship” (p. 11). However, Miller and Stiver (1997) report that “Just as disconnections restrict us and block psychological growth, connections – the

experience of mutual engagement and empathy – provide the original and continuing sources of that growth” (p. 3). Relational-cultural theory, according, to Spencer, Jordan, and Sazama (2004), “...asserts that psychological health and vitality are linked with participation in growth-fostering relationships with others” (p. 355). Levenkron ties connections to attachments writing that:

When a person can form attachments to others, it means that he or she is someone who is able to trust and to develop health dependencies. These kinds of connections between individuals allow us to be restored or supported when we are emotionally played out. (p. 93)

Another important concept in relational-cultural theory is the self-in-relation. Surrey (1991) writes that “...the self-in-relation involves the recognition that for women, the primary experience of self-is relational, that is, the self is organized and developed in the context of important relationships” (p. 52). Additionally, Surrey (1991) states that this self-in-relation “...involves an important shift in emphasis from separation to relationship as the basis for self-experience and development “(p.53). Thus, the theory suggests that women, in particular, develop who they are as a result of their relationships, which is similar to the premise of attachment theory. Therefore, disruptions in the formations of satisfying relationships could in turn harm the self. However, it is not the relationship itself that provides positive growth. Jean Baker Miller (1991) writes that it is not necessarily the relationship that is the problem. Instead she states, “The issue is the *nature* of the relationships” (p. 335). According to the theory, mutuality must be present. Powell, Denton, and Mattsson (1995) write:

A high level of intersubjective mutuality increases one's sense of vitality by enhancing the connection to another, increases one's desire to further connection with others, increases one's ability to take action, and increases self-esteem. (p. 266)

Jordan (1991) writes that mutuality "...can provide purpose and meaning in people's lives, while lack of mutuality can adversely affect self-esteem" (p.81). Jordan (1991) continues stating that if mutuality is not present, or is imbalanced, this can create "...significant pain" (p.90). The concept of mutuality consists of six concepts. Genero, Miller, and Surrey (1992) identify these six elements as empathy, engagement, authenticity, empowerment, zest, and diversity. Empathy refers to "The process by which one person experiences the feelings and thoughts of another and simultaneously knows her/his own different feelings and thoughts" (Genero, Miller, & Surrey, 1992, p. 2). It is the idea of walking in another's shoes. Engagement is being interested in what another is saying or feeling (Genero, Miller, & Surrey, 1992). The third element according to Genero, Miller, and Surrey (1992) is authenticity, which is "The process of coming closer to knowing and sharing one's experience with another," or being genuine (p. 2). The fourth concept, empowerment, means "To participate in an interaction in such a way that one simultaneously enhances one's own capacity to act as well as the other's" (Genero, Miller, & Surrey, 1992, p. 2). Zest is a sense of energy that comes from the connection with another (Genero, Miller, & Surrey, 1992). The final concept is diversity, which refers to "...openly expressing and receiving or 'working through' different perspectives, opinions, and feelings" (Genero, Miller, & Surrey, 1992, p. 2). In summary, the idea of

mutuality refers to not only respect for another's opinions, beliefs, and feelings in a relationship, but also sensing that in the other person.

Nakash, Williams, and Jordan (2004) examined the concepts of relational-cultural theory in relation to body image and physical health. Data from a previous study was used. Participants were 450 women at a college in the Northeast ages 17-23. Fifty-eight percent of the participants were white, 28% Asian/Pacific Islander, and 4.3% black. Participants were given the Relational Health Indices, the Femininity Ideology Scale, and a Physical Health Rating. According to the results, relational health was related to better body image and physical health (Nakash, Williams, & Jordan, 2004). However, a limitation of the study was that it was correlational in nature; therefore, a causal relationship could not be determined (Nakash, Williams, & Jordan, 2004).

Depression is a characteristic often considered in self-injury. Powell, Denton, and Mattsson (1995) studied gender, locus of control, and mutuality within the mother-child relationship on depression in teenagers. The study consisted of 213 adolescents and their mothers. Participants were assessed using the Center for Epidemiologic Studies Depression Scale, the Mutual Psychological Development Questionnaire, and the Internal Control Index. The results were congruent with the relational model of development indicating that the relationship with the mother, locus of control, and depression in the mother all influenced depression in the adolescent (Mattson, 1995). One limitation of this study was that other potential variables affecting depression in the adolescents were not examined. However, the study does show some support for the relational model and its potential affect on the well-being of adolescents.

While research in relational-cultural theory has not focused on the role of relationships and connections in self-injury, it has been suggested as a possibility. Kaplan and Klein (1990) write that suicide attempts are “a desperate wish to be heard and recognized in an increasingly distant relational world” (p. 2). With regard to self-injury, Kaplan and Klein (1990) state that while they do not believe self-injurers are intentionally seeking to fix a relationship,

...they are making a desperate attempt to translate an unbearable sense of disconnection into a concrete, identifiable pain which they then can better comprehend and control. They tend to express their interpersonal pain more in terms of relational disengagement and to avoid the active relational conflict characteristic of women who attempt suicide. (p. 3)

Although neither attachment theory nor relational-cultural theory have specific research regarding adolescents and self-injury, according to Allen, Aber, and Leadbeater (1990), theories like attachment theory and relational-cultural theory, which focus on relationships can help to illuminate the increase in risky behaviors in adolescents.

Regardless of the terms used, attachment or connection, relationships with others appear to play an important role in the psychological well-being of human beings. As a result, it is important to explore these relationships in depth particularly with the adolescent population in which the behavior begins. Three relationships appear to be related to both healthy and unhealthy behavior in adolescents: parent-adolescent, peer, and romantic/dating relationships.

Parent-Adolescent Relationship

It is not difficult to see how an adolescent's relationship with his/her parents may play a significant role in his/her well-being and ability to form relationships as this is often the first relationship formed. According to Brack, Gay, and Matheny (1993), "There is increasing interest in the effect of parental attachment upon the cognitive, affective, and behavioral development of adolescents" (p. 212). Kenny and Rice (1995) write that because parents contribute to their child's internal working model, they may be in effect, contributing to poor coping mechanisms as well. Because self-injury often involves a lack of sufficient coping resources, the parent- adolescent relationship is an area of interest. Allen, Aber, and Leadbeater (1990) consider the following:

When parental behaviors are chronically inconsistent or rejecting, the child is almost constantly in a state of uncertainty about the physical or emotional availability of the parent. As a result, he or she experiences frequent and intense anger. Over time, the child in these circumstances learns a model of a relationship in which anger and insecurity are central features. (p. 458)

For self-injurers, this sounds all too familiar as many suffer from feelings of anger and insecurity with no knowledge of how to express these feelings other than to injure the self.

Brack, Gay, and Matheny (1993) simply state that "The formation of parental attachment usually evokes positive emotional responses, and threats to it usually evoke negative ones" (p. 212). These authors sought to examine coping and attachment in adolescents. The study sampled undergraduate students in the Southeast. The sample consisted of 60 students with 80% being female and 65% being freshmen. Participants

were given The Inventory of Parent and Peer Attachment (IPPA) and The Coping Resources Inventory for Stress (CRIS). The study found that "...relationships with family and friends were highly related to perceived coping resources" (p. 214). However, the authors did note that while there was a correlation between coping resources and attachment, there was not a causal one.

Another study focused on the family structure and attachment variables in relation to social competence and psychological well-being among college freshmen (Kenny & Donaldson, 1991). Participants for the study were 226 college freshmen who were assessed using the Parental Attachment Questionnaire, Family Structure Survey, Texas Social Behavior Inventory, and the Hopkins Symptom Checklist. Results indicated that women had more positive attachments than men. Women also reported looking to their parents for emotional support. Additionally, the greater the attachment, the better the social and psychological well-being. Limitations of the study include a small male sample and a white, middle-class based theoretical approach. While the limitations should be noted, the results are important in providing some evidence for the role of the parental relationship on the psychological well-being of older adolescents. Ungar (2004) echoes this stating, "Thus, parents who withdraw from their role as guides to their children, are, according to adolescents themselves, denying youth a valuable resource to sustain their mental well-being" (p. 27).

Finally, a study by Goldstein, Davis-Kean, and Eccles (2005) examined the interaction of family and peer relationships in adolescent behavior. The study consisted of 1,357 participants who were given measures to determine SES, the parent-child relationship, and peer characteristics (p. 404). Participants were also interviewed on three

separate occasions: 7th grade, 8th grade, and 11th grade. Findings suggested a link between parental relationships and peer relationships. According to the authors, "...adolescents in the present study who reported less positive relationships with their parents in the 7th grade were likely to have adopted an extreme peer orientation in the 8th grade. These adolescents also tended to associate with peers who themselves engage in risky thinking and behaviors" (p. 409). Although this study did not look at the college population, it does suggest that poor parental relationships tend to increase the risk later for risk-taking behavior.

Research as of yet has not specifically focused on self-injury and the adolescent's relationship with his/her parents. However, Levenkron (1998) in his book *Cutting: Understanding and Overcoming Self-Mutilation* describes two types of self-mutilators. The first type is the nondissociative, which Levenkron (1998) defines as one "...who suffers from intolerable rage with which she is only capable of attacking herself" (p. 48). The nondissociative develops from "...reversal of dependence during her formative years, she can only dare to feel anger toward herself, never toward others" (p. 48). This occurs when the child "...experiences a lack of warmth and nurturance, or who is the object of her parents' cruelty..." (Levenkron, 1998, p.48). Although the research examined above did not focus on self-injury, it does suggest that the parent-adolescent relationship correlates with the adolescent's coping resources, which in turn affect psychological well-being. Additionally, when there is a lack of coping resources, the adolescent then has no choice but to turn to unhealthy ways of dealing with problems, and self-injury may be one of these ways.

Peer Relationships

While the parent-adolescent relationship is very important with regard to the development of coping resources and internal working models, it is not the only important relationship in an adolescent's life. Given the very nature of interactions during this period of development, it would only make sense that peer relationships would also be important, particularly, during the college years when adolescents are very often away from home for the first time. Stanton-Salazar and Urso Spina (2005) report that peer relationships are so vital in an adolescent's life because, "Often, the only people who knew of an adolescent's emotional burdens and stressful circumstances were friends and close peers, and when compelled to react to these circumstances, many adolescents sought help, safety, and relief from their peers" (p. 380). This may be especially important for adolescents who self-injure as internal coping strategies are often lacking. Additionally, Stanton-Salazar and Urso Spina (2005) state that "Many would also concede that peers usually provide emotional support and intimate counsel when adults are unavailable or appear indifferent" (p. 380).

Stanton-Salazar and Urso Spina (2005) write that it is vitally important to understand an adolescent's peer support. The authors write the following:

Seldom do we begin with the premise that peer relationships represent a vital segment of an adolescent social support system and that friendships with peers embody the potential to nurture healthy development and academic achievement in ways that adults would find hard to duplicate. (p. 380)

Several studies have examined the role of an adolescent's peer network on psychological well-being. One such study by Hay and Ashman (2003) considered gender in addition to parent and peer relationships as an influence on emotional stability. The

study used participants from a previous study by Hay et al. (2000), which consisted of 655 adolescents. Participants were given The Self-Description Questionnaire to measure self-concept and academic abilities. The researchers found that while emotional stability in males was linked to parent relationships, this was not the case for females.

Additionally, the researchers found that peer relationships were overall more important than parental relationships with regard to emotional stability. One limitation of the study is that it focused on the parental unit as opposed to looking at differences in the relationships with the mother and father separately. However, the results still indicate the power of the peer relationship in the emotional stability of adolescents.

Another study sought to examine the differences in adolescents who reported high and low relationships with their parents and peers. Field, Diego, and Sanders (2002) obtained a sample of 89 high school students. The majority (69%) of the students' parents were still together. Participants were given a questionnaire to measure various aspects of their lives. Results indicated that those students who reported strong, peer relationships also had close family relationships and more friends. Additionally, those in the high group with good peer relationships reported "... (1) greater well-being and (2) lower depression" (Field, Diego, & Sanders, 2002, p.125). One limitation of this study might be the high percentage of adolescents whose parents are still together, which may not be generalizable to the population overall. Regardless, the study shows again that peers play a role in the general well-being of adolescents. This study specifically had lower depression as a reported outcome, which is significant in the study of self-injury given that depression is often a characteristic.

Finally, a study by Stanton-Salazar and Urso Spina (2005) describes the benefits of peer relationships in adolescence. These authors believe that “The principle of symmetrical reciprocity, or reciprocal exchange, the traditional basis of adult friendship, also comes to govern many adolescent friendships” (p. 385). The authors also state that “The principle of mutual trust also assumes a key role in adolescent friendships – specifically, the expectation that friends will not sabotage other vital ties in the peer network” (p. 386). The study also examined race, gender, and socioeconomic status in relationship to the social lives of adolescents. The authors collected three different sets of data from three sample groups obtained in 1991-1992. Seventy-five participants were used for a network survey, 51 were used for an interview, and 1,187 were given a questionnaire. Of those who participated in the study, the majority were Latino and from working-class families. The authors concluded that peer relationships in this context appear to provide support against the stressors faced in the adolescents’ lives such as poverty and violence. Additionally, the peer relationships provided a coping strategy for the adolescent. While the study primarily focused on the Latino population, the results may be important cross-culturally; however, more investigation is needed to determine this. Despite this, the results indicate that peers provide more than just a social outlet for adolescents; they provide strength and comfort when life becomes too stressful.

While these studies suggest the positive benefits of peer relationships, this is not always the case. Much like the parental relationship, when it is good, it is beneficial, but when it is bad, it can be detrimental. Goldstein, Davis-Kean, and Eccles (2005) write:

For many youths, family and peer environments work together to promote positive social and psychological development. For others, these same contexts may put youth at risk for delinquent and health-threatening behaviors. (p. 401)

These less positive relationships can create a situation where the adolescent feels isolated and alone, both of which are risk factors for self-injury. While research has not specifically focused on peer relationships and self-injury, it appears that the lack of such relationships may be a contributing, risk factor for self-injury. Like parent-adolescent relationships, peer relationships provide support during stressful times, and when that relationship is strained or absent, the adolescent may again have no choice but to take other avenues to find comfort.

Romantic/Dating Relationship

Another type of relationship that may be of significance in adolescence is the romantic/dating relationship, which may be of particular importance to older adolescents. According to Overbeek, Vollebergh, Engels, and Meeus (2003), “Moreover, romantic involvements provide the context in which issues of sexuality and intimacy are addressed, of central concern to the development of adolescent identity” (p. 29). Given the importance of romantic relationships on the development of adolescents, it would make sense that research would be extensive in this area; however, it is not. Some authors have speculated on the role that romantic relationships might play in adolescents’ lives. La Greca and Harrison (2005) write, “Although little research has examined this issue, a positive, romantic relationship during adolescence might provide an important source of support and contribute in positive ways to adolescents’ mental health” (p. 51). However, like relationships with parents and peers, the opposite might also be true. La Greca and

Harrison (2005) state, “In contrast, negative experiences could contribute to internal distress” (p. 51). Though little research exists in this the area of romantic relationships and adolescent well-being, a few studies have attempted to further explore the topic.

Overbeek, Vollebergh, Engels, and Meeus (2003) examined the relationship between attachment to the parents and emotional disturbance. Additionally, the study sought to determine if this was also related to the romantic relationships of adolescents. Finally, the study considered the quality and duration of the romantic relationship to emotional disturbance (Overbeek, Vollebergh, Engels, & Meeus, 2003). Participants for the study included 568 adolescents ages 15-19. Data was both cross-sectionally and longitudinally obtained. Longitudinal data was examined for a three year period. Participants were given measures of parental attachment, psychological stress and depressive mood, dissatisfaction with life, social support of partner, commitment to partner, and duration of romantic relationship. Results indicated that positive parental care was negatively associated with emotional disturbance. Adolescents who were in a romantic relationship showed weaker associations between parental attachment and emotional disturbance. However, romantic relationship quality and duration were not linked to emotional disturbance. One limitation of the study, according to the authors, is that a global measure of relationship satisfaction was not used, which may have provided different findings (Overbeek, Vollebergh, Engels, & Meeus, 2003).

Another study focused on two specific forms of emotional disturbance and romantic relationships. La Greca and Harrison (2005) examined aspects of peer relationships and romantic relationships in association with social anxiety and depression. Participants for the study were 421 adolescents ages 14-19. Of the sample, 67% were

Hispanic. Participants were given the Peer Crowd Questionnaire, the Revised Peer Experiences Questionnaire, the Network of Relationships – Revised, the Social Anxiety Scale for Adolescents, and the Beck Depression Inventory. Results indicated that adolescents who were not in a romantic relationship expressed more social anxiety than those with a partner (La Greca & Harrison, 2005). With regard to depression, negative qualities in the relationship predicted depression (La Greca & Harrison, 2005). The authors consider one limitation of the study to be that information was only gathered once, as opposed to longitudinally (La Greca & Harrison, 2005). Nevertheless, the results are important in that problems in an adolescent's romantic relationship can contribute to an adolescent's emotional well-being. Since anxiety and depression are both characteristics associated with self-injury, this study could provide a basis for future research in this area.

A final study was created to examine the possible roles of attachment issues and self-in-relation problems in adolescent romantic relationships. Harper, Dickson, and Welsh (2006) discuss the role of self-silencing and rejection sensitivity in these relationships. According to Harper, Dickson, and Welsh (2006), rejection sensitivity comes from attachment theory and suggests that if the individual has been rejected by caregivers, he/she will be looking for that rejection in other relationships. The authors write, "In the context of a romantic relationship, those who are sensitive to possible rejection by their romantic partner may engage in certain strategic responses in an attempt to maintain a relationship they perceive as fragile" (Harper, Dickson, & Welsh, 2006, p. 460). Self-silencing refers to "...individuals who suppress their personal voice and opinions in order to maintain intimate relationships" (Harper, Dickson, & Welsh,

2006, p. 460). The authors explored an association between the concept of rejection sensitivity and depression. Additionally, the authors posited that “Individuals who possess anxious or angry expectations of rejection are likely to engage in behaviors in the context of their romantic relationships aimed at avoiding rejection and preserving the relationship at all costs” (Harper, Dickson, & Welsh, 2006, p. 460). Participants for the study were 211 adolescents and their partners ages 15-21. Of these participants, 90% were white. Participants were given the Center for Epidemiologic Studies Depression Scale, Rejection Sensitivity Questionnaire, and Silencing the Self Subscale. Results indicated that an association does exist among the variables rejection sensitivity, silencing the self, and depression. According to Harper, Dickson, and Welsh (2006), “There was a significant positive association between rejection sensitivity and reports of depressive symptoms, such that adolescents who were more sensitive to rejection reported higher levels of depressive symptomatology compared to adolescents who were less sensitive to rejection” (p. 463). Adolescents who were afraid of rejection also silenced themselves more in their romantic relationships (Harper, Dickson, & Welsh, 2006). One limitation is, according to Harper, Dickson, and Welsh (2006), that the study rested on self report. Despite this limitation, the study shows that early attachments and views of the self-in-relation do have an affect both on romantic relationships, and in turn, on depression. This is important to note with self-injury as depressive symptoms are often associated with the behavior.

While little or no research exists examining the role of romantic relationships in self-injury, these studies provide the groundwork for such research. Like the other relationships mentioned, romantic/dating relationships provide a support that allows the

individual to release feelings in a healthy manner. However, when that relationship is problematic or broken, the individual again has only the self to turn to in times of crisis.

In summary, self-injury is a growing problem among adolescents. It involves the intentional destruction of the body through methods such as cutting, burning, binge drinking, and sexual promiscuity without the desire to commit suicide. While there are many types of self-injury, overt self-injury and indirect self-injury will be explored for the purposes of this study. Researchers have linked self-injury to neurobiological causes, abuse and trauma, and self-objectification/eating disorders. While researchers have focused on the intrapersonal aspects of self-injury, little to no research has been used to examine the interpersonal. Both attachment theory and relational-cultural theory consider the importance of connections with others in the development of human beings. Both theories posit that a lack of such connections can lead to psychological disturbances as well as a lack of coping mechanisms. This lack of coping resources and support from others could potentially create an environment conducive to self-injury. For adolescents, three particular relationships appear to be of importance: parent-adolescent, peer, and romantic/dating relationships. While researchers have not examined these relationships in relation to self-injury, it does appear that these relationships provide the support and coping resources that self-injurers often lack. An exploration of these relationships is needed for mental health professionals to provide the best level of care for adolescents who self-injure as well as to provide insight into another potential cause of the behavior.

APPENDIX B: Definition of Terms

Definition of Terms

1. Alienation: Refers to feelings of insecurity or detachment from the attachment figure (Armsden & Greenberg, 1987).
2. Attachment: A sense of trust that another individual (i.e. parent, peer, partner) will be available and responsive during periods of stress (Kenny & Rice, 1995).
3. Authenticity: The ability to be oneself in a relationship and feeling understood by another in that relationship (Genero, Baker Miller, & Surrey, 1992).
4. Communication: Refers to the responsiveness and helpfulness of the attachment figure whether it be a parent or peer (Armsden & Greenberg, 1987).
5. Connections: A relationship that includes mutuality and empathy by both parties.
6. Disconnections: Interactions in which empathy and mutuality are lacking.
7. Empathy: Experiencing how another feels while being aware of own feelings (Genero, Baker Miller, & Surrey, 1992).
8. Empowerment: Enhancing the ability to act oneself, and in turn influence the same in another person (Genero, Baker Miller, & Surrey, 1992).
9. Engagement: Interest in the communications of another person (Genero, Baker Miller, & Surrey, 1992).

10. Mutuality: Being open, available, and responsive in a relationship, while experiencing the same expressions from the other person (Jordan, 1991).
11. Parent-Adolescent Relationship: A relationship in which the adolescent perceives the mother or father to be either responsive to his/her needs, or unresponsive to his/her needs (Kenny & Rice, 1995). This will be examined through the concepts of trust, communication, and alienation in the Inventory of Parent and Peer Attachment.
12. Peer Relationship: A relationship with an individual of close age that is perceived as able to support the adolescent's ability to handle difficult situations and promote growth (Armsden & Greenberg, 1987). This will be evaluated through the concepts of trust, communication, and alienation in the Inventory of Parent and Peer Attachment.
13. Relational-Cultural Model: A theory of psychology that stresses the importance of growth-fostering relationships on the psychological well-being of individuals (Jordan, 2001).
14. Romantic/Dating Relationship: A close, romantic relationship, in which the individual feels a sense of mutuality as measured by empathy, engagement, authenticity, empowerment, zest, and diversity (Genero, Baker Miller, & Surrey, 1992). This will be measured through the concept of mutuality.
15. Self-Injury: The intentional harm to one's body that is not suicidal, but does involve damage to the body (Favazza, 1996).

- a. Overt Self-Injury: Intentional self-injury such as burning, cutting, erasing, and gouging (Connors, 1996).
- b. Body Alterations: Culturally acceptable methods of altering the body such as plastic surgery, tattooing, and piercing (Connors, 1996).
- c. Indirect Self-Injury: Behaviors that are not intended to harm the body, but do by their nature such as binge drinking (Connors, 1996).
- d. Failure to Care for Self: Behaviors in which the individual fails to take care of the body such as not seeking medical assistance when ill (Connors, 1996).

16. Trust: The accessibility of an attachment figure, which provides the individual with a sense of security (Armsden & Greenberg, 1987).

17. Zest: The energy that results from a connection (Genero, Baker Miller, & Surrey, 1992).

APPENDIX C: Research Questions, Hypotheses, and Assumptions

Research Questions

1. Do peer attachments (trust, communication, and alienation) significantly predict the frequency of overt self-injury among college students?
2. Do peer attachments (trust, communication, and alienation) significantly predict the frequency of indirect self-injury among college students?
3. Do parent-adolescent, peer, and romantic/dating relationships significantly predict the frequency of overt self-injury among college students?
4. Do parent-adolescent, peer, and romantic/dating relationships significantly predict the frequency of indirect self-injury among college students?

Research Hypotheses

The following null hypotheses will be tested in this dissertation study:

- 1) There will be no statistically significant relationships between and among parent-adolescent relationships, peer relationships, romantic dating relationships, and self-injurious behaviors in adolescents.
- 2) Parent-adolescent attachments will not significantly predict the frequency of overt self-injury among college students.
- 3) Parent-adolescent attachments will not significantly predict the frequency of indirect self-injury among college students.
- 4) Peer attachments will not significantly predict the frequency of overt self-injury among college students.
- 5) Peer attachments will not significantly predict the frequency of indirect self-injury among college students.

- 6) Parent-adolescent, peer, and romantic/dating relationships will not significantly predict the frequency of overt self-injury among college students.
- 7) Parent-adolescent, peer, and romantic/dating relationships will not significantly predict the frequency of indirect self-injury among college students.

Assumptions

1. Participants will respond in an honest and open manner to the assessments given.
2. Participants will have equal motivation to participate in the assessments.
3. The measures used in this study will accurately depict the frequency of overt and indirect self-injury as well as the attachments associated with parent-adolescent relationships and peer relationships, as well as mutuality in romantic/dating relationships.

APPENDIX D: Informed Consent

Informed Consent Form

You are invited to participate in a study exploring your relationships with your parents/parental figures, your friends, and your dating partners/spouses as well as the extent to which you engage in behaviors that may or may not affect your body. Participation in this study involves the completion of three questionnaires and a demographic form, which should take approximately 30-45 minutes to complete.

The potential benefit of participating in this study is an increased awareness of your relationships with significant people in your life and the choices/decisions you make that may or may not affect your body. There are no foreseeable risks in participating in this study; however, because of the sensitive nature of some of the questions, a resource list of counseling services will be provided online upon completion of the questionnaires.

Participation in this study is completely voluntary. If you choose to participate, please complete the questionnaires in this study. There is no penalty for not participating and you have the right to withdraw your consent and participation at any time. Participants will earn extra course credit for their participation. Most introductory and lower-level psychology and other courses offer students a small amount of course credit (usually less than 5% of their grade) for participation in the research process. In psychology courses, students are required to earn two “units” of research experience. This requirement may be fulfilled in one of three ways: 1) serving as a human participant in one or two current research project (s), 2) attending two Undergraduate Research Colloquia, or 3) researching and writing two 3-4 page papers on two designated research topics. Each hour of participation in a research project as a participant is generally regarded as satisfying one “unit” of the requirement, and students participating in this study will earn one hour (or unit) of credit. If you choose not to participate in this study, you may choose to participate in another study or one of the above alternatives. You will receive credit for your participation upon completion of the questionnaires. Once you have completed the questionnaires, you will be directed to a page with counseling resources. After you have read this page, you will click on “Submit,” and will then be directed to a separate page where you will type your name, which will then be submitted to the Experimetrix program for your one hour of credit.

All information collected in this study is strictly confidential. No individual participants will be identified. Your instructor will not know your individual responses to the questionnaires. However, we will indicate that you have participated in this study by assigning you one research credit in the Experimetrix database. The records of this study will be kept private. Any written results will discuss group findings and will not include information that will identify you. Research records will be stored securely and only researchers and individuals responsible for research oversight will have access to the records. Your participation in this study is greatly appreciated. If you have any questions concerning this study, please feel free to contact Alicia Irvin, M.S. (918) 816-7597 or Carrie Winterowd, Ph.D. (405) 744-9446. If you have questions about your rights as a research volunteer, you may contact Dr. Sue C. Jacobs, IRB Chair, 219 Cordell North, Stillwater, OK 74078, (405) 744-1676 or irb@okstate.edu. If you agree to participate,

please click on the “Accept” button. If you do not wish to participate, please click the “Decline” button. By clicking the “Accept” button, this will serve as your electronic signature for participation in this study.

[Accept](#)

[Decline](#)

APPENDIX E: Script

Script for Experimentrix

You are invited to participate in a study exploring your relationships with your parents/parental figures, your friends, and your dating partners/spouses as well as the extent to which you engage in behaviors that may or may not affect your body. Participation in this study involves the completion of three questionnaires and a demographic form, which should take approximately 30-45 minutes to complete.

The potential benefit of participating in this study is an increased awareness of your relationships with significant people in your life and the choices/decisions you make that may or may not affect your body. There are no foreseeable risks in participating in this study; however, because of the sensitive nature of some of the questions, a resource list of counseling services will be provided online upon completion of the questionnaires.

APPENDIX F: Demographics Sheet

Demographic Information

Please mark the answers that best describe you.

1. Age: _____

2. Sex: _____

3. Race (Mark all that apply):

African-American/Black _____

Hispanic/Latino(a) _____

American Indian/Native American _____

White, Non-Hispanic _____

Asian/Asian American _____

Other _____

4. Sexual Orientation:

Heterosexual _____

Gay/Lesbian _____

Bisexual _____

5. Year in College:

Freshman _____

Sophomore _____

Junior _____

Senior _____

6. Family Income:

Less than 10,000 _____

50,001 to 60,000 _____

10,001 to 15,000 _____

60,001 to 70,000 _____

15,001 to 20,000 _____

70,001 to 80,000 _____

20,001 to 30,000 _____

80,001 to 90,000 _____

30,001 to 40,000 _____

90,001 or above _____

40,001 to 50,000 _____

APPENDIX G: Resource List

Resource List

We thank you for completing questionnaires for this study. We are very interested in relationships to significant people and how relationships impact our choices/decisions to engage in certain behaviors. Sometimes, when people participate in research studies, they may become aware of their own feelings and experiences that they may wish to discuss with others, including counseling professionals. We have provided you with a list of resources in case you become aware of your interest in seeking help to cope with your thoughts and feelings about yourself. Please feel free to talk with counselors at one of these community resource agencies for assistance. You may also wish to contact the primary researcher of this study, Alicia Irvin, M.S. (405) or Dr. Carrie Winterowd, 434 Willard Hall, Oklahoma State University, Stillwater, Oklahoma, 74078 at (405) 744-9446. We appreciate your participation in this study.

Counseling Psychology Clinic

408 Willard Hall

Oklahoma State University

Stillwater, OK 74078

(405) 744-6980

University Counseling Services

316 Student Union

(405) 744-5472

002 Student Health

(405) 744-7007

Reading and Math Center (counseling services are available here)

102 Willard Hall

Oklahoma State University

Stillwater, OK 74078

(405) 744-7119

APPENDIX H: Institutional Review Board

Oklahoma State University Institutional Review Board

Date: Monday, April 16, 2007

IRB Application No ED0737

Proposal Title: The Association of Parental and Peer Attachments and Romantic Connections with Self-Injurious Behavior Among College Students

Reviewed and Expedited
Processed as:

Status Recommended by Reviewer(s): Approved Protocol Expires: 4/1/2008

Principal
Investigator(s)

Alicia Irvin
3003 E 4th Ave. #11
Stillwater, OK 74074

Carrie Winterowd
434 Willard
Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

- ☒ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 219 Cordell North (phone: 405-744-5700, beth.mcternan@okstate.edu).

Sincerely,



Sue C. Jacobs, Chair
Institutional Review Board

VITA

Alicia Ann Irvin

Candidate for the Degree of

Doctor of Philosophy

Dissertation: THE RELATIONSHIP OF PARENTAL AND PEER
ATTACHMENTS AND ROMANTIC CONNECTIONS
WITH SELF-INJURIOUS BEHAVIORS AMONG
COLLEGE STUDENTS

Major Field: Educational Psychology

Biographical:

Personal Data:

Born in Muskogee, OK on November 26, 1978 to
LeAnn Pilgrim and Tony Irvin.

Education: Graduated from Checotah High School in Checotah, OK
in May 1997; received Bachelor of Arts in English from
Northeastern State University, Tahlequah, OK, in May 2001;
received Master of Science in Counseling Psychology from
Northeastern State University in December 2003. Completed
degree requirements for the Doctor of Philosophy degree with
a major in Educational Psychology in July 2008.

Experience: Employed by Haskell Public Schools as a high school
and middle school teacher for two years; employed by Payne
County Youth Services as a counselor for 2 ½ years (2004-
2007); employed by Payne County Drug Court for 1 year (2005-
2006); employed by Office of Juvenile Affairs (2006-2007);
employed by Oklahoma State University as a graduate assistant
(2005-2007); employed by Family Service & Guidance Center
(2007-Present); adjunct faculty for Washburn University (2008-
Present).

Professional Memberships: American Psychological Association
Graduate Student Divisions; American Counseling Association
Student Affiliate.

Name: Alicia Irvin

Date of Degree: July, 2008

Institution: Oklahoma State University

Location: Stillwater, Oklahoma

Title of Study: THE RELATIONSHIP OF PARENTAL AND PEER ATTACHMENTS
AND ROMANTIC CONNECTIONS WITH SELF-INJURIOUS
BEHAVIORS AMONG COLLEGE STUDENTS

Pages in Study: 115

Candidate for the Degree of Doctor of Philosophy

Major Field: Educational Psychology

Scope and Method of Study: The purpose of this study was to explore the relationships between and among parent-adolescent attachments (trust, communication, alienation), peer attachments (trust, communication, alienation), and mutuality in romantic/dating connections with overt and indirect self-injury. Participants for the study included 494 undergraduate students at a southwestern university who completed a packet of questionnaires that included: the Self-Injury Questionnaire, the Inventory of Parent and Peer Attachment, and the Mutual Psychological Development Questionnaire.

Findings and Conclusions: Results indicated that trust and communication in college students' relationships with their mothers, fathers, and peers was significantly and negatively correlated with the frequency of both overt and indirect self-injury. Alienation in these relationships was positively correlated. Mutuality was also negatively correlated with both overt and indirect self-injury. Attachments to parents and peers as well as mutuality in the romantic/dating relationship were significant predictors of overt and indirect self-injury; however, when variables were blocked using hierarchical regressions, father and peer were significant predictors of overt self-injury while peer attachments and mutuality in the romantic/dating relationship were significant predictors of indirect self-injury.

ADVISOR'S APPROVAL: Carrie Winterowd
