

LATE ADOLESCENTS' PARENTAL, PEER, AND ROMANTIC ATTACHMENTS AS  
THEY RELATE TO AFFECT REGULATION AND RISKY BEHAVIORS

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The current study examined the relationships among attachment styles to parent, peer, and romantic partner, ability to regulate emotion, as well as engagement in sexual behaviors and substance use. Attachment theory and previous research suggests that an individual learns how to manage emotions through the modeling of appropriate techniques and a stable sense of self-worth. These two aspects develop through a secure attachment bond with an important figure. When an individual does not have a secure attachment bond in which to practice adaptive affect regulation strategies, he/she may attempt to manage emotions through external means, such as sexual behaviors or substance use. Overall, results supported these associations, with some notable exceptions. Across attachment sources a secure attachment style was related to lower levels of psychological distress and less engagement in substance use. In contrast to the findings from earlier studies, affect regulation did not mediate the relationship between attachment and substance use, and engagement in sexual behaviors was not significantly related to either attachment style or affect regulation.

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## CHAPTER 1

### INTRODUCTION

Attachment is often defined as the process through which people develop emotional bonds with others (Newman & Newman, 2006). Infants begin to establish an attachment to their primary caregiver, usually the mother, shortly after birth (Bretherton, 1992). Parental attachment is established through various interactions between the primary caregiver and the infant. In an ideal situation, a parent is sensitive and attentive to the child's needs and distress signals. By the parent consistently taking care of the child and comforting him/her in times of distress, the infant begins to learn that people in his/her world are dependable and caring. As the child grows, this continued sensitivity and responsiveness by the primary caregiver establishes a secure base from which the child can explore his/her environment. The child learns that he/she will be supported and taken care of regardless of the situation.

Research has focused on a variety of areas related to attachment; for example, early work by Ainsworth, Blehar, Waters, and Wall (1978) and Bowlby (1969/1982) primarily looked at the various types of attachment a child can form with his/her important attachment figure. Later work attempted to discover how these varying forms of attachment were related to later functioning, such as romantic relationships, social adaptability, and even cognitive skills (e.g. Hazan & Shaver, 1987). Research thus far has consistently shown the negative effects of maternal deprivation on institutionalized children's psychological health (see Rutter, 1979 for a review). Not only do these children experience direct negative effects of inadequate parenting, but



these children are also more vulnerable to later adverse experiences than are those who were parented by consistent and sensitive caregivers. Individuals without a secure attachment are at an increased chance of coming into contact with adverse situations. Therefore, an insecurely attached individual is not only at an increased risk of being placed in less than ideal circumstances, but he/she is also more likely to have adverse effects from these negative situations (Bowlby, 1988). This finding alone highlights the need for further research to be done in this area, especially examining the role of attachment in late adolescence/early adulthood when the possibility of engaging in adverse activities or risky behaviors (e.g. alcohol use, illicit drug use, sexual activity) is higher.

Researchers (e.g., Hazan & Shaver, 1987; Feeney, 1995) have begun examining different types of attachment beyond the primary mother-child attachment formation. Researchers have shown that, while people first attach to important caregiving objects in infancy, the process of attachment is life-long. Not only do children also form attachments to their fathers, but later in life, generally during adolescence, additional attachments are formed with close friends and romantic partners. In addition, these attachments have an impact on a person's psychological well-being and emotional functioning.

### Attachment

Attachment first came into focus with the assertion by Bowlby in 1959 that infants' behavior and instinctual responses towards the mother served the primary function of fostering attachment to this important figure rather than the widely held

psychoanalytic view that these actions were motivated by need satisfaction (Bretherton, 1992). During the years since this assertion, other researchers have conducted studies that further support the attachment theory, such as Harlow and Zimmerman's (1959) work with rhesus monkeys in which infants could choose between a wire frame "mother" who provided food or a soft, furry "mother" who did not provide any nourishment. The results from this study showed these rhesus monkey infants had a significant preference for the soft "mother" even though it did not provide food. These results directly contradicted the analysts' claim that any attachment between a mother and her infant was of a secondary nature to the primary goal of need satisfaction. This behavior, later labeled as "attachment behavior," is defined as any form of behavior that helps a person get close to or remain close to a significant individual who has been identified as being better able to cope with the world and related stressors (Bowlby, 1988). Attachment came to be viewed as a fundamental form of behavior separate from other behaviors and drives that had previously been given so much credence, such as the innate drive of eating or drinking.

Attachment theory as first formulated by Bowlby (1969/1982; 1988) asserts infants not only have a clear preference for certain caregivers, but infants also develop an internal representation of this principle caregiver. This representation allows the individual to believe the caregiver exists even when she is not in sight and comes with a set of expectations of what happens when she is in trouble or needs

support. This is the beginning of the internal working models of attachment, to be described in greater detail later (Ainsworth, 1989).

An important distinction needs to be drawn between attachment and attachment behavior. Attachment theory, as defined by Bowlby, encompasses three main points (Bowlby, 1988; Mikulincer & Florian, 2004). First, infants are born with an innate set of behaviors aimed at seeking and maintaining proximity to important individuals, with the main goal of protection and survival. These behaviors are called attachment behaviors. Second, the infant's ability to maintain this proximity depends on the availability of caregivers and their responsiveness in times of need. Finally, how an infant experiences his/her caregivers in such aspects as responsiveness, consistency, and availability will become internalized into a working model of how one views the world, the self, and how he/she will anticipate interactions in new relationships. The resulting internalized model of how others respond to a child's needs, distress, etc., is known as his attachment, or attachment style. The shift in thinking, viewing attachment as a primary need with its own set of behaviors, drives, etc., represented a significant change in how psychologists viewed human development (Bowlby, 1988).

Mary Ainsworth was actually the first researcher to witness different attachment styles while on a trip to Africa (Ainsworth, 1989; Bowlby, 1988). Her observations in Africa led Ainsworth to continue studying various forms of attachment, focusing on what types of interaction between a child and caregiver led to the adoption of different attachment styles. In the classic research study, Ainsworth et

al. (1978) constructed what is now known as the Strange Situation. In this experiment, a child is first brought into a room with his/her mother. The child is placed on the floor a distance from the toys, and the mother does not initiate interactions with the child, but appropriately responds to requests from the child to interact. After a few minutes, a stranger enters the room and sits down next to the mother, but does not talk to her for a period of time. After this time period has ended (1 minute) the stranger engages the mother in conversation. Then, the stranger attempts to engage the child in play while sitting on the floor with the child. After a brief period of time (1 minute) the mother leaves the room “unobtrusively.” The stranger then moves back to sit in his/her original chair and no longer attempts to initiate interactions with the child, but does respond to the child’s social bids. Also, the stranger will attempt to comfort the child should he/she become distressed. The mother is gone for a period of 3 minutes and then returns to the room as the stranger leaves. If the child is distressed by the recent events, the mother makes attempts to comfort the child and reengage the child in play. If the child is not distressed, the mother sits down on her original chair and assumes a responsive but noninitiating stance. At the end of this episode (3 minutes), the mother leaves the room again, this time leaving the child alone. The stranger then reenters the room after a 3-minute duration and comforts the child if needed. Once the child is comforted, the stranger again assumes the responsive but noninitiative role. Finally, the mother returns to the room and again comforts the child or does not react if the child seems non-distressed. During this entire sequence, which is approximately 20 minutes in length, trained

observers are recording behaviors exhibited by the child and the mother in an attempt to classify the child into one of three identified attachment styles.

From their observations of participants' behaviors in the strange situation paradigm, Ainsworth et al. (1978) identified differing attachment patterns/behaviors grouped into three separate and distinct attachment classifications: secure, avoidant, and anxious-ambivalent. Children classified as securely attached felt comfortable to explore their environment and interact with other individuals when their mother was present because they were confident that the parent would be responsive, available, and helpful if they should get into trouble or need assistance. This confidence expressed by the child was a result of the important attachment figure, often the mother, being responsive to the child's needs, appropriately responding to the child, and being consistent. In the strange situation, the child explored the environment while the mother was in the room and possibly became distressed when left. However, the securely attached child was happy to see the mother upon her return and sought interactions with her.

Children who were classified as avoidant had little or no confidence their attachment figure would be available when needed. In fact, children classified with this attachment style expected to be rejected by their important figure during times of need. Therefore, the child may have developed the idea that the attachment figure could not be depended upon and repeated attempts at securing protection were emotionally painful for the child. The child then attempted to live his/her life without depending on any attachment figures. In the strange situation, this child was less

distressed when left alone than either secure or anxious-ambivalent babies, and these children tended to avoid their mother when she returned to the room as opposed to seeking out safety and comfort due to past experiences of being rejected.

Children classified as anxious-ambivalent were uncertain whether or not their important attachment figures would be responsive and comforting when needed. This uncertainty tends to be quite anxiety provoking to the child and may have led to him/her being reluctant to explore the environment due to the child not knowing how the caregiver will respond if trouble arises. The child may cling to the attachment figure in fear the caregiver will go away, and he/she may respond in an overly distressing manner when separated (similar to separation anxiety). In the strange situation, these children were hesitant to explore the environment and were noticeably disturbed when their mother left the room. Upon the mother's return, the child wanted to be close to the caregiver, but also appeared angry with the mother for having been left by her and was, therefore, difficult to comfort.

There are some children whose behaviors do not fit into any of the three categories previously explained. These children are classified as disorganized because they did not seem to respond in a consistent manner to being left by their mother. However, from studies conducted by Ainsworth et al. (1978) and others (notably Main & Weston, 1981), this "type" appeared infrequently and was often the result of the child being physically abused or severely neglected. Given the relative infrequency of this attachment style in children and the lack of cohesive behaviors within this group, researchers generally do not include this attachment category in

studies (Bowlby, 1988). The majority of past research that has examined attachment styles found similar results to that of Ainsworth et al. (1978), even when examining adult attachment styles (e.g., Bowlby 1988; Collins & Read, 1990; Cooper, Shaver, & Collins, 1998; Hazan & Shaver, 1987; Main & Weston, 1981).

While researchers in the field generally accept the three styles of secure, avoidant, and anxious-ambivalent for attachments in childhood, there has been speculation that a four-category model may better capture adult attachment styles. In a study by Bartholomew and Horowitz (1991), researchers attempted to validate this four category model among young adults. The four categories proposed by Bartholomew and Horowitz were conceptualized by combining a model of the self (viewing the self as positive/worthy of love or negative/not worthy) and a model of the other (viewing other people as positive/trustworthy and available or negative/unreliable and rejecting). Using this model of adult attachment, the researchers hypothesized four distinct attachment styles: secure, or believing the self to be worthy of love and viewing others as accepting and responsive; preoccupied, or believing the self to be unworthy of love while holding a positive view of others; fearful-avoidant, or viewing the self as unworthy of love and believing others to be rejecting; and dismissive-avoidant, or viewing the self as worthy of love but believing others are unreliable and rejecting. The researchers utilized the adult attachment interview which is a semi-structured interview that asks participants to describe their friendships, romantic relationships, and feelings about the importance of close relationships. The responses were then scored according to a system developed

specifically for the study. In addition, participants were asked to submit the name of a close friend, and collateral data was obtained regarding the length and nature of the friendship. Finally, the participants were administered measures evaluating areas such as self-esteem, self-acceptance, and interpersonal problems.

Results indicated the secure group (47%) was rated as high on warmth, high on balance of control in the friendship, and high on the level of involvement in a romantic relationship. The dismissive-avoidant group (18%) scored high on self-confidence and scored lower than the secure and preoccupied groups on all scales reflecting closeness in personal relationships. The preoccupied group (14%) was opposite of the dismissing group in nearly every aspect evaluated, scoring high on such scales as self-disclosure, emotional expressiveness, reliance on others, and using others as a secure base. They also scored high on level of romantic involvement and low on balance of control in friendships. Finally, the fearful-avoidant group (21%) scored lower than the secure and preoccupied groups on self-disclosure, level of romantic involvement, reliance on others, and using others as a secure base.

Participants in this attachment group were also low on self-confidence and balance of control in personal relationships. In summary, results from the study indicated the use of a semi-structured interview can differentiate between four distinct categories of attachment. However, despite the findings from this study, researchers generally still utilize the three-category model of attachment styles, and the three-category model was used for the current study.



Attachment between parents and children continues after infancy (Ainsworth, 1989). The attachment style established during infancy continues to be recapitulated in interactions between the child and the important attachment figure, further confirming the child's internal working model of attachment. Later relationships the child forms will be shaped in ways consistent with the internal working model the child has developed. These later relationships, if they are between close friends or of a romantic nature, will likely mirror attachment characteristics present in the parent-child relationship, although these later relationships and attachments may not be as long lasting as the original attachment relationship between parent and child (Ainsworth).

In addition to the attachment a child has with his important attachment figures, he develops similar bonds with other important figures during the life span, such as close friendships or romantic relationships (Ainsworth, 1989). Researchers have posited that adult romantic love is a manifestation of the attachment system and noted similarities between attachment in childhood and attachment in adulthood. For example, romantic partners also seek one another for comfort and support and tend to feel more secure to explore new environments when the significant other is available (Hazan & Shaver, 1987, 1994; Simpson, Rholes, & Nelligan, 1992).

Hazan and Shaver (1987) conducted a study with young adults in an attempt to provide support for the use of the three-category attachment model of childhood with adult romantic relationships. Results showed the numerical breakdown of three attachment styles were similar in adulthood as it is in childhood, with 56% of the

participants classifying themselves as secure, 24% classifying themselves as avoidant, and 20% classifying themselves as anxious-ambivalent. Campos, Barrett, Lamb, Goldsmith, and Stenberg (1983) estimated that the attachment styles in infancy were as follows: 62% secure, 23% avoidant, and 15% anxious-ambivalent. In addition, Hazan and Shaver (1987) found participants' views of romantic love fell into one of the three attachment style categories, and a participant's internal working model of attachment was significantly related to the type of attachment style. Thus, the attachment style individuals develop during infancy was the same attachment style that categorized their romantic relationship. Taken together, these results indicated that, not only do people continue to form attachments to significant figures throughout life, but that the type of attachment formed is significantly related to the person's internal working model of attachment, a feature established during early childhood as a result of interactions between the infant and his/her primary caregiver.

Some researchers (Hazan & Shaver, 1994; Hazan & Zeifman, 1994) have hypothesized the three main attachment characteristics (engaging in behaviors that promote or maintain a physical closeness to the important attachment figure, utilizing the significant other as a point of safety, and using the other as a secure base) are actually transferred from the parent-child relationship to the romantic or peer relationship. In one study, Hazan and Zeifman found the attachment characteristic of proximity seeking was transferred from parents to peers during early childhood, while the attachment characteristic of seeking another as a safe haven was transferred in adolescence or early adulthood. The final characteristic, seeing the other as a secure

base, was transferred during early adulthood. In addition, the characteristic of seeing the other as a secure base was only transferred within the context of a very close relationship and took about two years of being in this relationship (either platonic or romantic) for this transfer to occur. It is important to note that, although the primary attachment needs may then be satisfied by a person other than parents, the child will still maintain an attachment relationship with his/her parents throughout his/her lifetime (Ainsworth, 1989).

Fraley and Davis (1997) examined the formation of attachment bonds as well as the transferring of the three attachment characteristics from parents to peers. Results indicated participants with a secure attachment style were more likely to utilize their best friend and romantic partner as an attachment figure than participants with either an avoidant or anxious-ambivalent attachment style. Individuals with an avoidant attachment style were less likely than other attachment styles to see either their best friend or their romantic partner as an attachment figure, possibly because these people have learned to depend on themselves and not seek support from others in that these efforts were rejected when they were children. Individuals with an anxious-ambivalent attachment style were more likely than the other attachment groups to have sexual feelings for a close friend of the opposite sex, and these friendships were more likely to have been violated by the friend in some way. Further, results indicated the process of transferring attachment from parents to peers followed the pattern mentioned above (Hazan & Zeifman, 1994), with utilizing peers as a secure base being the last characteristic to be transferred from parents to peers.

Taken together, these results indicate the attachment one forms during early childhood with important attachment figures is related to the development of attachment relationships in adulthood. Not only are individuals with a secure attachment more likely to use peers as a source of support in times of distress, but these relationships are also more likely to be characterized by mutual caring and trust.

Although attachment is primarily formed during infancy (first 24 months), the implications of the attachment style and behaviors one develops have lasting effects, as evidenced by the impact early attachments have on later attachments. Through a child's interactions with significant attachment figures, he/she comes to develop a working model of relationships to the self, the world, and other people. As Bowlby (1988) stated "...as a child grows older, the pattern becomes increasingly a property of the child himself..." (p. 127). If the working model is one based on secure attachment, then the child will grow up with the outlook that others are nurturing beings and can be depended on in time of need. If the working model is based on avoidant attachment, then the child will grow up with the outlook that others cannot be depended upon due to past experiences of rejection by their primary caregivers. If the working model is based on anxious-ambivalent attachment, then the child learns he/she can turn to others in times of distress, but the significant others may respond in positive or negative ways, at times meeting the needs for comfort and security but at others being unwilling or unavailable to comfort the child. These working models have a great impact on how people function day to day, such as how they interact

with others, how they view the world, and how they view themselves, including how they view and handle emotions (Bowlby, 1969/1982).

### Attachment and Affect Regulation

Bowlby (1969/1982) conceptualized attachment behaviors as part of a larger affect regulation system and believed that basic emotions were constructed on the basis of early interactions with important attachment figures (see also Calkins & Hill, 2007; Kerns, Abraham, Schlegelmilch, & Morgan, 2007; Mikulincer & Florian, 2004). During infancy, a child does not have the ability to regulate his/her own emotions or affective states. In times of distress, the infant seeks support and comfort of the parent. In an ideal situation, the parent responds by soothing the child during these times, while also modeling for the child ways in which to adaptively handle these emotions. This process, entitled co-regulation, is the first in a 2-step process of affect regulation. The second step involves the internalization of affect regulation. This is achieved via three mechanisms: broadening of a person's perspectives and capacities, expansion of the self, and internalization of functions that were originally performed by the primary caregiver (Mikulincer, Shaver, & Pereg, 2003).

As mentioned earlier, infants do not possess the necessary cognitive components or abilities to self-regulate emotions. However, as a child continues to utilize co-regulation strategies of proximity-seeking (e.g., crying, asking to be held, searching for a parent within the home, becoming distressed when the parent is not readily available), he/she is also learning ways to cope with emotions. This learning occurs at a time when the child is better able to understand adaptive coping skills and

can cognitively begin to evaluate potential strategies for effectiveness in regulating emotions; hence, the child has broader perspectives and capacities for emotional regulation (Mikulincer et al., 2003).

The second mechanism, an expansion of one's self-concept, occurs after the child is better able to handle emotions. During this time, a child is developing and defining beliefs, morals, values, etc. If the child is learning adaptive emotional regulation skills during this period, the child will incorporate these abilities into his/her sense of self. The child will see him/herself as a person who is capable of regulating emotions and will be more likely to call upon these skills, seen as strengths, in future distressing situations. It is important to note a person's self-concept is not a stable entity; rather, this construct is dynamic and can change depending on the circumstances in a particular environment. Therefore, a child who did not have a sensitive parent and, consequently, did not develop effective affect regulation into his/her self-concept may incorporate these affective regulation skills at a later date with a different attachment figure, such as a romantic partner (Mikulincer et al., 2003).

The third mechanism necessary for self-regulation is the internalization of a variety of affective regulatory functions, such as appropriate mirroring and being proud of one's accomplishments. Mikulincer and Shaver (2003) posited this mechanism is a result of a dynamic interplay between successful emotional coregulation between the child and the important attachment figure and that the child has developed a stable sense of self-worth. These two constructs influence one

another in that a stable sense of self-worth allows the person to have faith in his/her own affect regulation capabilities, while at the same time the establishment of self-regulation fosters a belief in one's self-worth. Therefore, this mechanism can be influenced by changes in either of these areas.

Once a person has made a successful transition from coregulation to self-regulation, he/she can then engage in security-based strategies to deal with distressing situations. A security-based strategy is a result of a secure attachment and simply reinforces the coping strategy of proximity seeking in times of stress. While the securely attached individual will also employ self-regulatory processes, he/she will still seek the support of others when self-regulation is not effective (Bowlby, 1988). The securely attached person believes others are there to help him/her in times of need and, based on past experiences, believes the current distress will be diminished by seeking support (Mikulincer et al., 2003; Shaver & Mikulincer, 2007). In addition, the secure person has an optimistic stance on distress management; that is, he/she feels capable of handling stressful situations should they arise, partly because of the belief that others will provide support (Shaver & Hazan, 1993; Shaver & Mikulincer, 2002).

Individuals with a more insecure attachment style (avoidant or anxious-ambivalent) do not progress through the coregulation to self-regulation process in the same way as securely attached individuals. For the insecurely attached person, the act of proximity seeking as a young child was not consistently met with care, comfort, and support. Therefore, successful coregulation was not possible, and these

individuals were forced to develop alternative coping strategies to manage their affective states, such as the strategies explained below (Mikulincer et al., 2003).

Individuals whose parent(s) did not respond to their needs in a supportive or comforting way come to view interactions with this primary attachment figure as hurtful or rejecting (Bowlby, 1988). Therefore, they are required to construct an alternative strategy for dealing with subjective distress. These individuals, classified as avoidant attachment style, adopt a deactivating strategy, so named because the goal of this strategy is to keep the attachment relationship “deactivated” to avoid further hurt or distress due to the primary caregiver’s continued unavailability (Mikulincer et al., 2003; Shaver & Mikulincer, 2007). In order for a person to avoid the attachment relationship, he/she makes attempts to avoid all situations that involve affect, both positive and negative. The deactivating individual will employ “preemptive” strategies, such as inattention to content, to avoid any internalization of emotions. “Postemptive” strategies, on the other hand, are utilized when the preemptive attempts fail to short-circuit feelings of distress or anxiety, such as when the individual is under significant stress (Shaver & Mikulincer, 2002). These strategies include repression and suppression and work to minimize the impact of perceived threats to the individual’s coping system. In addition, people who adopt the deactivating strategies tend to engage in an over-reliance on the self in an attempt to avoid any rejection, which can leave the individual vulnerable to perceived attacks on one’s character.



Individuals whose parent(s) were inconsistent in their responsiveness to the child's distress come to view the coping strategy of proximity seeking as a viable option (Bowlby, 1988). However, this inconsistency can leave the child feeling confused and unsure whether or not his/her attempts to be comforted will be met with support or rejection. This attachment style is labeled anxious-ambivalent because of the uncertainty regarding the availability of an important figure. Therefore, the child tends to go above and beyond the "normal" proximity seeking behavior, engaging in behaviors that can be classified as hyperactivating strategies (Mikulincer et al., 2003; Shaver & Mikulincer, 2007). Hyperactivating behaviors include overdependence in relationships and intensive efforts to secure the support of an attachment figure (Shaver & Hazan, 1993). The anxious-ambivalent individual tends to be sensitive to any potential threats to the self or to the accessibility of the parent/romantic partner. In addition, the person with an anxious attachment style can readily detect any negative aspects of situations, especially those that involve the important attachment figure (e.g., feelings of rejection, disapproval, abandonment).

Past research has discovered that, while the coping strategies in which one chooses to engage seem to be consistent for secure and anxious-ambivalent attachment styles, the avoidant attachment style person's deactivating strategies may not function well under significant stress. This lack of adequate functioning may occur because the level of stress is significant enough that the person is unable to completely detach from the situation or repress associated emotions (Mikulincer & Florian, 2004). When in these conditions, individuals with an avoidant attachment

style may utilize coping strategies similar to the anxious-ambivalent attachment person's coping mechanisms as described below (e.g. emotion-focused; Mikulincer & Florian, 2004).

The ability of a person to regulate his/her emotions becomes particularly important when faced with stressful situations. A prominent theoretical framework regarding types of coping posited by Lazarus and Folkman (1984), and has become a common model for conceptualizing affect regulation when under stress (Mikulincer & Florian, 2004). Lazarus and Folkman have identified four categories of coping responses: problem-focused, emotion-focused, distancing, and support seeking. Problem-focused coping involves a person utilizing cognitive and behavioral strategies in an attempt to make the necessary changes in an environment to eliminate or reduce the source of stress. Carver, Scheier, and Weintraub (1989) outlined four of the basic problem-focused strategies: active coping, in which a person actively removes obstacles causing stress; planning, in which the person brainstorms possible strategies for how to solve a problem; suppression of competing strategies, in which a person makes efforts to focus on the primary goal while reducing the focus on other, less central, issues; and restraint, in which a person avoids premature actions or decisions. Emotion-focused coping strategies make attempts to alleviate internal distress without taking any action to change the environment or solve the problem, and involve such strategies as self-preoccupation and overt displays of distress. Distancing coping strategies involve cognitive attempts to avoid intrusion of negative thoughts, such as thought suppression, and either withdrawing problem-focused

strategies or using drugs and alcohol in order to distance one's self from the problem at hand. Finally, support-seeking strategies involve seeking out or maintaining close proximity to others in an attempt to help cope with the stressful situation. This strategy involves seeking love, reassurance, and advice.

Research indicates the strategies involved in problem-focused coping and support-seeking tend to have beneficial outcomes, while there tends to be negative outcomes associated with emotion-focused coping strategies and distancing coping strategies (Lazarus & Folkman, 1984; Mikulincer & Florian, 2004). Although it is thought that an individual can engage in any or all of these four coping strategies depending on the situation, Folkman and Lazarus (1985) postulated people with a secure attachment style tend to utilize either the problem-focused or support-seeking strategies, individuals with avoidant attachment tend to engage in distancing coping strategies, and individuals with anxious-ambivalent attachment tend to utilize emotion-focused coping strategies.

Research has been conducted using the measure developed by Folkman and Lazarus (1985), titled the Ways of Coping Checklist. A study by Mikulincer, Florian and Weller (1993) examined the relationship between adult attachment styles and coping strategies in relation to the stressful experience of missile attacks on Israeli cities during the Gulf War. Young adults who either did or did not live in cities attacked by missiles were asked to complete the adult attachment style scale (Hazan & Shaver, 1987) and the Ways of Coping Checklist (Folkman & Lazarus) that had been adapted to examine ways of coping with missile attacks. Results from the study

indicated people with a self-reported secure attachment style were more likely to seek support from important relationship figures than those with insecure attachment styles. People reporting an anxious-ambivalent attachment style were more likely to report utilizing emotion-focused coping strategies, and those with avoidant attachment styles were more likely to report using distancing coping strategies. These findings supported the hypotheses proposed by Folkman and Lazarus (1985).

Investigators have suggested attachment style is also related to how an individual processes negative emotions. Mikulincer and Orbach (1995) conducted a study to examine the relationship between attachment style and the processing of negative emotional memories. Participants were asked to remember an early event in which they experienced anger, sadness, anxiety, and happiness. These participants also completed an adult attachment scale, a defensiveness measure, and a measure of state anxiety. Findings from the study showed the secure group was able to employ some defensive strategies (strategies consistent with attempting to appear in socially desirable ways, such as avoiding becoming too caught up in the negative memory) in order to deal with the request to recall events with negative emotionality. Individuals with a secure attachment style also rated the emotion dominant in the memory as intensely experienced, but rated other emotions as experienced much less intensely, indicating that while this individual can experience emotions central to the situation, he/she does not become overwhelmed by a myriad of affective states. The avoidant attachment group was also able to employ some defensive strategies (similar to the secure group) in order to try and modulate the negative emotions associated with the

request to recall a certain memory. However, members of the avoidant group scored high on the state anxiety measure, indicating that while the avoidant group tried to minimize the experience of negative affect, their attempts were unsuccessful. Individuals with an avoidant attachment style rated both central and peripheral emotions as far less intense, suggesting this individual is inhibiting the activation of any emotion. The anxious-ambivalent group also scored high on the state anxiety measure, indicating this group experienced some anxiety when asked to recall a memory with negative emotions. Furthermore, when compared to the secure group, the anxious-ambivalent group rated all emotions associated with a memory as experienced intensely, suggesting individuals with an anxious-ambivalent attachment style cannot limit the spreading of emotions from one to another, leading to the person becoming overwhelmed by these affective states.

Feeny (1995) studied the possible correlation between adult attachment style and the regulation of emotions (e.g., anger, sadness, anxiety) within long-term dating relationships. Participants in this study categorized themselves into one of four attachment styles, following the Bartholomew and Horowitz (1991) classifications. Emotion regulation was measured via the use of an interview in which the participant was asked how he/she reacts to the three negative emotions examined. However, the author of this study operationalized emotional control as a participant's report of hiding and smothering his/her feelings, in other words, engaging in maladaptive emotional control.

Results from this study indicated secure couples reported less control over negative emotions, especially the emotion of anger. An individual in a secure relationship was also less likely to perceive his/her partner as being emotionally controlling and expecting the participant to behave in kind. Secure couples also reported experiencing negative emotions within their romantic relationship less frequently than insecure (i.e., preoccupied, dismissing-avoidant, fearful-avoidant) couples. This study combined the three types of insecure attachment into one large group in order to achieve adequate cell size, thereby prohibiting any examination of differences among the insecure attachment styles. Overall, results showed individuals in secure romantic relationships feel more comfortable expressing negative emotions and are comfortable with their partner expressing these emotions as well. The adaptive expression of negative emotions, such as anger and anxiety, help to resolve conflicts as they arise and avoid issues such as resentment (Feeney, 1995).

Kobak and Sceery (1988) also studied the relationship between attachment styles and affect regulation, specifically ego-resiliency, ego-undercontrol, hostility, and anxiety. Results showed individuals classified as secure demonstrated more ego-resiliency than individuals in the avoidant or anxious-ambivalent groups. Individuals in the avoidant group were rated by peers as more hostile than individuals in either of the other two attachment styles and individuals in the anxious-ambivalent group were rated by peers as more anxious than either those in the secure or avoidant groups. Anxious-ambivalent individuals reported more psychopathology on a self-report measure of current distress than those in the other two attachment groups. Taken

together, these results indicated secure individuals are more resilient during times of distress and have the ability to effectively modulate negative emotions, whereas individuals in either the avoidant or anxious-ambivalent attachment group utilize other, less effective, coping strategies to regulate their affective states.

Nada Raja, McGee, and Stanton (1992) examined the relationship between perceived attachments to parents and peers and psychological well-being in an adolescent sample. Adolescents completed the Inventory of Parent and Peer Attachment as well as the Diagnostic Interview Schedule for Children. The researchers classified the participants into high and low attachment groups to both parents and peers, yielding four groupings (e.g., high parent-high peer, high parent-low peer, low parent-high peer, and low parent-low peer). Results from the study indicated that, overall, adolescents who reported high attachment to their parents experienced the lowest number of psychological symptoms, with the attachment to peers not making a significant difference. Adolescents with low parent attachment had significantly higher scores for inattention and conduct disorder. All attachment groupings, except for the high parent-high peer group, exhibited higher than average levels of anxiety. Finally, individuals with perceived low parental attachment reported more distress and indicated experiencing more negative life events than adolescents with high parent attachment. Overall, results indicated there was a negative relationship between the level of parental attachment and the presence of psychological symptoms. Surprisingly, this study found few instances in which a participant's attachment to his/her peers made a significant difference in the

presence/absence of psychological symptoms. The investigators suggested the lack of association between peer attachment and psychological distress is in line with other research that found adolescents continue to place a greater importance on their relationships with their parents than with their peers (Greenberg, Siegel, & Leitch, 1983).

In summary, of the research conducted in the area of attachment styles and affective regulation, findings support the idea that individuals with a secure attachment style are more equipped to handle emotions, including stressful situations, in adaptive ways (Shaver & Mikulincer, 2007; Zimmerman, 1999). On the other hand, individuals with either an avoidant or anxious-ambivalent attachment style are not as well-equipped to adaptively handle emotions and employ alternative strategies that do not effectively confront the emotional experience. These individuals may employ strategies such as focusing on alleviating the affective state (anxious-ambivalent) or distancing themselves from the distress (avoidant). One way to avoid confronting emotions is to engage in risky pleasurable behaviors, as engagement in these types of activities provides a distraction from current feelings of distress (Mikulincer & Florian, 2004). These strategies often result in the insecurely attached individual experiencing higher levels of psychological distress because emotions are not effectively dealt with (e.g., Feeney, 1995; John & Gross, 2007; Kobak & Sceery, 1988).



## Risky Behaviors

Adolescence is a time of marked transitions as a person goes from being a child to becoming a young adult. Given the many changes that occur during this period of time, some researchers (e.g., Cooper et al., 1998; Levy-Warren, 1996) have made distinctions within the adolescent developmental period. The first phase, often called early adolescence, encompasses the beginning of adolescence, generally 10-14 years of age. During this phase, adolescents begin to “de-idealize” their parents, or start to see their parents as real people as opposed to all-knowing, all-protecting figures. This represents an important shift in a person’s beginning autonomy in which he/she starts to figure out various aspects of the self, such as beliefs, values, etc. This heightened awareness of one’s internal processes as well as these aspects in one’s peers is a consistent focus throughout adolescence, allowing the child to distance him/herself from the family of origin.

Middle adolescence, which is generally defined as occurring between the ages of 15-18 years, is centrally focused on the adolescent becoming grounded in his/her new “world” of peers, school, and social culture. Adolescents at this age are also greatly susceptible to peer pressure due to their want/need to conform to their new surroundings. In addition, the middle adolescent is going through a sort of mourning process as a result of his/her disengagement with parents and may end up feeling somewhat lonely and isolated. In order to counteract these feelings of loneliness, the adolescent may develop many friendships, including romantic relationships.

Finally, late adolescence is generally thought to occur from the ages of 19-22 years, although it may end as late as 25 years of age. The main focus of late adolescence is the integration of the years of self-introspection that occurred during early and middle adolescence. The goal of this sub-phase of adolescence is to emerge with a coherent schema of how one acts, thinks, behaves, and believes. This comprehensive schema is often referred to as the “ego-ideal” or a set of self-representations that encompass who one is and who one wishes to be. The relationships with parents, peers, and romantic attachments are the main sources of input for the ego-ideal and, therefore, the aspect of attachment can and does influence how one develops the idea of who he/she is and how he/she anticipates the outside world (Levy-Warren, 1996).

One area of adolescent functioning that has received attention from researchers in the last 20 years (Jessor, 1991) is risky or problematic behaviors, such as alcohol and drug use, sexual activity, delinquent behavior, and academic achievement (Cooper et al., 1998). Risky behavior has been defined as “behavior that is socially defined as a problem, a source of concern, or as undesirable by the norms of conventional society... and its occurrence usually elicits some kind of social response” (Jessor & Jessor, 1977, p. 33). Some researchers go one step further to differentiate risky behaviors from more problematic risky activities, for example the difference between having sexual intercourse and having sexual intercourse with a stranger. In these cases, it is the higher probability of negative outcomes that separates the two forms of behaviors. Although there is a paucity of research in the

area of reasons behind adolescents' engagement in these behaviors, some researchers have postulated engagement in these risky behaviors is related to aspects of the adolescent's life, such as the relationship with one's parents (e.g., attachment style), relationships with peers, and related emotional functioning (Mullin & Hinshaw, 2007; Sher & Grekin, 2007). For example, Cooper et al. (1998) examined the relationship between romantic attachment styles, emotional regulation, and engagement in risky behaviors in adolescence. The researchers collected data on 2,011 Caucasian and African American adolescents (early, middle and late) regarding attachment to a romantic partner, levels of current psychological distress, and engagement in risky behaviors. The researchers hypothesized that while attachment would be related to risky behaviors, the variable of current psychological distress, which the authors equated with emotion regulation, would be a mediating variable between the two (attachment and risky behaviors).

Results from the Cooper et al. (1998) showed both African American and Caucasian adolescents who were securely attached reported less levels of psychological distress than either the avoidant or anxious-ambivalent participants. Although the secure group reported engagement in risky behaviors to a similar extent as the anxious-ambivalent group, the engagement in more problematic risky behaviors (e.g., sex with a stranger) was significantly lower than either of the insecure attachment groups. An important implication with this finding is that some engagement in risky behaviors may in fact be part of the normative developmental process, as hypothesized by Baumrind (1987). It may be the types of behaviors

engaged in as well as the motivations for the engagement that differentiates individuals with secure attachment from those with either avoidant or anxious-ambivalent attachment styles.

The findings regarding emotion regulation as a mediating variable were somewhat complex. Results from the mediation analysis did lend support to the hypothesis that individuals with insecure attachment (avoidant and anxious-ambivalent) tended to experience greater levels of psychological distress than the secure group, specifically feelings of hostility and anxiety. When comparing avoidant and anxious-ambivalent attachment styles, individuals with avoidant attachment were significantly less hostile and depressed, were less socially competent, and were less likely to be involved in delinquent or substance use behaviors. Individuals with anxious-ambivalent attachment styles were the most likely of the three attachment groups to engage in risky behaviors, partly because of the high levels of negative affect they experienced. In summary, the results lend support to the relationship between attachment style, emotion regulation, and engagement in risky behaviors (cooper et al, 1998).

Caspers, Cadoret, Langbehn, Yucuis, and Troutman (2005) examined the possible predictive nature of attachment style on illicit substance use in adolescents. These researchers evaluated the possible mediating factor of social support, in that this proximity seeking is a main aspect of attachment theory and helps to differentiate secure attachment from other forms (avoidant and anxious-ambivalent). Results from this study indicated individuals with secure attachment engaged in less illicit

substance use than either the individuals in avoidant or anxious-ambivalent attachment groups; the latter two groups did not differ from each other. In addition, individuals with an anxious-ambivalent attachment style were more likely than individuals in the other two attachment styles to report a lack of perceived social support. Social support was a mediating factor for both the secure and anxious-ambivalent attachment styles, with lower perceived support predicting an increased chance of illicit substance use. Interestingly, although avoidant individuals did not identify their perceived social support as lacking, they still engaged in risky behaviors at a level similar to that of the anxious-ambivalent individuals. The researchers speculated these individuals may have an inaccurate idea of actual social support or the likelihood that they would seek out social support during times of distress.

Kostecky (2005) examined the relationship between attachment style and substance use (defined alcohol, marijuana, and other drugs) in rural adolescents. Results showed attachment style was significantly related to substance use in that individuals who identified their relationships with their parents as “close” had lower levels of substance use. While the results of this study are of limited generalizability due to the rural communities in which data was collected, the study does lend support to the idea that attachment style is significantly related to frequency of substance use in adolescence. A significant limitation to this study is the fact that the researcher did not employ the attachment styles as outlined by Ainsworth et al. (1978), making meaningful comparisons across studies difficult.

Leas and Mellor (2000) studied the relationship between risk behavior, attachment to parents, and depression. Participants were administered self-report measures of each variable. Results from this study indicated that although parent attachment style was negatively related to engagement in risky behaviors (lower levels of parental attachment were correlated with higher levels of engagement in risky behaviors), the quality of parental attachment had very low predictive power for the delinquency variable. Level of depression was a significant positive predictor of engagement in risky behaviors. Researchers posited the lack of predictive power for parental attachment could have been due to the overall low scores on the attachment measures, which lowered the variability among the scores. Again, the researchers in this study did not utilize the attachment styles of secure, anxious-ambivalent, and avoidant to classify the participants.

Brennan and Shaver (1995) examined the relationship between adult romantic attachment and engagement in the risky behaviors of alcohol use and sexual activity. These researchers hypothesized engagement in risky behaviors was in itself evidence of problematic affect regulation, as choosing to abuse alcohol or have casual sexual relations may help to reduce anxiety or promote a sense of security in those with insecure attachment. This study also utilized a categorical and continuous measure of attachment in order to discover which instrument would provide a better representation of attachment style. Results from this study showed individuals who scored high on the secure attachment style tended to score low on the problematic sexual activity items, such as engaging in casual sex or believing “sex without love is

OK.” Individuals who scored high on the avoidance attachment style tended to report a more unrestricted (or uncommitted) sexual orientation. Anxious-ambivalent participants did not demonstrate any significant correlations between attachment style and sexual behaviors. With regard to alcohol use, both avoidant and anxious-ambivalent individuals reported more use of alcohol in order to cope, whereas the secure attachment style was negatively associated with this measure of alcohol use. Overall, the researchers suggested individuals with either an avoidant or anxious-ambivalent attachment style may be more likely to engage in risky behaviors, such as binge drinking or casual sexual encounters, as a way to reduce tension or anxiety and avoid emotional distress.

In summary, research in the area of parental attachment as it relates to adolescent risky behaviors is limited (Caspers et al., 2005). Research that goes one step further to investigate the possible mediating relationship of emotional regulation is markedly scarce. Of the few studies conducted in this area, findings generally support the hypothesis that attachment style is significantly related to an adolescent’s engagement in risky behaviors and emotional regulation is a mediating factor for some of the risky behaviors evaluated, such as substance use.

#### Limitations of Current Literature and Research Rationale

Previous literature indicates that individuals with a secure attachment style have an internal working model that allows them to not only see themselves as capable of handling emotions, but to also see others as viable options to turn to for comfort and support during difficult times. These people also tend to engage in more

problem-focused coping strategies and report lower levels of emotional distress than individuals with insecure attachment. While adolescents with a secure attachment style engage in some risky behaviors with a similar frequency to those with insecure attachment styles, researchers have hypothesized that engagement in these behaviors is part of a normal developmental process and, therefore, not pathological in nature.

Individuals with an avoidant attachment style have an internal working model that views others as unresponsive or even rejecting during times of need and, therefore, others cannot be depended upon when one is in distress. However, in that these individuals did not experience successful co-regulation of emotions as an infant, they are not well equipped to handle emotional experiences. These people tend to engage in more distancing coping strategies and experience higher levels of emotional distress than those who are securely attached. Interestingly, adolescents with an avoidant attachment style tend to engage in risky behaviors less often than individuals who are anxious-ambivalent or securely attached, possibly due to the avoidant adolescents' lack of close social relationships. However, the risky behaviors in which avoidantly attached adolescents do engage tend to be more problematic than behaviors engaged in by securely attached adolescents, indicating the underlying drive may be more problematic in nature.

Individuals with an anxious-ambivalent attachment style develop an internal working model that others are inconsistent in their level of responsiveness during times of distress. Therefore, the anxious-ambivalent person is often unsure of another's response and is often hypervigilant when around an important attachment



figure, watching for any clues as to the figure's responsiveness (positive or negative). These individuals tend to utilize emotion-focused coping strategies and report higher levels of emotional distress than those who are securely attached. Adolescents with an anxious-ambivalent attachment style engage in a high number of risky behaviors, with similar frequency to those with secure attachment. However, anxious-ambivalent adolescents report engaging in a higher number of problematic risky behaviors when compared to securely attached adolescents, indicating the underlying drive may be more pathological in nature as opposed to part of a normal developmental process.

Although aspects of attachment, affect regulation, and risky behaviors have been studied previously, the combination of parental attachment, peer attachment, romantic attachment, affect regulation, and risky behaviors in a late adolescent sample has not been examined in the published literature. Most studies have examined the similarities among parental, peer, and/or romantic attachment (e.g., Greenberg et al., 1983; Nada Raja et al., 1992); attachment styles and affect regulation (e.g., Feeney, 1995; Fraley & Davis, 1997); or parental attachment and engagement in risky behaviors (e.g., Caspers et al., 2005; Leas & Mellor, 2000). The majority of studies conducted previously have either used a one-item measure of attachment (e.g., Hazan & Shaver, 1987) or a semi-structured interview that is scored using the researcher's unique system (e.g., Kobak & Sceery, 1988), which does not allow results to be compared across studies. Affect regulation is a construct that has been defined in a variety of ways, ranging from current levels of psychological distress (Cooper et al., 1998) utilizing a variety of coping strategies (Folkman &

Lazarus, 1985) to eliciting negative emotions through memory recall (Mikulincer & Orbach, 1995). The lack of a standard operational definition of affect regulation again makes it difficult to compare results across studies. Furthermore, Cooper et al. (1998) found that affect regulation played a mediating role between the variables of attachment and engagement in risky behaviors in an adolescent sample, which indicates some previous researchers may have overlooked a vital component in the relationship among these constructs. Lastly, little empirical research has been conducted in the area of attachment style and engagement in risky behaviors in an adolescent sample, highlighting the need for more studies to be conducted with this population since adolescents' engagement in risky behaviors is often a concern to parents, teachers, administrators, and many other professionals (Jessor, 1991).

The current study was modeled primarily after the Cooper et al. (1998) study which is regarded as one of the best studies examining the relationships between adolescents' attachment, affect regulation, and engagement in risky behaviors. The current study addressed the limitations of the previous study in that all three types of attachment bonds (i.e., parent, peer, and romantic) were measured as opposed to only romantic attachment. Furthermore, attachment style was measured in two ways, yielding a continuous and categorical measure of attachment. While Cooper et al. also used a continuous measure, the current study utilized a multi-item instrument in an attempt to gain a clearer picture of any variability within the attachment styles. No study thus far has directly compared the two types of attachment measures in how they relate to variables such as affect regulation or engagement in risky behaviors. A

continuous measure of attachment does appear to have many advantages over a categorical measure, such as being able to assess for individual differences within the categories and the ability to utilize additional statistical analyses (Simpson, 1990). It was beneficial to identify the strengths and weaknesses of each form of measurement as they apply to attachment styles in order to ensure this construct is being measured in the most accurate way possible.

A commonly used measure of affect regulation, or current emotional distress, was used in the Cooper et al. (1998) study as well as the current study in an attempt to better understand the construct of affect regulation as it relates to attachment style. Given the paucity of the research on the potential mediating role of affect regulation in the relationship between attachment styles and engagement in risky behaviors and the significant results found in the Cooper et al. study, the current study attempted to validate affect regulation as a mediator. The previous study indicated an individual's affective regulation accounted for the relationship between his/her attachment style and engagement in risky behaviors. The current study attempted to provide further support for the findings in the Cooper et al. study.

The current study also provided an important contribution to the existing literature on the relationship among adolescents' attachment styles, affect regulation, and problem behaviors. While many investigators have discussed the potential adverse consequences of adolescents engaging in risky behaviors, there is a lack of empirical evidence available that examines the possible contribution of attachment styles and affective regulation on adolescents' engagement in risky behaviors. Risky

behavior has been defined as any behavior labeled as a problem by society or which does not conform to the societal norms (Jessor & Jessor, 1977). Having additional information regarding how emotional regulation may contribute to an adolescent engaging in risky behavior could aide in developing programs to counteract aspects such as insecure attachment or ineffective affect regulation skills in an attempt to decrease his/her engagement in these risky behaviors.

The current study also has clinical implications for working with late adolescents. First, information regarding the relationship between emotional regulation and engagement in risky behaviors could help therapists who work with adolescents in that the therapy could focus on ways to successfully regulate emotions as opposed to solely focusing on behavioral ways to reduce engagement in risky behaviors. Knowing about a child's attachment could also help in a family therapy context in that the family system could work together to not only correct some of the maladaptive patterns that led to the formation of the adolescent's insecure attachment, but the family unit could also develop emotional regulation skills that can be practiced at home, thereby possibly reducing the adolescent's engagement in risky behaviors. Insecure attachment is often noticed at an early age by professionals such as physicians, teachers, or school counselors. Identifying these children early and teaching emotional regulation techniques could help these children later in life in a variety of ways, such as lower engagement in risky behaviors and the formation of more secure relationships. Furthermore, adults who are attempting to abstain from substance use may benefit from psychotherapy that focuses on ways to better regulate

their emotions. Learning these skills may increase the chances he/she will remain abstinent from alcohol or drugs.

### Research Questions and Hypotheses

Hypothesis 1. The style of attachment will be significantly similar across relationships of parent, peer, and romantic partner.

Hypothesis 2. Attachment styles will be significantly similar across categorical and continuous measures of attachment.

Hypothesis 3. Level of secure attachment will be significantly, negatively associated with level of psychological distress.

Hypothesis 4. Level of secure attachment will be significantly, negatively related to engagement in sexual behaviors.

Hypothesis 5. Level of secure attachment will be significantly, negatively associated with engagement in substance use.

Hypothesis 6. Level of psychological distress will be significantly, positively related to engagement in sexual behaviors.

Hypothesis 7. Level of psychological distress will be significantly, positively associated with engagement in substance use.

Hypothesis 8. Level of psychological distress will mediate the relationship between attachment and engagement in sexual behaviors.

Hypothesis 9. Level of psychological distress will mediate the relationship between attachment and engagement in substance use.

In addition, differences in attachment style, affect regulation/coping strategies, and engagement in risky behaviors based on sex and race will be explored.

## CHAPTER 2

### METHOD

#### Participants

The participants who composed the current study consisted of college undergraduates enrolled in psychology courses. The individuals who participated in the current study either received class credit for a course requirement or extra credit. Given that previous research has indicated a distribution of attachment styles of 60% secure attachment, 25% avoidant, and 15% anxious-ambivalent (Campos et al, 1983), an *N* of at least 200 was needed in order to obtain an adequate number of participants for each attachment style classification. Exclusion criteria included individuals over the age of 24 years, since Newman and Newman (2006) identified this age as the transition period between later adolescence and early adulthood. All participants were treated in accordance with the “Ethical Principles of Psychologists and Code of Conduct” (American Psychological Association, 2002).

Of the 215 participants, 4 were discarded due to missing data and 2 of the participants did not meet the age inclusion criteria. The remaining sample of 209 participants consisted of 155 females and 54 males. Participants’ ages ranged from 18-24 years, with a mean age of 20.5 years. The ethnic makeup of the sample was somewhat diverse, with 57.4% Caucasian, 18.2% African American, 15.3% Hispanic, 7.2% Asian, and 1.9% classified as Other. For the purposes of analyses, the Asian and Other categories were combined. The identified sexual orientation of the participants was as follows: 92.8% heterosexual, 3.8% homosexual, and 3.3% bisexual. The total

family income of the participants varied widely, from \$10,000 to \$500,000 per year. Regarding years of college attended, 31.6% had less than one year of higher education, 9.6% had one year, 18.2% had two years, 18.2% had three years, 11.5% had four years, and 11.0% had five or more years. One hundred sixty-six (79.4%) participants identified their mother as their primary parental attachment figure, while 43 (20.6%) chose their father. Additional information regarding the continuous demographic variables of age, total family income, and years of college attended is available in Table 1.

## Measures

### *Demographic Questionnaire*

A demographic questionnaire was distributed in order to gather basic information on the participants. Items on this questionnaire included age, gender, sexual orientation, ethnicity, involvement in a relationship, income of parents, undergraduate classification, and number of years attending college (see Appendix B). This information was used to determine if any of demographic variables were significantly related to the independent or dependent measures.

### *Hazan-Shaver Attachment Self-Report*

The Hazan-Shaver Attachment Self-Report (H&S; Hazan & Shaver, 1987) is a one-item self-report measure originally developed to assess adult romantic attachment. This measure was founded on the Ainsworth et al. (1978) theory that there were three attachment styles: secure, avoidant, and anxious-ambivalent. The researchers developed three brief descriptions (one for each attachment style) and



asked participants to choose which of the descriptions was most representative of their feelings (see Appendix C). The descriptions read as follows: (a) “I find it relatively easy to get close to others and am comfortable depending on them and having them depend on me. I don’t often worry about being abandoned or about someone getting too close to me.” (secure attachment); (b) “I am somewhat uncomfortable being close to others; I find it difficult to trust them completely, difficult to allow myself to depend on them. I am nervous when anyone gets too close, and often, love partners want me to be more intimate than I feel comfortable with.” (avoidant attachment); (c) “I find that others are reluctant to get as close as I would like. I often worry that my partner doesn’t really love me or won’t want to stay with me. I want to merge completely with another person, and this desire sometimes scares people away.” (anxious-ambivalent attachment)

This measure is the most widely used to evaluate adult romantic attachment and has been modified to evaluate parental and peer attachment (e.g., Collins & Read, 1990; Mikulincer, Florian, & Tolmacz, 1990). In addition, Sperling, Foelsch, and Grace (1996) examined six self-report measures of attachment and found that the H&S was a “vigorous” instrument as a categorical measure. For the purposes of the current study, the items were modified slightly in order to examine each attachment bond: parent, peer, and romantic. Participants were asked to complete the H&S measure three times, one for each attachment bond. To evaluate parent attachment, participants were asked to complete the questionnaire keeping the parent whom they were closest to in mind. For peer attachment, the participants were instructed to

answer the item with regard to their relationship with a best friend. Finally, for romantic attachment, participants were asked to evaluate either their current romantic relationship or their most recent romantic relationship if they were not currently involved.

### *Attachment Style Measure*

The Attachment Style Measure (ASM; Simpson, 1990) is a self-report measure designed using the Hazan-Shaver Attachment Self-Report measure. Simpson deconstructed Hazan and Shaver's (1987) three paragraphs into 13 individual sentences where a respondent could rate each item on a 7-point Likert-type scale, ranging from *strongly disagree* (1) to *strongly agree* (7). To control for acquiescence response bias, three items were worded in the negative direction (see Appendix D). The items are as follows: (a) "I find it relatively easy to get close to others," (b) "I'm not very comfortable having to depend on other people," (c) "I'm comfortable having others depend on me," (d) "I rarely worry about being abandoned by others," (e) "I don't like people getting too close to me," (f) "I'm somewhat uncomfortable being too close to others," (g) "I find it difficult to trust others completely," (h) "I'm nervous whenever anyone gets too close to me," (i) "Others often want me to be more intimate than I feel comfortable being," (j) "Others often are reluctant to get as close as I would like," (k) "I often worry that my partner(s) don't really love me," (l) "I rarely worry about my partner(s) leaving me," and (m) "I often want to merge completely with others, and this desire sometimes scares them away." Items a-e were taken from the secure attachment vignette, f-i were from the avoidant attachment

style, and items j-m were taken from the anxious-ambivalent attachment vignette. Scoring was done by summing the items from each vignette (the three reverse are appropriately changed), yielding three indexes: Secure Attachment Style, Avoidant Attachment Style, and Anxious-Ambivalent Attachment Style. In each case, higher scores indicated higher levels of attachment in these areas (e.g., higher secure scores reflect greater security, higher avoidant scores reflect greater avoidance, and higher anxious-ambivalent scores indicate greater anxiousness). Participants completed the ASM three times: one in regard to how they typically felt toward the parent to whom they were closest (parental attachment), a second time in regard to their best friend (peer attachment), and a third time regarding their romantic partner (romantic attachment). If participants were not currently involved in a romantic relationship, they were instructed to answer the items based on their most recent romantic relationship.

Simpson (1990) demonstrated less than desirable internal consistency coefficients for the secure style ( $\alpha = .51$ ) and the anxious-ambivalent style ( $\alpha = .59$ ), while the coefficient value for avoidant style was adequate ( $\alpha = .79$ ). In a follow-up study, Sperling et al. (1996) only found low internal consistency for the secure style ( $\alpha = .42$ ), while the coefficient for both the avoidant style ( $\alpha = .80$ ) and the anxious-ambivalent style ( $\alpha = .79$ ) were adequate. Despite the low value for the secure style found in both studies, Sperling et al. still found the ASM to be the “best choice” for examining attachment in a continuous way, largely because of its direct link to Ainsworth et al.’s (1978) attachment style distinctions.

The current study examined the internal consistency of the ASM for parent, peer, and romantic attachment. Parental attachment showed adequate internal consistencies for both the secure ( $\alpha = .71$ ) and avoidant ( $\alpha = .77$ ) subscales, while the anxious-ambivalent style ( $\alpha = .60$ ) was somewhat low. Peer attachment similarly exhibited adequate secure ( $\alpha = .72$ ) and avoidant ( $\alpha = .82$ ) styles, but again the anxious-ambivalent subscale was somewhat less than desirable ( $\alpha = .60$ ). Romantic attachment showed adequate internal consistency coefficients for secure ( $\alpha = .77$ ), avoidant ( $\alpha = .82$ ), and anxious-ambivalent ( $\alpha = .75$ ). Overall, the internal consistencies for the nine ASM subscales were slightly higher than those reported by Simpson (1990).

#### *Brief Symptom Inventory*

The Brief Symptom Inventory (BSI; Derogatis, 1996) is a short self-report measure of psychological symptoms. This measure was originally designed to be a shorter alternative to its parent measure, the Symptom Checklist-90-R. The BSI has shown high internal consistency, with Cronbach alpha = .71-.85. Test-retest reliabilities for the 9 subscales and the global indices ranged from .68-.91 after a two week interval. The BSI is a 53-item measure which yields 9 symptom categories: somatization, obsessive-compulsive behavior, depression, anxiety, interpersonal sensitivity, hostility, phobic anxiety, paranoid ideation, and psychoticism. In addition, 3 more general or global scores are derived: Global Severity Index, Positive Symptom Distress Index and Positive Symptom Total. This measure asks the participant to evaluate to what extent he/she has experienced various symptoms in the

past 7 days, including the day of test administration. Item responses on this measure range from 0 = “not at all” to “4 = extremely.” For the purposes of the current study, the Global Severity Index was used as a measure of overall psychological distress, as the 9 subscales showed significant intercorrelations and consequently could not be treated as separate constructs. The internal consistency for this measure was high ( $\alpha = .94$ ).

#### *Sexual Activity Questionnaire*

The items that comprise the Sexual Activity Questionnaire were taken largely from the Cooper et al. (1998) study, which were taken from major national surveys of adolescent sexual behavior (e.g., Zelnick & Kantner, 1979; National Center for Health Statistics, 1985, as cited in Cooper et al., 1998). There were six behaviorally oriented items: (a) whether the respondent had ever had sex, (b) whether the respondent had ever engaged in oral sex, (c) whether the respondent had ever had sex with a stranger, (d) whether the respondent had ever had anal sex, (e) whether the respondent had ever had a sexually transmitted disease, (f) whether he/she had ever been pregnant or gotten someone else pregnant. An index of sexual activity was created by adding the number of positive responses to items a-f. A participant who had never had sex was given a score of 1. Individuals who have had sex were assigned a score of 2, participants who reported any one of the behaviors in items b-f were given a score of 3, and so on. Thus, the scores on this measure ranged from 1-6, with higher scores indicating more engagement in risky sexual behaviors. Internal

consistency for this measure was less than desirable ( $\alpha = .65$ ). The Sexual Behaviors Questionnaire may be found in Appendix E.

### *Substance Use Questionnaire*

Again, items for the Substance Use Questionnaire were largely taken from the Cooper et al. (1998) study (see Appendix F). For alcohol use the items were: (a) had a respondent ever used alcohol, (b) how often had the respondent drank five or more alcoholic drinks on a single occasion in the past six months, (c) how often had the respondent drank alcohol to the point of intoxication in the past six months, (d) how often had the use of alcohol in the past six months caused problems in any of the following areas: parents, friends, dating partners, at school/work, or legal.

Participants answered the frequency of alcohol use on a 9-point scale, ranging from 1 = *never* to 9 = *everyday*. Drug use was assessed by counting the number of illicit drugs the respondent had ever used: (a) marijuana/hashish, (b) cocaine/crack, (c) LSD, (d) angel dust/PCP, (e) ecstasy or other designer drugs, (f) methamphetamines/crystal meth, (g) prescription drugs that were not prescribed to you, (h) inhalants, and (i) heroin. Scoring for this item ranged from 1 = *none* to 9 = *all drugs used*. An additional item was asked: had the respondent ever sold drugs.

Participants were also asked the frequency with which they had used illicit drugs in the past six months. Finally, the respondent was asked how often the use of illicit drugs (listed above) had caused problems in the following areas during the past 6 months: family, friends, dating partners, at school/work, and legal. An index of substance use was created by determining a participant's engagement in a behavior

(alcohol and/or drug use), as well as the frequency of this use and the frequency of associated problems. Internal consistency for this measure was adequate ( $\alpha = .77$ ).

#### Procedure

Participants were notified of the current study through the EMS website and/or by brief announcement in psychology related courses. The EMS website described the research study (study on views about parents, friends, dating partners, emotions and activities), the nature of the research (answering of various questionnaires), the number of credits offered (one credit per half hour of participation), the approximate length of time it will take to participate (about 60 minutes), and the researcher and faculty sponsor of the research. Participants were able to sign-up for the study through the EMS website. The researcher posted predetermined time slots for the administration of the aforementioned measures and the students chose from one of the available times. An email was automatically sent to the student 24 hours prior to the selected time as a reminder.

Since the response format was self-report in nature, participants were evaluated in large groups, such as in a large lecture hall on the campus of the University of North Texas. Participants were first asked to sign a consent form (see Appendix G), and the various aspects of informed consent were verbally reviewed prior to the administration of the measures packet. In addition, participants were given a copy of the signed consent form which included contact information for the researcher. Once informed consent was obtained from the participants, each received a packet containing the measures previously explained: a demographics

questionnaire, the Attachment Style Measure (parent, peer, romantic), the Hazan-Shaver Attachment Self-Report (parent, peer, romantic), the Brief Symptom Inventory, and the Sexual Behaviors Questionnaire, and the Substance Use Questionnaire. These measures were randomly ordered to minimize any potential ordering effects. Participants were asked to then complete each measure and return the packet to the examiner. Each packet was labeled with a participant number so the participant's identity remained confidential, although the primary investigator retained a temporary list of participants in order to award appropriate credits to the participants who completed the study. This list was later destroyed by the current researcher.



## CHAPTER 3

### RESULTS

#### Descriptive Statistics

For all independent and dependent variables, sample sizes, means, standard deviations, skewness, kurtosis, standard error, observed minimum, observed maximum, and percentages were calculated. These statistics were computed for each variable and are presented in Tables 2 and 3. Due to the small sample size for avoidant (range from 4-11), avoidant and anxious-ambivalent attachment styles for each attachment source were combined, labeled “insecure attachment” for the purposes of analysis (1 = secure, 2 = insecure). Also due to small sample size for both bisexual ( $n = 7$ ) and homosexual orientations ( $n = 8$ ), these classifications were combined and labeled “non-heterosexual orientation” for the purposes of analyses (heterosexual = 1, non-heterosexual = 2). As shown in Table 4, participants, regardless of gender, ethnicity, or sexual orientation, reported secure parental and peer attachments most often. Romantic attachment tended to be secure across gender and ethnicity; however, individuals who classified themselves as having a bisexual orientation ( $n = 7$ ) reported an anxious-ambivalent attachment most often (57%).

With regard to the ASM attachment measure, participants tended to score high on the secure parental, peer, and romantic scales, with mean scores ranging from 25.68 for romantic secure to 27.78 for peer secure. Individuals scored comparatively lower on the avoidant parental, peer, and romantic attachment scales as well as the anxious-ambivalent parental, peer, and romantic attachment scales. The avoidant

mean scores ranged from 8.52 for parental attachment to 11.26 for romantic attachment. The anxious-ambivalent mean scores ranged from 8.33 for parental attachment to 11.31 for romantic attachment. Evaluation of the scores revealed they were normally distributed, as both the skewness and kurtosis values were within acceptable limits (see Table 2).

Scores on the dependent variables were all in the low range. Participants' average score for GSI was  $M = .78$ , with a range from 0-3.36. Reported engagement in sexual behaviors was also low, with a mean of 2.96 and a range of 1-6 (with higher scores indicating engagement in more sexual behaviors). Participants' reported substance use was also fairly low, with an average score of 12.88 and a range of 5-48. Scores on both the GSI measure and the measure of sexual behaviors were normally distributed. Scores from the substance abuse measure were mildly elevated (kurtosis = 2.42), but within an acceptable range (see Table 3).

Participants' responses to individual items on the sexual behaviors and substance use measures were reviewed. The majority of the sample reported engaging in sexual intercourse and/or oral sex, but they were unlikely to have engaged in more risky sexual behaviors, such as engaging in anal sex or having sexual intercourse with a stranger. The participants were very unlikely to have ever contracted a sexually transmitted disease (STD) or have gotten someone/become pregnant. With regard to substance use, the vast majority of participants admitted to consuming alcohol at least one time in their lives, and approximately half of the sample reported marijuana use. Relatively few participants indicated they had used any other illicit substances during

their lifetimes or sold drugs. For a more in-depth examination of these frequencies, see Tables 5 and 6.

### Inferential Statistics

Demographic variables that showed significant relationships with the independent or dependent variable(s) were included in the respective analyses to control for the influence of these relationships. Consequently, the number of participants changed from one analysis to another, due to the missing values for total family income. Analyses that included total family income have an  $N = 159$ , whereas analyses that did not include this variable have an  $N = 209$ .

#### *Dependent Variables and Demographics*

A series of independent  $t$ -tests, correlations, and one way analyses of variance (ANOVA) were computed for each dependent variable to ensure gender (2 levels: male and female); sexual orientation (2 levels: heterosexual and non-heterosexual); ethnicity (4 levels: Caucasian, African American, Hispanic, and Other); years of college attended (ranging 1-5 years); total family income (ranging from \$10,000 to \$500,000 yearly,  $SD = 82,309$ ); and age (ranging from 18-24 years) were not moderators, mediators, or covariates.

Independent-samples  $t$ -tests were run to determine any relationship between gender and the dependent variables. Results indicated a significant difference between gender groups for substance use,  $t(207) = 2.73, p = .008$ . Specifically, males ( $N = 54, M = 15.93, SD = 10.23$ ) reported more substance use and experiencing more problems associated with this use than females ( $N = 155, M = 11.82, SD = 7.09$ ). This

difference was also seen in a correlation between participant gender and substance use ( $r = -.22, p < .01$ ; see Table 7). There were no significant relationships between either gender and GSI or gender and sexual behaviors.

Three one way ANOVAs were computed to explore any relationship between ethnicity and the dependent variables. Results indicated a significant difference across ethnicity for engagement in sexual behaviors,  $F(4,204) = 5.62, p = .001$ . Tukey's HSD was used to determine the nature of the differences between the ethnic groups. This analysis revealed participants in the Other category reported engaging in fewer types of sexual behaviors ( $M = 1.95, SD = 1.35$ ) than Caucasian participants ( $M = 2.96, SD = 1.32$ ), African American participants ( $M = 3.03, SD = 1.42$ ) and Hispanic participants ( $M = 3.5, SD = 1.11$ ); the latter three groups did not significantly differ from each other. A significant difference was also found across ethnicity for substance use,  $F(4,204) = 3.85, p = .01$ . Tukey's HSD was used to determine the nature of the differences. This analysis showed participants in the Other ethnicity category reported engaging in less substance use and associated problems ( $M = 8.47, SD = 4.03$ ) than Caucasian participants ( $M = 13.94, SD = 8.66$ ) and Hispanic participants ( $M = 14.16, SD = 8.66$ ). African American participants ( $M = 10.66, SD = 6.74$ ) were not significantly different from any of the other three groups. There was no significant ethnic difference for GSI.

Correlations were run to determine the relationships between the other demographic variables and each dependent variable. These results are shown in Table 7. There was a significant negative relationship between income and GSI,  $r = -.2, p =$

.01. Results indicated a significant positive relationship between years of college and engagement in sexual behaviors,  $r = .28, p < .001$ . There was also a significant positive relationship between age and engagement in sexual behaviors,  $r = .33, p < .001$ . However, a correlation between age and years of college revealed a significant positive correlation between the two demographic variables ( $r = .84, p < .001$ ), so only one of these demographic variables, participant age, was utilized in further analyses.

Partial correlations were also run between the three dependent measures, after controlling for participant age, gender, ethnicity, and sexual orientation. Results showed a significant positive relationship between GSI and substance use ( $r = .26, p < .001$ ), showing individuals who scored higher on the GSI also reported more engagement in substance use. There was also a significant positive association between sexual behaviors and substance use ( $r = .46, p < .001$ ), indicating participants who reported more engagement in sexual behaviors also reported higher levels of engagement in substance use. These results are displayed in Table 8.

### *Relationships among Independent Variables*

#### *Independent and Demographic Variables*

Correlations were also executed between the twelve attachment subtypes (H&S and ASM) and the demographic variables. Participant gender was positively related to ASM parental secure attachment ( $r = .17, p < .05$ ), indicating females had higher levels of secure attachment. Gender was negatively related to ASM parental avoidant attachment ( $r = -.20, p < .01$ ), showing males reported higher levels of

avoidant attachment. Participant's sexual orientation was positively related to H&S parent attachment ( $r = .15, p = .03$ ), suggesting individuals who identified themselves as non-heterosexual (i.e., bisexual or homosexual) tended to report insecure attachment. Sexual orientation was negatively related to ASM parental secure attachment ( $r = -.27, p < .001$ ), meaning participants who identified themselves as heterosexual reported higher levels of secure attachment. Sexual orientation was positively associated with both parental avoidant ( $r = .26, p < .001$ ) and parental anxious-ambivalent ( $r = .19, p < .01$ ) attachments, meaning individuals who identified themselves as non-heterosexual had higher levels of parental avoidant and anxious-ambivalent attachments. Romantic secure attachment was negatively related to sexual orientation ( $r = -.16, p < .05$ ), indicating heterosexual participants reported higher levels of secure attachment. Romantic avoidant attachment showed a positive relationship to sexual orientation ( $r = .21, p < .01$ ), meaning non-heterosexual participants had higher levels of avoidant attachment (see Table 9).

#### *Relationships among Attachment Variables*

Correlations were run between the nine components of the Attachment Style Measure (ASM) and the three Hazan and Shaver (H&S) measures to determine whether these two instruments (ASM and H&S) were measuring the same underlying construct of attachment. As shown in Table 10, relationships between the H&S measures showed little association, with  $r$ 's ranging from .02 - .19. When each H&S measure was evaluated with its comparable ASM subtypes results were mixed, with  $r$ 's ranging from .36-.50. Given previous research has posited that these measures are

examining the same latent construct, the correlations should be in the .80 and higher range.

With regard to the ASM subtypes, results showed individuals who scored higher on secure attachment (regardless of attachment bond), tended to score lower on both avoidant and anxious-ambivalent attachment. Participants scoring high on avoidant attachment also scored high on anxious-ambivalent attachment, and vice versa. The strength of correlations between the avoidant and anxious-ambivalent attachment subtypes was high for parental attachment ( $r = .61$ ) and peer attachment ( $r = .52$ ) and moderate for romantic attachment ( $r = .37$ ). While past literature has conceptualized these two attachment styles as discrete constructs, results suggested these two subtypes may be tapping into a common underlying variable. These correlations held across attachment source. Participants who scored high on the secure attachment subscale scored low on both the avoidant and anxious-ambivalent subscales.

#### *Relationships among Categorical Attachment and Dependent Variables*

##### *GSI*

Separate ANOVA/ANCOVAs were computed to examine the relationship between attachment and GSI. This statistical analysis was chosen because the independent variable of interest was dichotomous in nature. It was predicted that participants with a secure parental attachment style would report lower levels on the GSI than participants with an insecure parental attachment style. Total family income was included as a covariate as it showed a significant correlation with GSI score.

Results indicated a significant difference between parental secure and insecure attachment for GSI score,  $F(1,154) = 6.36, p = .01$ , indicating participants who identified their parental bond as secure ( $N = 120, M = .70, SD = .58$ ) reported lower scores on the GSI than those who identified their parental attachment as insecure ( $N = 39, M = 1.05, SD = .63$ ) after controlling for total family income.

A factorial ANCOVA was executed to examine the relationship between peer attachment and GSI score. Again, it was predicted participants with a secure peer attachment would report lower GSI scores than those who identified an insecure peer attachment. Again, total family income was treated as a covariate. Results showed a significant difference between peer secure and insecure attachment for GSI score  $F(1,154) = 9.22, p = .003$ , meaning participants who have a secure peer attachment ( $N = 123, M = .69, SD = .58$ ) reported lower GSI scores when compared to individuals with an insecure peer attachment ( $N = 36, M = 1.09, SD = .78$ ), after controlling for total family income.

A third factorial ANCOVA was calculated to evaluate the relationship between romantic attachment and GSI score. It was predicted participants with a secure romantic attachment would report lower GSI scores than individuals with an insecure romantic attachment. Levene's test for homogeneity was significant,  $F(3,154) = 4.79, p = .003$ , suggesting error variances for the groups were unequal. Results suggested a significant difference between romantic secure and insecure attachment for GSI score,  $F(1,154) = 9.77, p = .002$ , indicating individuals with a secure romantic attachment ( $N = 97, M = .65, SD = .55$ ) reported lower GSI scores



than those with an insecure romantic attachment ( $N = 62$ ,  $M = 1.00$ ,  $SD = .74$ ), after controlling for total family income.

### *Sexual Behaviors*

Three factorial ANOVAs were computed to examine the relationship between parental, peer, romantic attachment and engagement in sexual behaviors. Based on earlier analyses, ethnicity was included as an independent variable due to its relationship with level of engagement in sexual behaviors. Age was included as a covariate as this demographic variable showed a significant relationship with engagement in sexual behaviors. With regard to peer attachment, results indicated a significant difference in engagement in sexual behaviors for participant ethnicity ( $F(8,200) = 6.86$ ,  $p < .001$ ), indicating Other participants ( $N = 19$ ,  $M = 1.78$ ,  $SD = .32$ ) reported less engagement in sexual behaviors than either African American ( $N = 38$ ,  $M = 3.26$ ,  $SD = .26$ ) or Hispanic participants ( $N = 32$ ,  $M = 3.60$ ,  $SD = .28$ ), after controlling for participant age. Caucasian participants were not significantly different from any of the three groups. There were no other significant main effects or interactions for parental or romantic attachment and sexual behaviors.

### *Substance Use*

Three factorial ANOVAs were computed to examine the relationship between parental, peer, romantic attachments and engagement in substance use. Gender and ethnicity were included as independent variables. Results showed a significant difference across level of substance use for participant ethnicity,  $F(1,192) = 4.10$ ,  $p =$

.008. This is consistent with earlier findings. No other significant main effects or interactions for parental, peer, or romantic attachment and substance use were found.

#### *Relationships between ASM Attachment and Dependent Variables*

With 27 correlations a Bonferroni Correction was employed to guard against chance findings. The adjusted  $p$  value was .002 (.05 divided by 27 = .002).

#### *ASM Attachment and GSI*

*Parental attachment.* A set of partial correlations was run to determine if parental attachment and GSI scores were related while controlling for family income. It was predicted parental attachment was associated with GSI score. Results indicated a significant negative relationship between parental secure attachment and GSI,  $r = -.29, p < .001$ . Avoidant parental attachment was positively related to GSI,  $r = .25, p = .002$ . Additionally, results showed a significant positive relationship between anxious-ambivalent parental attachment and GSI,  $r = .37, p < .001$  (see Table 11).

A hierarchical multiple regression was computed to further examine the relationship between three independent variables - secure, avoidant, and anxious-ambivalent parental attachment and the dependent variable - GSI score. This analysis also included one demographic variable, family income. All of the variables were entered into the analysis in a variety of ways. Results indicated that entering anxious-ambivalent parental attachment after family income (step 1), parental avoidant attachment (step 2), and parental secure attachment (step 3), anxious-ambivalent attachment remained a significant predictor of GSI (beta = .31,  $p = .001$ ). Family income also remained a significant predictor of GSI (beta = -.17,  $p = .02$ ). This

overall model was significant ( $F(6,152) = 5.95, p < .001$ ) and accounted for 16% of the variance. These values held across the following variation: 1. family income (step 1), parent secure attachment (step 2), parent avoidant attachment (step 3) and parent anxious-ambivalent attachment (step 4).

*Peer attachment.* A set of partial correlations was computed to determine if peer attachment and GSI score were related while controlling for family income. It was predicted peer attachment was associated with GSI. Results indicated a significant negative relationship between peer secure attachment and GSI,  $r = -.37, p < .001$ . Avoidant peer attachment was positively related to GSI,  $r = .33, p < .001$ . Additionally, results showed a significant positive relationship between anxious-ambivalent peer attachment and GSI,  $r = .36, p < .001$  (see Table 11).

A hierarchical multiple regression was computed to further examine the relationship between three independent variables - secure, avoidant, and anxious-ambivalent peer attachment and the dependent variable - GSI score. This analysis also included one demographic variable, family income. All of the variables were entered into the analysis in a variety of ways. Results indicated entering anxious-ambivalent peer attachment after family income (step 1), peer secure attachment (step 2), and peer avoidant attachment (step 3), anxious-ambivalent attachment remained a significant predictor of GSI score ( $\beta = .20, p = .03$ ). Family income also remained a significant predictor of GSI ( $\beta = -.16, p = .04$ ). This overall model was significant ( $F(6,152) = 6.84, p < .001$ ) and accounted for 18% of the variance. These values held across the following variation: 1. family income (step 1), peer avoidant

attachment (step 2), peer secure attachment (step 3) and peer anxious ambivalent attachment (step 4).

*Romantic Attachment.* A third set of partial correlations was computed to determine if romantic attachment and GSI were related while controlling for family income. It was predicted romantic attachment was associated with GSI. Results indicated a significant negative relationship between romantic secure attachment and GSI score,  $r = -.33, p < .001$ . Avoidant romantic attachment was positively related to GSI score,  $r = .37, p < .001$ . Additionally, results showed a significant positive relationship between anxious-ambivalent romantic attachment and GSI score,  $r = .32, p < .001$  (see Table 11).

A hierarchical multiple regression was computed to further examine the relationship between three independent variables - secure, avoidant, and anxious-ambivalent romantic attachment and the dependent variable - GSI score. This analysis also included one demographic variable, family income. All of the variables were entered into the analysis in a variety of ways. Four of a possible 6 models were significant. Results indicated entering anxious-ambivalent romantic attachment after family income (step 1), romantic secure attachment (step 2), and romantic avoidant attachment (step 3), anxious-ambivalent attachment remained a significant predictor of GSI (beta = .18,  $p = .04$ ). Romantic avoidant attachment also remained a significant predictor of GSI score (beta = .25,  $p = .03$ ). This overall model was significant ( $F(6,152) = 6.59, p < .001$ ) and accounted for 18% of the variance. These values held across the following variations: 1. family income (step 1), romantic

secure attachment (step 2), romantic anxious-ambivalent attachment (step 3) and romantic avoidant attachment; 2. family income (step 1), romantic avoidant attachment (step 2), romantic secure attachment (step 3) and romantic anxious-ambivalent attachment (step 4); 3. family income (step 1), romantic anxious-ambivalent attachment (step 2), romantic secure attachment (step 3), and romantic avoidant attachment (step 4).

#### *ASM Attachment and Sexual Behaviors*

*Parental, peer, and romantic attachment.* A series of partial correlations was run to determine if parental, peer, or romantic attachments and sexual behaviors were related while controlling for the appropriate demographic variable(s). It was predicted that parental, peer, and romantic attachment was associated with sexual behaviors. As can be seen in Table 12, all correlations between ASM subtypes and sexual behaviors were not significant.

#### *ASM Attachment and Substance Use*

*Parental, peer, and romantic attachment.* Partial correlations were run to determine if parental or peer attachments and substance use were related while controlling for the respective demographic variables of participant gender and ethnicity. As shown in Table 13, none of the correlations for parental or peer attachments and substance use were significant. Therefore, regression analyses were not computed.

#### *Mediation Analyses*

According to Baron and Kenny (1986), four conditions must be met to establish mediation: (a) attachment must be significantly related to substance use, (b) attachment must be significantly related to GSI score, (c) GSI score must directly predict substance use when attachment styles are in the equation, and (d) the contribution of attachment should substantially reduce after entering GSI score in a hierarchical regression analysis.

As noted earlier, GSI score and substance use were significantly related after controlling for demographic variables,  $r = .26, p < .001$ . Furthermore, GSI score showed a significant relationship with ASM romantic secure attachment ( $r = -.33, p < .001$ ), avoidant romantic attachment ( $r = .37, p < .001$ ), and anxious-ambivalent romantic attachment ( $r = .32, p < .001$ ). Additionally, GSI score was significantly related to substance use ( $r = .25, p = .002$ ). However, ASM attachment did not show any significant relationships with substance use. Therefore, a mediation analysis was not computed.

Also, a mediational analysis was not performed for GSI score and sexual behaviors because the correlation between these two dependent variables was not significant ( $r = .03, p = .70$ ).

#### *Colinearity among the Nine ASM Attachment Types*

After simple correlations were run for the ASM attachment subtypes, hierarchical regression analyses were utilized to examine the relationships between the ASM attachment subtypes and the dependent variables. However, the results indicated potential colinearity among the nine ASM subtypes. For example, with

respect to the GSI measure, all simple correlations between each ASM subtype and psychological distress were significant, and the betas for these variables were significant when entered separately. However, when the three ASM subtypes were entered into the regression analysis together, the betas for one or two subtypes were no longer significant. When the betas of predictor variables are significant when entered separately but not when each is entered last in the regression equation, this can signify potential colinearity among the ASM subtypes or there is one underlying or latent variable being measured by all of them.

The factorability of the nine ASM subtypes was further examined. Several well-recognized criteria for the factorability of variables were used. First, the correlations among the nine ASM subtypes were in the mid .20's to mid .70's, suggesting good factorability. Second, the Kaiser-Meyer-Olkin measure of sampling adequacy was .75, above the recommended value of .6, and Bartlett's test of sphericity was significant ( $N = 209$ ,  $\chi^2(36) = 912.92$ ,  $p < .001$ ). Finally, the communalities of the nine ASM subtypes varied from .36 to .67 (see Table 14), further confirming that each ASM subtype shared some common variance with one another. Given these overall indicators, the nine attachment subtypes were factor analyzed to examine any colinearity among the predictor variables and to look for underlying common relationships.

Principle axis factoring with varimax rotation was used because the primary purpose was to identify the latent variables that contributed to the common variance of ASM subtypes, excluding unique variance. The results yielded three factors that

exceeded an Eigenvalue of 1. The first factor had an Eigenvalue of 4.25 and explained 47% of the variance; the second factor had an Eigenvalue of 1.29 and accounted for 14% of the variance. A third factor had an Eigenvalue of 1.07 and accounted for 12% of the variance. The remaining 6 factors had Eigenvalues of less than .80. The two factor solution, which explained 63% of the variance, was retained primarily because of the difficulty of interpreting the third factor (unable to compute after 100 iterations) and also because of the ‘leveling off’ of Eigenvalues on the scree plot after two factors as well as the insufficient number of primary loadings. The rotated factor matrix for the two-factor solution can be seen in Table 15. The two extracted factors were labeled Important Other attachment (Factor 1) and Parent attachment (Factor 2) as the high loadings showed that Factor 1 consisted of the ASM subtypes associated with peer and romantic attachment and Factor 2 consisted of the ASM subtypes associated with parent attachment. Some ASM subtypes loaded on both factors. When this occurred, the lower factor loading was ignored for these variables (Tabachnick & Fidell, 2001).

Composite scores were created for the two factors by first converting the raw scores on each ASM subtype to z-scores. Then to get a Factor 1 score for each participant, the peer and romantic ASM avoidant and anxious-ambivalent scores were added, and the participant’s secure score was then subtracted from the combined ASM avoidant and anxious-ambivalent attachments score. Factor 2 scores were computed in the same way. For example, suppose a securely attached participant had the following z-scores for parent: 3.25 for ASM secure, -1.50 for ASM avoidant, and



-1.25 for ASM anxious ambivalent. The participant's Factor score would be -6.00  $[(-1.50) + (-1.25) - 3.25 = -6.00]$ . If another more insecurely attached participant had corresponding ASM z-scores of -3.25, 1.50, and 1.25, his/her Factor score would be 6.00  $[(1.50 + 1.25) - (-3.25) = 6.00]$ . Thus, lower scores indicated more secure attachment to Important Others (Factor 1) or Parent (Factor 2); higher scores indicated more insecure attachment to these figures.

### *Correlations and Regressions with Two-Factor Model*

#### *Two-Factor Model and GSI*

A partial correlation was computed to determine significant relationships between Important Other attachment, Parent attachment, and the dependent variable GSI score. The demographic variable of total family income was controlled for in the analyses due to its relationship with the dependent variable. Results showed that Important Other attachment was significantly positively related to GSI score ( $r = .48$ ,  $p < .001$ ), meaning that individuals with higher levels of insecure attachment to important others have higher scores on the GSI. GSI score was also significantly related to Parent attachment ( $r = .35$ ,  $p < .001$ ), again indicating individuals with higher levels of insecure parent attachment reported higher GSI scores (Table 16).

A hierarchical regression was run to further examine the relationship between GSI score, Important Other attachment, and Parent attachment. Again, the demographic variable of total family income was also included. This analysis was executed 2 times: once entering in Important Other attachment in the final step and once entering in Parent attachment in the final step. Results suggested that entering

Important Other attachment after total family income (step 1), and Parent attachment (step 2), Important Other attachment remained a significant predictor of GSI score (beta = .40,  $p < .001$ ). This overall model was significant ( $F(5,153) = 12.03, p < .001$ ) and accounted for 26% of the variance.

#### *Two-Factor Model and Sexual Behaviors*

Partial correlations were computed to examine the relationship between Important Other attachment, Parent attachment, and sexual behaviors. The demographic variables of participant age and ethnicity were included due to the significant relationships with the dependent variable. Results were not significant; therefore, regression analyses were not conducted.

#### *Two-Factor Model and Substance Use*

Partial correlations were run to evaluate the relationships between Important Other attachment, Parent attachment, and substance use. The demographic variables of participant gender and ethnicity were also included. Results showed a significant positive relationship between Important Other attachment and substance use ( $r = .17, p = .01$ ), meaning that participants with higher levels of insecure attachment to important others reported more engagement in substance use. Results also indicated a significant positive relationship between Parent attachment and substance use ( $r = .50, p < .001$ ), suggesting that individuals who reported higher levels of insecure attachment also reported more engagement in substance use.

A hierarchical multiple regression was computed to further examine the relationships between Important Other attachment, Parent attachment, and substance

use. Again, the demographic variables of participant gender and ethnicity were also included. This analysis was executed 2 times, once entering in Important Other attachment in the final step and once entering in Parent attachment in the final step. Results suggested that entering Important Other attachment after participant gender and ethnicity (step 1), and Parent attachment (step 2), Important Other attachment remained a significant predictor of substance use ( $\beta = .16, p = .04$ ). Participant gender also remained a significant predictor of substance use ( $\beta = -.22, p = .001$ ), meaning that males reported more substance use than females. This overall model was significant ( $F(6,202) = 3.69, p = .002$ ) and accounted for 7% of the variance.

#### *Correlations and Regressions using Overall Attachment*

Although the factor analysis yielded two distinguishable factors, the two factors were still correlated ( $r = .51$ ), suggesting that a general underlying factor still existed. Additionally, each of the 2 factors showed a significant correlation with the dependent variable when examined independently, but this relationship significantly weakened upon the addition of the other factor. To obtain a common underlying factor, each participant's Factor 1 and Factor 2 scores were added together to create a third factor, labeled Overall Attachment. This factor indicated the degree to which participants were securely or insecurely attached to these three important figures. The lower the participant's score on Overall Attachment, the more securely attached the participant was to these individuals.

#### *Correlations between Overall Attachment and Dependent Variables*

Partial correlations were computed to examine the relationships between Overall Attachment and the three dependent variables: GSI, sexual behaviors, and substance use. Results showed a significant positive relationship between Overall Attachment and GSI after controlling for family income,  $r = .49, p < .001$ , meaning that more insecurely attached participants endorsed higher levels of GSI. A second partial correlation was computed between Overall Attachment and engagement in sexual behaviors while controlling for participant age and ethnicity. Results were not significant. A third partial correlation was executed between Overall Attachment and substance use, controlling for participant gender and ethnicity. Results showed a significant positive relationship,  $r = .17, p = .01$ , suggesting that more insecurely attached participants reported more engagement in substance use (see Table 17).

#### *Hierarchical Multiple Regression*

A hierarchical multiple regression was computed to further examine the relationship between Overall Attachment and GSI score. This analysis also included the demographic variable of family income. Results showed that entering Overall Attachment (step 2) after entering the demographic variable (step 1); Overall Attachment remained a significant positive predictor of GSI score (beta = .49,  $p < .001$ ). This overall model was significant ( $F(4,154) = 14.83, p < .001$ ) and accounted for 26% of the variance.

A second hierarchical multiple regression was executed to further evaluate the relationship between Overall Attachment and engagement in substance use. This analysis also included two demographic variables: participant gender and ethnicity.

Results indicated that entering Overall Attachment (step 2) after the two demographic variables (step 1), Overall Attachment remained a significant positive predictor of engagement in substance use ( $\beta = .17, p = .01$ ). Participant gender also remained a significant negative predictor of substance use ( $\beta = -.22, p = .002$ ), meaning that males tended to report more engagement in substance use than females. This overall model was significant ( $F(5,203) = 4.37, p = .001$ ) and accounted for 8% of the variance.

#### *Mediational Analyses*

As noted earlier, GSI score and substance use were significantly related after controlling for demographic variables,  $r = .26, p < .001$ . Furthermore, GSI score showed a significant relationship with Overall Attachment ( $r = .49, p < .001$ ), GSI score was significantly related to substance use ( $r = .25, p = .002$ ), and Overall Attachment was significantly correlated with substance use ( $r = .17, p = .01$ ). Therefore, the conditions to execute a mediational analysis were met.

A hierarchical multiple regression was computed entering in four demographic variables (participant age, gender, ethnicity, and family income) first, Overall Attachment in step 2, and finally GSI score as step 3 using substance use as the dependent variable. Results indicated that GSI score was not a significant predictor of substance use ( $\beta = .13, p = .12$ ). However, Overall Attachment remained a significant predictor of substance use ( $\beta = .22, p = .01$ ). Additionally, participant gender was a significant predictor of substance use ( $\beta = -.28, p < .001$ ). This overall model was significant ( $F(7,151) = 6.01, p < .001$ ) and accounted for 18%

of the variance. Therefore, results showed that GSI score was not a mediator between Overall Attachment and substance use.

*Correlations among Overall Attachment and Sexual Behavior Items*

Given that the internal consistency of the sexual behavior measure did not achieve acceptable levels of reliability ( $\alpha = .65$ ), correlations between Overall Attachment and individual items on this measure were computed, while controlling for participant ethnicity and age. As shown in Table 18, results were not significant.

## CHAPTER 4

### DISCUSSION

This study, modeled after Cooper et al. (1998), examined the relationships between parental, peer, and romantic attachment styles, psychological distress, engagement in sexual behaviors, and engagement in substance use. The present study discovered important differences between the commonly used Hazan and Shaver (1987) categorical measure of attachment (H&S) and the continuous Attachment Style Measure (ASM) by Simpson (1990) which have implications for future research in this area. Overall, the analyses showed that individuals with a more secure attachment style (regardless of attachment bond), reported lower levels of psychological distress and lower levels of engagement in substance use. Attachment style was shown to have a direct and significant relationship with substance use, suggesting that psychological distress does not mediate this relationship. Perhaps most surprising was the lack of a relationship between attachment and engagement in sexual behaviors, as this finding contradicts past research (Brennan & Shaver, 1995; Cooper et al., 1998).

#### Comparing H&S and ASM

The H&S single-item categorical measure of attachment is perhaps the most well-known and widely used measure of attachment. The current study chose to keep with this tradition but also utilized the multi-item, continuous ASM in order to examine as much variability within this latent construct as possible. Results indicated that the ASM was a more accurate and sensitive indicator of attachment style, as this

measure was able to capture the variability within the differing attachment styles and could be appropriately utilized in more types of statistical analyses. These qualities are evidenced by the significant relationships shown between ASM attachment, psychological distress, and substance use, whereas the H&S measure failed to show significant associations between attachment and substance use. In addition, the H&S measure of attachment did not show significant correlations among the three attachment bonds (parent, peer, and romantic) and exhibited moderate associations to the ASM (Hypothesis 2). Conversely, the ASM had moderate to high correlations between the three attachment bonds (Hypothesis 1).

The observed differences found between the categorical and continuous measures of attachment could be due to aggregation (Epstein, 1983). Measures that consist of one item generally exhibit problems with test-retest reliability and construct validity. In support of this argument specifically for the H&S measure, Baldwin and Fehr (1995) performed a meta-analysis of participants' responses to this single item instrument over time. The researchers determined that about 30% of participants changed their response from one measurement time to another, indicating that this measure may not be tapping into the stable construct of attachment. Epstein further posited that single-item measures are generally narrow in scope and, therefore, are unable to effectively evaluate a broader concept with multiple facets, such as attachment. Single-item measures are also not able to capture variability within these concepts and subsequent analyses are, therefore, limited. Conversely, the ASM's multi-item design and Likert-type scale within these items provided more



opportunities to capture the various aspects of attachment, as well as the degree to which a participant identified with these aspects. These qualities allowed for increased variability within the attachment score and, consequently, broadened the possible analyses and conclusions.

While the ASM showed sensitivity and variability in the current study and was a better measure of attachment styles when compared to the H&S, the ASM has reliability issues that need to be examined. The alpha coefficients for each of the three subscales, as reported by previous studies, are generally below the accepted standards of .80 or higher. Simpson (1990) reported internal consistencies of .51 for secure style, .59 for anxious-ambivalent style, and .79 for avoidant style. Additionally, Sperling et al. (1996) reported Chronbach alphas of .42 for secure style, .79 for anxious-ambivalent style, and .80 for avoidant style. The internal consistencies of the ASM subtypes in the current study were slightly higher than those in previous studies, with internal consistencies ranging from .71-.77 for secure, .77-.82 for avoidant, and .60-.75 for anxious-ambivalent style (depending on attachment bond). However, these values still fall below the accepted standard of .80 or higher, suggesting that the ASM subtypes need further evaluation.

Further, there are questions regarding the construct validity of the ASM. Simpson (1990) reported that he constructed the ASM decomposing the three H&S (1987) vignettes (one for secure, avoidant, and anxious-ambivalent) into 13 separate sentences and attaching each to a 7-point Likert-type scale. Carver (1997) raised concerns about this method of test construction in that Simpson did not utilize any

empirical rationale during the formation of these sub-types. As noted earlier, the internal consistency reliabilities for the three ASM subtypes as reported by Simpson, were less than desirable, especially with regard to secure and anxious-ambivalent attachment styles. These low alphas suggest that the subtypes are not examining a single aspect of attachment and may be measuring multiple qualities of attachment or another, unrelated, variable.

A possible reason for these less than acceptable internal consistencies may be related to the issue of the ASM having three separate subtypes. Simpson (1990) performed a factor analysis on the 13 attachment items contained in the ASM. This analysis revealed 2 dimensions: secure-avoidant and anxious-nonanxious. However, Simpson decided to retain the 3 separate attachment styles for the following reasons: findings did not significantly differ based on the number of attachment styles included in the analyses (2 versus 3) and the strong theoretical reasons for attempting to identify 3 distinct attachment styles based on past research. Simpson noted that both the secure and the anxious-ambivalent subtypes exhibited less than desirable reliabilities and results should be interpreted with this in mind. The current study also performed a factor analysis due to the multi-collinearity between the nine ASM subtypes. Results from this analysis revealed a single dimension of secure-insecure attachment. While the results from the current study's factor analysis differed from Simpson's conclusions, both these studies suggest that the attachment styles of secure, avoidant, and anxious-ambivalent may not be three separate and discrete constructs, as is widely posited in the attachment literature (Ainsworth et al., 1978).

Of particular note was the strength of relationships between avoidant and anxious-ambivalent attachment styles, further suggesting that these two styles are representing a common attachment type.

Given the difficulties that were exhibited in the current study with both the H&S and the ASM attachment measures, including limited utility with the H&S, the less than desirable internal consistency in the ASM subtypes, the multicollinearity among the subtypes, and the questions about the construct validity of the ASM, greater attention and consideration needs to be given to the selection, utilization, and interpretation of these instruments.

#### Attachment and Psychological Distress

As mentioned previously, attachment has been defined as the process through which people develop emotional bonds with others (Newman & Newman, 2006). The first attachment bond that most individuals make is to a primary caregiver, which is often a parent. Through repeated patterns of interactions between the parent and child, he/she can develop three different attachment styles, as outlined by Ainsworth et al. (1978). First, a child can develop a secure attachment style if he/she is confident that the parent will be both appropriately responsive to the child's needs and consistent. A second type of attachment, avoidant, can develop if the child has no confidence that the parent will be responsive to the child's needs. This child has likely been met with rejection in the past and has developed strategies to live his/her life without depending on an attachment figure. Anxious-ambivalent attachment likely develops in response to a caregiver's inconsistent responding to a child's needs. This

inconsistency leads to a child being very sensitive and aware of the caregiver's responses, being "on alert" for signs of rejection. While attachment bonds are often first created between an infant and primary caregiver/parent, attachments are formed with many figures over the course of an individual's life. Other important attachment figures include close friends and romantic partners. Previous research has indicated that the attachment bonds created in post-infant years are often similar to the initial attachment bond made with a parent (Fraley & Davis, 1997; Hazan & Shaver, 1994; Hazan & Zeifman, 1994).

Affect regulation, for the purpose of the current study, was defined as level of psychological distress (Cooper et al., 1998). Previous research has posited that one's ability to regulate emotions is developed through interactions with caregivers. Therefore, one's attachment to these caregivers plays an important role in the development of affect regulation strategies (Bowlby, 1969/1982; Calkins & Hill, 2007; Mikulincer & Florian, 2004; Mikulincer et al., 2003; Shaver & Mikulincer, 2007). The ability to appropriately manage emotions has many implications, including being able to tolerate negative emotions (Mikulincer & Orbach, 1995), coping with stressful situations (Mikulincer et al., 1993), and lower levels of psychopathology (Kobak & Sceery, 1988).

Based on previous research, it was hypothesized that higher levels of insecure attachment style would be positively correlated with level of psychological distress (Hypothesis 3). This was supported in the current study, as results showed that higher levels of insecure attachment were associated with higher levels of psychological

distress. Additionally, the magnitude of this relationship lends strength to the argument that the ability to adaptively regulate emotions is a learned behavior that is related to one's attachment. Furthermore, it seems that one's ability to manage affect can develop as a result of a secure attachment to any important figure.

Past studies have examined parent, peer, and/or romantic relationships and separately found evidence that secure attachments in these relationships were associated with lower levels of psychological distress (Cooper et al., 1998; Feeny, 1995; Kerns, Abraham, Schlegelmilch, & Morgan, 2007; Mikulincer et al., 2003; Nada Raja et al., 1992). In the present study, factor analysis revealed a single factor, "Overall attachment," suggesting that there are minimal differences between the various attachment bonds. This is inconsistent with some previous research that suggests parental attachment is the most important attachment bond and shows higher associations with variables of interest compared to peer attachment (Greenberg et al., 1983; Nada Raj et al., 1992). However, the participants who took part in the current study were older than those represented in previous research and are transitioning from early to late adolescence (Newman & Newman, 2006). A major developmental task during this stage is to form a stronger sense of self-identity and establish autonomy from parents. Consequently, different attachment bonds may become more evenly distributed. Based on the findings that attachment bonds are similar, one can posit that an individual can develop adaptive coping skills later in life through a secure bond with a non-caregiving figure, such as a peer, romantic partner, or perhaps a therapist.

While the current study, as well as previous research, has found a strong relationship between attachment and level of psychological distress, there are questions regarding the appropriateness of using a measure of psychological distress to represent affect regulation. Currently, no established measure of affect regulation exists. Consequently researchers have utilized alternative measures that generally examine one's inability to manage emotions, assuming that this is the key concept of affect regulation. However, some authors have suggested that affect regulation encompasses more than one's level of psychological distress (John & Gross, 2007). For example, Mikulincer et al. (1993) suggested that affect regulation was also related to one's repertoire of coping strategies, and Kobak and Sceery (1988) posited that affect regulation was related to one's self-esteem and self-worth. Clearly, more attention needs to be given to the concept of affect regulation in order to develop more comprehensive and accurate measures of this latent variable to ensure that all aspects are being evaluated.

#### Attachment and Risky Behaviors

While attachment is a central aspect of an individual's functioning throughout life, there tends to be a shift in concept of attachment during adolescence. With regard to late adolescence (18-24 years), one's parent, peer, and romantic attachments can serve as important reference points during the development of self-concept, identity, and values. Additionally, the continuation of increasing affect regulation strategies is often present during this developmental stage (Mullin & Hinshaw, 2007). Depending on one's attachment style, notably avoidant or anxious-ambivalent, an individual can

tend to engage in certain types of behaviors, perhaps in an attempt to manage emotions (Sher & Grekin, 2007). These behaviors, specifically engagement in sexual activities and alcohol/illicit drug use, can be viewed as part of the normative developmental process (Baumrind, 1987); however, some researchers conceptualize these behaviors as problematic (Brennan & Shaver, 1995; Caspers et al., 2005; Cooper et al., 1998).

### *Sexual Behavior*

Previous studies have consistently shown that individuals with more secure attachment reported less engagement in problematic sexual behaviors, such as having sexual intercourse with a stranger (Brennan & Shaver, 1995) or engaging in higher risk sexual activities, such as anal sex (Cooper et al., 1998). Therefore, it was expected that individuals with higher levels of secure attachment would engage in fewer sexual behaviors (Hypothesis 4). Results from the current study did not support this hypothesis, as there were no significant associations between attachment style and engagement in sexual behaviors.

There are a few possible reasons for the lack of relationship between attachment and engagement in sexual behaviors. First, the measure that was utilized for the current study was taken from Cooper et al. (1998), who developed the measure for that particular study and, therefore, did not have established psychometrics for this instrument. The current study discovered a less than desirable internal consistency for this measure ( $\alpha = .65$ ), with one item showing a negligible relationship to the other items ( $r = .17$ ). A second possible reason for the lack of association between

attachment and engagement in sexual behaviors is the concept of social desirability. While participants were informed that their participation in the study was anonymous, individuals still have a tendency to minimize their engagement in activities that could be viewed negatively by others (Franzoi, 2006). For example, a press release from the Center for Disease Control in March, 2008, estimates that one in four teenage girls (between the ages of 15-19) had a sexually transmitted disease. In the current study, only about 7% of the females surveyed admitted to ever having a sexually transmitted disease. In comparison, the Center for Disease Control (2008) reported just over half of girls ages 15-19 years admitted to engaging in sexual intercourse. This number is consistent with the current study, with approximately 60% of the sample reporting past sexual intercourse. Additionally, the National Center for Health Statistics (2002) indicated that 55% of 15- to 19-year-olds reported engaging in oral sex (which increased to 70% among 18- and 19-year-olds). This percentage is fairly consistent with the current study in which 78% admitted to this behavior. It seems possible that participants viewed having an STD as a more socially undesirable quality than engaging in oral sex or sexual intercourse. However, in light that the sample was consistent with national survey results in two of three areas, it is possible that attachment and sexual behaviors are not significantly related constructs for this sample. Given the inconsistent findings, drawing conclusions regarding the nature of the relationship between attachment and engagement in sexual behaviors is tenuous, as further research needs to be conducted.



### *Substance Use*

Engagement in substance use is another risky behavior that is exhibited during adolescence and later years. Previous studies examined the relationship between attachment and substance use within late adolescence with similar conclusions. Individuals with secure attachment engaged in less substance abuse than those with insecure attachment (Brennan & Shaver, 1995; Caspers et al., 2005; Cooper et al., 1998; Kostecky, 2005; Sher & Grekin, 2007). Based on these results, it was hypothesized that participants with higher levels of secure attachment would report less engagement in substance use (Hypothesis 5). This hypothesis was supported in the current study. This may be related to the idea that individuals with a secure parental bond respect and value their parents' advice and rules regarding activities such as alcohol and/or drug use. Alternatively, securely attached individuals may not feel the need to escape or avoid problems, as suggested by Brennan and Shaver (1995), in part due to their ability to effectively manage emotions.

While substance use measure was also taken from the Cooper et al. (1998) study with little established psychometric properties, the present study found a nearly acceptable internal consistency, suggesting that this measure may provide a more accurate representation of substance use and related problems than the sexual behaviors measure. Key differences between these measures were the items concerning the frequency of problems related to substance use that a participant experienced over a six-month period. An additional aspect could be the perceived

acceptability of substance use (particularly alcohol) among college-aged individuals, thereby decreasing the tendency to respond in a socially desirable manner.

### Psychological Distress and Risky Behaviors

As stated previously, research has shown that individuals with a secure attachment style tend to be better able to manage their emotions compared to individuals with an insecure attachment style. Studies have also shown that individuals with a secure attachment tend to engage in less risky behaviors, such as sexual activity and substance use. Some of these researchers have posited that the negative relationship between secure attachment and engagement in risky behaviors is due to one's ability to manage emotions appropriately as opposed to "numbing" or "distancing" oneself from problems and emotions (Mikulincer et al., 2003; Mullin & Hinshaw, 2007; Sher & Grekin, 2007). Therefore, it was hypothesized that higher levels of psychological distress would be associated with higher levels of engagement in sexual behaviors (Hypothesis 6). This hypothesis was not supported, as the two variables showed no significant relationship. However, the lack of significance may be due, in part, to the limitations of the measure and social desirability described above. Some researchers have posited that engagement in multiple sexual behaviors in and of itself is evidence of psychological distress (e.g., Brennan & Shaver, 1995). Given that results from the current study show no relationship between these variables, future research should take care when drawing conclusions about affect regulation if using a measure of engagement in sexual behaviors as an indicator.

It was also hypothesized that higher levels of psychological distress would be related to higher levels of engagement in substance use (Hypothesis 7). This hypothesis was upheld, suggesting that individuals with less ability to manage their emotions engaged in more substance use. There is no published literature to date that has examined this relationship; therefore, results should be interpreted with some caution. However, preliminary conclusions can be drawn that support past researchers' theories that engagement in substance use represents an attempt to manage one's emotions using external, temporary, and maladaptive means (e.g., Sher & Grekin, 2007).

#### Attachment, Psychological Distress, and Risky Behaviors

While it was hypothesized that affect regulation mediated the relationship between attachment and engagement in sexual behaviors (Hypothesis 8), this hypothesis was not supported based on the non-significant relationships between sexual behavior and the other variables. Based on the significant relationships between attachment and affect regulation, attachment and engagement in substance use, and affect regulation and substance use, it was hypothesized that affect regulation (as defined by level of psychological distress) would be a mediator between attachment and substance use (Hypothesis 9). This mediating model was tested by Cooper et al. (1998). Their study showed a partial mediation of the relationship between attachment and engagement in both sexual behaviors and substance use, specifically for depression and hostility. The current study failed to find a mediating relationship between attachment, affect regulation, and substance use. While

attachment remained a significant predictor of engagement in substance use, affect regulation did not account for any unique variance within this variable. Gender proved to also be a significant predictor of level of engagement in substance use, with males reporting higher levels of engagement than females.

There are several possible reasons for these discrepant findings. First, the Cooper et al. (1998) study had three separate attachment styles: 56% secure, 21% avoidant, and 23% anxious-ambivalent. The mediation proved most successful for the avoidant vs. anxious-ambivalent analyses, which could not be performed in the current study due to small numbers of avoidant and anxious-ambivalent participants (discussed below as a limitation). Additionally, the sample that comprised the current study differed from the Cooper et al. study in ethnic distribution and age. Second, the previous study had an  $N = 1600$ , while the current study had 209 participants, as more participants allow for greater variability within scales and increase chances of finding a significant difference. Third, the Cooper et al. study examined the eight subscales of the Brief Symptom Inventory (BSI) as opposed to utilizing the overall measure of psychological distress. However, internal consistency coefficients for these subscales in the current study exceeded .80, raising questions about the distinctiveness of the eight subscales. To date, only the current study and the Cooper et al. study have examined the potential mediating role of emotional regulation in the relationship of attachment and engagement in risky behaviors. Since results from these two studies differ, more research clearly needs to be conducted in this area.

### Significant Findings with Demographic Variables

In addition to the significant relationships established between the independent and dependent variables, several other important correlations were discovered between demographic and dependent variables. Total family income exhibited a noteworthy association to level of psychological distress, indicating that participants with higher family income reported better affect regulation. Age was significantly, positively related to engagement in sexual behaviors, as older participants reported higher levels of involvement in various sexual activities. Ethnicity also showed a relationship with sexual behaviors: individuals who identified themselves as Other reported less engagement in sexual behaviors than the Caucasian, Hispanic, or African American ethnic groups. Engagement in substance use also exhibited associations with demographic variables. Differences were noted for ethnicity, in that individuals in the Other category reported less engagement in substance use than Caucasian or Hispanic participants. Finally, participant gender was significantly related to substance use, indicating that males reported higher levels of substance use than females.

### Overarching Implications

The inconsistent associations between the ASM and H&S measures of attachment indicate the need for further attention and investigation of these instruments. The H&S' single-item questionnaire has many problems, including limited utility in analyses, limited generalizability, and limited variability. Additionally, the current study determined that this measure did not show strong

relationships with the ASM, suggesting that the H&S may be too limited in its scope. While the ASM exhibited many advantages over the H&S, it also had weaknesses. Perhaps most notably were the moderate correlations between secure and the two insecure subscales, as well as the high correlation between the two insecure subscales of avoidant and anxious-ambivalent. The relationship between the avoidant and anxious-ambivalent attachment subscales suggests that these two types may not be discrete constructs as is outlined in attachment theory (Ainsworth et al., 1978).

The three separate types of attachment were developed by Ainsworth et al. (1978) based on observations of behavior in the “strange situation.” Therefore, conducting observations in addition to self-report may produce a more complete and accurate picture of one’s attachment style. An alternative method that may also produce more accurate and comprehensive results involves conducting semi-structured interviews, such as the Adult Attachment Interview (AAI) developed by Main, Kaplan, and Cassidy (1985), which examines one’s attachment to a primary caregiver during childhood as well as current functioning. Previous research has shown little correlation between self-report measures of attachment and interview data (Allen, Hauser, & Borman-Spurrell, 1996), further suggesting that the self-report measures are not accurately examining the attachment construct. While interviews have clear advantages over self-report, including the ability to explore and clarify a participant’s responses, the AAI does not currently have a consistent scoring system. In order for this measure to be used widely and produce results comparable across studies, a standardized scoring system is needed.

Overall, results from the current study were consistent with previous research. The present study showed that a securely attached individual experiences significantly less psychological distress and reported less engagement in substance use. Higher levels of psychological distress were associated with higher levels of substance use, but this relationship was not significant once attachment was included. The current study failed to find any association between attachment and engagement in sexual behaviors, which is inconsistent with previous findings (Cooper et al., 1998).

The relationship between attachment and emotional regulation/psychological distress supports previous literature and reinforces the concept that one develops affect management strategies through appropriate modeling. The lack of distinction between the various attachment bonds indicates that one can develop these strategies through a secure attachment with any important figure, such as a teacher, coach, pastor, or therapist. This provides a more hopeful prognosis for individuals who did not come from a nurturing and consistent family and, thereby, did not have the opportunity to see and internalize healthy emotion regulation skills. The strength of the relationship between attachment and emotion regulation highlights the vital importance of having a secure attachment bond. Given that emotions, both positive and negative, are a part of daily life, one's ability to manage these affective experiences is frequently tested. An inability to effectively deal with these affective states can result in many negative consequences, including lack of self-esteem (Cooper et al., 1998), increased levels of psychopathology (Leas & Mellor, 2000),

problems in relationships (Brennan & Shaver, 1995), and engagement in risky behaviors (e.g. Caspers et al., 2005; Cooper et al.; Kostecky, 2005; Leas & Mellor).

The relationship between attachment and affect regulation also has implications for psychotherapy, in light of the fact that this association held regardless of attachment bond. Inherent to many psychological theories, such as interpersonal process, is the concept that the therapist serves as an important figure to the client. The value that the client places on this therapeutic relationship assists in him/her receiving feedback and allowing for corrective experiences to take place within the therapeutic alliance. Therefore, one can posit that the client forms an attachment to the therapist much in the same way that this person forms attachments with other important figures. From an interpersonal perspective, nurturing this bond in such a way that the client is able to form a secure attachment to the therapist, thereby experiencing a corrective experience, would serve as the basis for developing emotion regulation and coping skills. Other perspectives, such as cognitive-behavioral theory, place less emphasis on the therapist-client relationship and focus more on skill building. While this therapy has proven effective, results from the current study suggest that allowing a client to also establish a secure attachment to the therapist could enhance the development of coping skills.

The relationship between attachment and substance use also supports previous research in this area. The current study utilized a substance use measure consistent with the Cooper et al. (1998) study, which was originally developed by taking questions from various sources. Other previous research in this area has utilized a



small number of dichotomous questions to obtain information regarding substance use. While the data seem consistent regarding the relationship between attachment and substance use, the field would benefit from a well-validated and reliable substance use questionnaire.

The lack of relationship between attachment and engagement in sexual behaviors is somewhat inconsistent with previous research. While Cooper et al. (1998) found significant differences in the level of engagement in sexual behaviors based on attachment style, Brennan and Shaver (1995) did not consistently find significant relationships between these variables. In the current study, the measure of sexual behaviors was taken from the Cooper et al. study, and this measure was also developed using questions from multiple sources. The measure itself lacked a desirable level of internal consistency and may not have accurately or comprehensively examined the construct of engagement in sexual behaviors. Additionally, social desirability seemed to have an impact on the results, as some frequencies were consistent with national data while other frequencies fell well below what was expected based on national trends. While these are two possible explanations for a lack of relationship between attachment and sexual behaviors, it is also possible that these two constructs are not significantly associated, as was found in the current study. Future research exploring the relationships between attachment and engagement in sexual behaviors would likely benefit from developing a solid measure as well as including an instrument to assess level of social desirability.

The lack of mediation for emotion regulation between attachment and engagement in substance use is inconsistent with the Cooper et al. (1998) study. As noted earlier, there were many differences between the samples (for example, race distribution and sample size) as well as slightly different analyses. Given that the current study and the Cooper et al. study are the only two to date that have examined affect regulation as a mediator between attachment and substance use, more research needs to be done in order to gain a clearer understanding of the interplay between these variables.

#### Advantages and Limitations

A clear advantage over previous studies was the utilization of both the widely known H&S (1987) categorical measure of attachment as well as the continuous ASM (Simpson, 1990) in the current study. By asking participants about their attachments in two different manners, the present study was able to determine that these two instruments are not measuring the same construct. This finding has significant implications for future research as well as past studies in this area. Furthermore, the use of a continuous attachment measure allowed the current study to question and examine the proposed distinctiveness of the three attachment styles. An additional advantage of the current study was that it evaluated three separate attachment bonds (parent, peer, romantic). Previous research has generally examined only one of these bonds. Results from the current study suggest that it is appropriate to test a single attachment bond as there were no significant differences observed between these different relationships. Also, the current study attempted to show that

affect regulation mediated the relationship between attachment and engagement in risky behaviors, which was a replication of the Cooper et al. (1998) study. Even though the current study did not show mediation, the results make a significant contribution to the growing literature in this area.

A main limitation of the current study was the difference between the distributions of participants across the three attachment styles compared to the expected distribution. Previous research indicated the following distribution for the Hazan and Shaver attachment measure: 60% secure attachment, 25% avoidant attachment, and 15% anxious-ambivalent attachment (Campos et al., 1983). The current study exhibited a distribution of 77% secure, 3% avoidant, and 20% anxious-ambivalent on the H&S measure of parental attachment. While these values fluctuated slightly for peer and romantic attachment, the avoidant category remained well below expected values. The small number of avoidant participants resulted in the current researcher having to combine the avoidant and anxious-ambivalent participants into one category, thereby further reducing the variability within this measure.

A second limitation of the present study is the use of largely unvalidated measures to assess for sexual behaviors and substance use. While the measures were taken from previous studies, the internal consistency reliabilities obtained in the current study suggest the need for the development of more consistent measures. Relatedly, the use of a measure of psychological distress to determine affect regulation limits the generalizability of the results, as the concept of affect regulation

tends to encompass more aspects than just psychological distress. Future research that strives to develop a measure of affect regulation would be greatly beneficial to this area of study.

Additionally, there was an uneven distribution of participant gender, race, and sexual orientation within the current study, as is often the case in social science projects. Given that each of these demographic variables showed a significant relationship to at least one of the dependent variables, future researchers would be wise to examine more diverse samples to further explore what impact these characteristics have on affect regulation, sexual behaviors, and substance use. Given that the distribution of these demographic variables, particularly race and sexual orientation, are uneven in the general population, oversampling may need to be done in these groups to adequately examine potential associations. Missing values in the demographic variable of total family income also impacted the present study in that some analyses were run with less than the full number of participants. However, it should be noted that issues with uneven distribution of participant characteristics and missing data is a fairly common burden of social science projects, particularly when participation is voluntary.

Finally, as is the case with any correlational study, conclusions regarding cause and effect cannot be drawn. The potentially sensitive nature of the constructs being examined, particularly with regard to sexual behaviors and substance use, may have influenced some participants to respond in socially desirable ways, thus skewing the data on these variables. Additionally, given that all the instruments utilized in the

present study were self-report, there is a possibility that shared method variance affected the results.

Future research in this area can account for the current study's limitations by utilizing diverse (such as questionnaires and interview) and well-validated instruments to examine the areas of interest. Given that there currently are no sound measures for the constructs of affect regulation, sexual behaviors, and substance use, it seems clear that scientists must first embark on developing instruments to appropriately test these areas.

Table 1

*Descriptive Statistics for the Continuous Demographic Variables*

	Age	Family Income	Years Attended
N	209	159	209
Mean	20.15	93,384	2.23
Std. Error of Mean	.19	6,528	.08
Std. Deviation	1.70	82,309	1.16
Skewness	.74	3.33	.34
Std. Error of Skewness	.17	.19	.17
Kurtosis	-.39	13.6	-1.36
Std. Error of Kurtosis	.34	.38	.34
Variance	2.90	6774744288	1.34
Range	18-24	10,000-500,000	1-4
Percentile			
25	19	48,000	1
50	20	80,000	2
75	21	100,000	3

Table 2

*Descriptive Statistics of Continuous Independent Variables*

	Parental Secure	Parental Avoidant	Parental Anxious	Peer Secure	Peer Avoidant	Peer Anxious	Romantic Secure	Romantic Avoidant	Romantic Anxious
N	209	209	209	209	209	209	209	209	209
Mean	27.65	8.52	8.33	27.78	8.87	9.11	25.68	11.26	11.31
Std. Error of Mean	.38	.32	.30	.34	.32	.28	.43	.41	.38
Std. Deviation	5.42	4.58	4.29	4.9	4.66	4.10	6.22	5.97	5.45
Skewness	-.88	1.04	.96	-.43	1.17	.53	-.47	.71	.49
Std. Error of Skewness	.17	.17	.17	.17	.17	.17	.17	.17	.17
Kurtosis	.86	.59	.17	-.32	1.21	-.50	-.30	-.27	-.60
Std. Error of Kurtosis	.34	.34	.34	.34	.34	.34	.34	.34	.34
Variance	29.36	20.93	18.38	23.98	21.74	16.79	38.69	35.65	29.67
Range	8-35	4-26	4-23	13-35	4-25	4-20	8-35	4-28	4-26
Percentile									
25	24	4	5	24	5	5	21	7	7
50	28	7.5	7	28	8	8	27	10	10
75	32	11	11	32	11	12	30	15	15.5

*Note.* N = 209

Table 3

*Descriptive Statistics of Continuous Dependent Variables*

	Global Severity Index	Sexual Behaviors- Total	Substance Use-Total
N	209	209	209
Mean	.78	2.96	12.88
Std. Error of Mean	.04	.09	.57
Std. Deviation	.63	1.36	8.19
Skewness	1.43	.09	1.55
Std. Error of Skewness	.17	.17	.17
Kurtosis	1.93	-.71	2.42
Std. Error of Kurtosis	.34	.34	.34
Variance	.40	1.84	67.13
Range	0-3.36	1-6	5-48
Percentile			
25	.32	2	7
50	.60	3	10
75	1.05	4	17.5



Table 4

*Descriptive Statistics for Categorical Variables*

Attachment	n	Secure	Avoidant	Anxious
HS Parental	209	77%	3%	20%
Black	38	84%	3%	13%
Hispanic	32	81%	6%	13%
White	120	75%	3%	22%
Other	19	63%		37%
Male	54	77%	2%	21%
Female	155	76%	4%	20%
Heterosexual	194	78%	2%	20%
Homosexual	8	63%	25%	12%
Bisexual	7	43%	29%	28%
HS Peer	209	80%	2%	18%
Black	38	82%		18%
Hispanic	32	81%	3%	16%
White	120	81%	2%	17%
Other	19	74%	5%	21%
Male	54	81%	2%	17%
Female	155	80%	2%	18%
Heterosexual	194	80%	2%	18%
Homosexual	8	100%		
Bisexual	7	71%	15%	14%
HS Romantic	209	61%	5%	34%
Black	38	53%	5%	42%
Hispanic	32	56%	3%	41%
White	120	67%	6%	27%
Other	19	53%	5%	42%
Male	54	65%	4%	31%
Female	154	60%	6%	34%
Heterosexual	194	62%	5%	33%
Homosexual	8	88%		12%
Bisexual	7	14%	29%	57%

Table 5

*Percentages of Sexual Behaviors*

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Sexual Behavior	Yes	No
Had sex	68%	32%
Had sex with stranger	20%	80%
Had oral sex	76%	24%
Had anal sex	21%	79%
Contracted STD	5%	95%
Pregnant	7%	93%

---

*Note.*  $N = 209$

Table 6

*Percentages of Substance Use*

Substance Use	Yes	No
Ever drank alcohol	92%	8%
Ever used marijuana	46%	54%
Ever used cocaine	11%	89%
Ever used LSD	5%	95%
Ever used angel dust/PCP	1%	99%
Ever used ecstasy	10%	90%
Ever used methamphetamines	3%	97%
Ever used prescription drugs	20%	80%
Ever used inhalants	4%	96%
Ever used heroin		100%
Ever sold drugs	7%	93%

*Note.*  $N = 209$

Table 7

*Correlations between Demographic and Dependent Variables*

	Age	Family Income	Years college	Gender	Sex Orient	GSI	Sex Beh	Sub Use
Age	---							
Family Income	-.008	---						
Years college	.84***	-.04	---					
Gender	.06	-.07	.09	---				
Sex Orient	.03	.05	.02	.07	---			
Global Severity Index	.05	-.20*	.03	.08	-.01	---		
Sex Beh	.33***	.11	.21**	-.05	.10	.04	---	
Sub Use	.09	.11	-.02	-.22**	.08	.22***	.44***	---

*Note.* \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table 8

*Correlations between Dependent Variables Controlling for Age, Gender, and Ethnicity*

	GSI	SB	SU
GSI	---		
SB	.04	---	
SU	.26***	.43***	---

*Note.* \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table 9

*Correlations between Demographic and Attachment Variables*

	Age	Gender	Ethnicity	Sexual Orientation	Family Income	Years of College
H&S Parent	.08	.02	.10	.15*	-.04	.06
H&S Peer	-.02	.02	.03	-.04	-.05	-.004
H&S Romantic	-.03	.04	-.03	.05	-.007	-.04
Parental Secure	-.08	.17*	-.10	-.27***	.10	-.04
Parental Avoidant	.08	-.20**	.11	.26***	-.01	.04
Parental Anxious	.12	-.004	.12	.19**	-.02	.01
Peer Secure	-.10	.06	-.01	-.02	.11	-.07
Peer Avoidant	.09	-.11	.02	.07	-.12	.10
Peer Anxious	.11	-.06	.01	.02	-.04	.08
Romantic Secure	.01	-.02	.05	-.16*	.09	.03
Romantic Avoidant	.07	.02	-.10	.21**	-.12	.06
Romantic Anxious	.06	.07	-.11	.11	-.10	.02

*Note.* \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table 10

*Correlations among Attachment Subtypes*

	HS Parent	HS Peer	HS Romantic	Parental Secure	Parental Avoidant	Parental Anxious	Peer Secure	Peer Avoidant	Peer Anxious	Romantic Secure	Romantic Avoidant
HS Parent	–										
HS Peer	.016	–									
HS Romantic	.193**	.06	–								
Parental Secure	-.38***	-.06	-.17*	–							
Parental Avoidant	.44***	.09	.20**	-.71***	–						
Parental Anxious	.36***	.09	.19**	-.59***	.61***	–					
Peer Secure	.03	-.38***	-.11	.36***	-.33***	-.38***	–				
Peer Avoidant	.08	.39***	.17*	-.31***	.39***	.36***	-.73***	–			
Peer Anxious	.05	.44***	.15*	-.23**	.25***	.34***	-.60***	.52***	–		
Romantic Secure	-.13	-.04	-.46***	.32***	-.31***	-.32***	.44***	-.36***	-.32***	–	
Romantic Avoidant	.18*	.10	.37***	-.40***	.43***	.36***	-.37***	.47***	.32***	-.72***	–
Romantic Anxious	.18**	.13	.50***	-.28***	.27***	.30***	-.25***	.23***	.42***	-.50***	.37***

Note. \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

Table 11

*Correlations among ASM Subtypes and Global Severity Index Controlling for Family Income*

	Global Severity Index
Parental Secure	-.29***
Parental Avoidant	.25***
Parental Anxious	.37***
Peer Secure	-.37***
Peer Avoidant	.33***
Peer Anxious	.36***
Romantic Secure	-.33***
Romantic Avoidant	.37***
Romantic Anxious	.32***

*Note.*  $N = 159$ . \*\*\*  $p \leq .002$ .



Table 12

*Correlations among ASM Subtypes and Sexual Behavior Controlling for Age and Ethnicity*

	Sexual behavior Total
Parental Secure	-.02
Parental Avoidant	-.03
Parental Anxious	.004
Peer Secure	-.01
Peer Avoidant	.04
Peer Anxious	.04
Romantic Secure	-.08
Romantic Avoidant	-.05
Romantic Anxious	.03

*Note.*  $N = 209$ . \*\*\*  $p \leq .002$ .

Table 13

*Correlations among ASM Subtypes and Substance Use Controlling for Gender and Ethnicity*

	Substance Use Total
Parental Secure	-.13
Parental Avoidant	.09
Parental Anxious	.06
Peer Secure	-.05
Peer Avoidant	.09
Peer Anxious	.09
Romantic Secure	-.20
Romantic Avoidant	.15
Romantic Anxious	.19

*Note.*  $N = 209$ . \*\*\*  $p \leq .002$ .

Table 14

*Communalities for ASM Subtypes*

	Initial	Extracted
ASM parent secure	.57	.67
ASM parent avoidant	.60	.74
ASM parent anxious	.45	.48
ASM peer secure	.67	.64
ASM peer avoidant	.62	.56
ASM peer anxious	.46	.47
ASM romantic secure	.64	.43
ASM romantic avoidant	.63	.45
ASM romantic anxious	.36	.24

Table 15

*Rotated Factor Matrix using Principle Axis Factoring for ASM Subtypes*

	Factor 1	Factor 2
ASM parent secure		-.79
ASM parent avoidant		.84
ASM parent anxious	.31	.62
ASM peer secure	-.78	
ASM peer avoidant	.72	
ASM peer anxious	.68	
ASM romantic secure	-.57	-.32
ASM romantic avoidant	.53	.40
ASM romantic anxious	.42	

Table 16

*Correlations among Parent, Important Other Attachments and Dependent Variables*

	Global severity index	Sexual behaviors	Substance use
Parent attachment	.35***	.05	.14**
Important other attachment	.48***	.06	.20***

*Note.* \*  $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Table 17

*Correlations among Overall Attachment and Dependent Variables Controlling for Demographics*

	Global Severity Index	Sexual Behaviors	Substance Use
Overall Attachment	.49***	.03	.17*

*Note.* \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Table 18

*Correlations among Overall Attachment and Sexual Behavior Items*

	Intercourse	Stranger	Oral sex	Anal sex	STD	Pregnant
Attachment	-.06	.10	.08	-.07	.02	.09

*Note.* \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

APPENDIX A  
BACKGROUND QUESTIONNAIRE



Please answer these questions by marking one line:

1. Gender: \_\_\_\_\_ (1) Male \_\_\_\_\_ (2) Female

2. Years of Age: \_\_\_\_\_

3. In which group do you mostly place yourself?

\_\_\_\_\_ (1) African-American/Black

\_\_\_\_\_ (4) Caucasian/White

\_\_\_\_\_ (2) American Indian/Alaskan Native

\_\_\_\_\_ (5) Hispanic/Latino

\_\_\_\_\_ (3) Asian/Pacific Islander

\_\_\_\_\_ (6) Other

4. What is your current marital status?

\_\_\_\_\_ (1) Single (never married)

\_\_\_\_\_ (4) Widowed

\_\_\_\_\_ (2) Married

\_\_\_\_\_ (5) Divorced

\_\_\_\_\_ (3) In committed relationship

\_\_\_\_\_ (6) Separated

5. What best describes your sexual orientation?

\_\_\_\_\_ (1) Heterosexual

\_\_\_\_\_ (3) Bisexual

\_\_\_\_\_ (2) Homosexual

\_\_\_\_\_ (4) Transgender

6. What is your family's total annual income? \_\_\_\_\_

7. What best describes your current academic classification:

\_\_\_\_\_ (1) Freshman

\_\_\_\_\_ (4) Senior

\_\_\_\_\_ (2) Sophomore

\_\_\_\_\_ (5) Graduate

\_\_\_\_\_ (3) Junior

\_\_\_\_\_ (6) Other \_\_\_\_\_

8. How many years have you attended a college or university?

\_\_\_\_\_ (1) less than 1 year

\_\_\_\_\_ (4) 3 years

\_\_\_\_\_ (2) 1 year

\_\_\_\_\_ (5) 4 years

\_\_\_\_\_ (3) 2 years

\_\_\_\_\_ (6) 5 or more years

APPENDIX B  
HAZAN-SHAVER ATTACHMENT SELF-REPORT

Please place an X next to the ONE paragraph that best describes your childhood relationship with the parent whom you are closest to.

\_\_\_\_\_ He/She was generally warm and responsive; he/she was good at knowing when to be supportive and when to let me operate on my own; our relationship was almost always comfortable, and I have no major reservations or complaints about it.

\_\_\_\_\_ He/She was fairly cold, distant, and rejecting, and not very responsive; I often felt that his/her concerns were elsewhere; I frequently had the feeling that he/she would just as soon not have had me.

\_\_\_\_\_ He/She was noticeably inconsistent in his/her reactions to me, sometimes warm and sometimes not; he/she had his/her own needs and agendas which sometimes got in the way of his/her receptiveness and responsiveness to my needs; he/she definitely loved me but didn't always show it in the best way.

APPENDIX C  
ATTACHMENT STYLE MEASURE

Please circle the number that best describes your childhood relationship with the parent whom you feel the closest to.

1 = strongly disagree

2 = disagree

3 = somewhat disagree

4 = neutral

5 = somewhat agree

6 = agree

7 = strongly agree

I found it relatively easy to get close to my mother/father

1      2      3      4      5      6      7

I was not very comfortable having to depend on my mother/father

1      2      3      4      5      6      7

I was comfortable having my mother/father depend on me

1      2      3      4      5      6      7

I rarely worried about being abandoned by my mother/father

1      2      3      4      5      6      7

I didn't like my mother/father getting too close to me

1      2      3      4      5      6      7

I was somewhat uncomfortable being too close to my mother/father

1      2      3      4      5      6      7

I find it difficult to trust my mother/father completely

1      2      3      4      5      6      7

I was nervous whenever my mother/father got too close to me

1      2      3      4      5      6      7

My mother/father often wanted me to be more intimate than I feel comfortable being

1      2      3      4      5      6      7

My mother/father was often reluctant to get as close as I would have liked

1      2      3      4      5      6      7

I often worried that my mother/father didn't really love me

1      2      3      4      5      6      7

I rarely worried about my mother/father leaving me

1      2      3      4      5      6      7

I often wanted to merge completely with my mother/father, and this desire sometimes scared my mother/father away

1      2      3      4      5      6      7

APPENDIX D  
SEXUAL BEHAVIORS QUESTIONNAIRE

1. Have you ever had sex?

\_\_\_\_\_YES  
\_\_\_\_\_NO

2. If the answer to the above question was YES, how many different sexual partners have you had?

In the past 6 months? \_\_\_\_\_  
In your lifetime? \_\_\_\_\_

3. Have you ever had sex with a stranger? (a stranger is defined as someone you had just met)

\_\_\_\_\_YES  
\_\_\_\_\_NO

4. If so, how many different times has this occurred?

In the past 6 months? \_\_\_\_\_  
In your lifetime? \_\_\_\_\_

5. Have you ever had anal sex?

\_\_\_\_\_YES  
\_\_\_\_\_NO

6. If so, how many times has this occurred?

In the past 6 months? \_\_\_\_\_  
In your lifetime? \_\_\_\_\_

7. Have you ever had a sexually transmitted disease? (including genital herpes, chlamydia, gonorrhea, syphilis, and AIDS)

\_\_\_\_\_YES  
\_\_\_\_\_NO

8. If so, how many times have you contracted an STD?

In the past 6 months? \_\_\_\_\_  
In your lifetime? \_\_\_\_\_

9. Have you ever been pregnant or gotten someone else pregnant?

\_\_\_\_\_YES  
\_\_\_\_\_NO

10. If so, how many times has this occurred?

In the past 6 months? \_\_\_\_\_  
In your lifetime? \_\_\_\_\_

APPENDIX E  
SUBSTANCE USE QUESTIONNAIRE



1. Have you ever drunk alcohol?

\_\_\_\_\_ YES  
\_\_\_\_\_ NO

1 = Never  
2 = Less than once per month  
3 = Once per month  
4 = Twice per month  
5 = Three times per month  
6 = Weekly  
7 = Two-three times per week  
8 = Four-six times per week  
9 = Everyday

2. If so, how often have you consumed 5 or more drinks on a single occasion in the past 6 months?

1 2 3 4 5 6 7 8 9

3. How often have you consumed alcohol to the point of intoxication in the past 6 months?

1 2 3 4 5 6 7 8 9

4. How often has the use of alcohol in the past six months caused problems in any of the following areas: parents, friends, dating partners, at school/work, or legal.

1 2 3 4 5 6 7 8 9

5. Have you ever used the following substances: Circle One

(a) marijuana/hashish.....YES NO

(b) cocaine/crack.....YES NO

(c) LSD.....YES NO

(d) angel dust/PCP.....YES NO

(e) ecstasy or other designer drugs.....YES NO

(f) methamphetamines/crystal meth.....YES NO

(g) prescription drugs that were not prescribed to you.....YES NO

(h) inhalants.....YES NO

(i) heroin.....YES NO

6. How often have you gotten high from any of the substances listed above in the past 6 months?

1 2 3 4 5 6 7 8 9

7. How often has the use of any of the substances listed above during the past 6 months caused problems in any of the following areas: parents, friends, dating partners, at school/work, or legal?

1      2      3      4      5      6      7      8      9

8. Have you ever sold drugs?

\_\_\_\_\_YES    \_\_\_\_\_NO

APPENDIX F  
UNT IRB INFORMED CONSENT FORM

Before agreeing to participate in this research study, it is important that you read and understand the following explanation of the purpose and benefits of the study and how it will be conducted.

**Title of Study:** Late adolescents' parental, peer, and romantic attachment as they relate to affect regulation and specific behaviors

**Principal Investigator:** Ms. Sarah Ingle, M.S., a graduate student in the University of North Texas (UNT) Department of Psychology.

**Purpose of the Study:** You are being asked to participate in a research study which involves an examination of relationships with your parents, your friends, and your significant other. This study will attempt to discover how these bonds are related to other areas of one's life, such as how you experience emotions and what activities you participate in.

**Study Procedures:** You will be asked to complete a variety of questionnaires that will take about 60-90 minutes of your time.

**Foreseeable Risks:** The potential risk involved in this study is experiencing minor discomfort due to disclosing on paper some information that you may feel is sensitive.

**Benefits to the Subjects or Others:** Results from this study will provide valuable information within the realm of clinical psychology. Also, we hope that the information gathered will be beneficial to those who work in high schools, such as teachers and counselors. In addition, we hope that this information will contribute to the understanding of individuals in their late adolescence. You might benefit from the process of completing these assessment instruments as some require introspection.

**Compensation for Participants:** You will receive one credit for every half hour as compensation for your participation in this study. That credit can either satisfy an undergraduate psychology course requirement or be used as extra credit in any participating course.

**Procedures for Maintaining Confidentiality of Research Records:** Participants' confidentiality will be strictly maintained in that the participants will only sign their names to the consent forms which will be kept by the principal investigator, as records

must be kept in order to award appropriate credit. Each participant will be assigned a number and this number will be used to identify all study materials. The confidentiality of your individual information will be maintained in any publications or presentations regarding this study.

**Questions about the Study:** If you have any questions about the study, you may contact **Ms. Sarah Ingle, M.S.** at telephone number **940-565-2671** or **Dr. Russell D. Clark, III**, UNT Department of Psychology, at telephone number **940-565-2671**.

## University of North Texas Institutional Review Board

### Informed Consent Form (Continued)

**Review for the Protection of Participants:** This research study has been reviewed and approved by the UNT Institutional Review Board (IRB). The UNT IRB can be contacted at (940) 565-3940 with any questions regarding the rights of research subjects.

**Research Participants' Rights:** Your signature below indicates that you have read or have had read to you all of the above and that you confirm all of the following:

- Ms. Sarah Ingle, M.S. has explained the study to you and answered all of your questions. You have been told the possible benefits and the potential risks and/or discomforts of the study.
- You understand that you do not have to take part in this study, and your refusal to participate or your decision to withdraw will involve no penalty or loss of rights or benefits. The study personnel may choose to stop your participation at any time.
- You understand why the study is being conducted and how it will be performed.
- You understand your rights as a research participant and you voluntarily consent to participate in this study.
- You have been told you will receive a copy of this form.

---

Printed Name of Participant

---

Signature of Participant

---

Date

**For the Principal Investigator or Designee:**

I certify that I have reviewed the contents of this form with the participant signing above. I have explained the possible benefits and the potential risks and/or discomforts of the study. It is my opinion that the participant understood the explanation.

---

\_\_\_\_\_  
or Designee

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Principal Investigator

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