

The Impact of Self-Reported Attachment Style on Aggression and  
Depressed Mood in Urban African American Adolescents

by

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## **DEDICATION**

To my dad Eddie B. Burns Sr. the first person to teach me  
the value and importance of achieving an education

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Dear Heavenly Father, my steady rock, and salvation, thank you for your faithfulness throughout my life. You have encouraged me and girded me with strength even when I thought I could not take one more step through this process.

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## ABSTRACT

In 2010, the Centers for Disease Control and Prevention (CDC) reported that homicide is the leading cause of death for African American males between the ages of 10-24, an average of 60.7 deaths per 100,000 compared to 3.5 deaths per 100,000 for Caucasian males. This study examined the association between self-reported attachment style, aggression, and depressed mood in urban African American adolescents, and explored the extent to which age, gender, and the quality of the adolescents' attachment relationships with parents and peers predicted aggression and depressed mood. The final study sample consisted of 136 male and female urban African American adolescents between the ages of 15-17 that, in classroom settings, responded to questionnaires measuring the quality of adolescents' attachment relationships with parents and peers, aggression, anger expression, depressed mood, self-reported attachment style, and a brief demographics questionnaire. Correlational analyses showed significant negative correlations between parent attachment and aggression ( $r=-.42$ ,  $n=136$ ,  $p<0.01$ ) and between parent attachment and depressed mood ( $r=-.38$ ,  $n=136$ ,  $p<0.01$ ). Highly significant positive correlations were found between state anger and aggression ( $r=.63$ ,  $n=136$ ,  $p<0.01$ ) and trait anger and aggression ( $r=.68$ ,  $n=136$ ,  $p<0.01$ ). Significant positive correlations were also found between state anger and depressed mood ( $r=.52$ ,  $n=136$ ,  $p<0.01$ ) and between trait anger and depressed mood ( $r=.43$ ,  $n=136$ ,  $p<0.01$ ). Regarding the association between avoidant attachment style and the quality of parent and adolescent attachment, a significant negative correlation was found ( $r= -.23$ ,  $n=136$ ,  $p<0.01$ ), while significant positive correlations were found between avoidant attachment

and state anger ( $r = .36$ ,  $n = 136$ ,  $p < 0.01$ ) and avoidant attachment and trait anger ( $r = .23$ ,  $n = 136$ ,  $p < 0.01$ ). Multiple regression analysis as depicted by Baron and Kenny showed that the quality of parent attachment and anger expression were mediators between avoidant attachment and aggression and between avoidant attachment and depressed mood. Study findings suggest the importance of evaluating urban African American youth for the quality of their relationships with their parents or primary care givers, anger, aggression, and depressed mood. Health care providers, educators, youth workers, juvenile justice systems, and residential treatment facilities are positioned to facilitate these evaluations and to arrange for appropriate interventions.

## **Chapter 1**

### **Introduction**

#### **The Problem**

Youth violence, is a serious public health problem in the United States (Breakey, Wolf, & Nicholas, 2001; CDC, 2010a), and it is contributing to increasingly higher rates of violence related health disparities and deaths among minority youth, especially African Americans. Homicide is the leading cause of death for African American males between the ages of 10-24 at (60.7 per 100,000), the second leading cause of death among Hispanic males at (20.6 per 100,000), and the third leading cause of death for Asian and American Indian males (CDC, 2010a). In sharp contrast, homicide rates for Caucasian males are the lowest at (3.5 per 100,000) (CDC, 2010a).

Homicide is the second leading cause of death for all youth between the ages of 10-24 (CDC, 2010a). In 2007, 5,764 adolescents were murdered. That is an average of 16 per day (CDC, 2010a). Of those homicide victims, 86% (4,973) were male and 14% (791) were female. Just as startling, Healthy People (2010) found that in 1997 nearly 33,000 people sustained injuries from guns, including 42% becoming victims of homicide. That same year, homicide became the third leading cause of death for young children and adolescents. The prior year, no less than 80% of all infant homicides were attributable to fatal child abuse. Moreover, they reported that African Americans are killed nearly five times more often than Caucasians, and that males are both more likely to commit murder and to become the victims of murder.

In addition to violence related deaths, non-fatal injuries among U.S. adolescents are also high. The Centers for Disease Control and Prevention (2010) reported that in 2009 a national

survey revealed that 32% of high school students had been in at least one physical fight. Additionally, in 2008, 656,000 youth required medical treatment in the emergency department for physical assault injuries. What is more, financial expenditures associated with youth violence are adding to our already depressed economy. The cost associated with youth violence is estimated to exceed \$158 billion per year and consumes additional resources in the form of medical costs, decreased quality of life, and reduction in productivity (Children's Safety Network Economics & Data Analysis Resource Center, 2000). Aggression has also been linked to suicidal behavior (Gietl et al., 2007), antisocial personality disorder (Blair, 2001), substance use (Fite, Colder, Lochman & Wells, 2007), anger (Bushman & Anderson, 2001), and attachment disorders and depression (Bowlby, 1973).

An abundance of empirical and theoretical literature shows that all forms of aggressive behaviors and psychopathologies such as anxiety disorders, personality disorders, and depression are significantly associated with insecure attachment strategies (Bakersmans-Kranenburg, Fearon, Lapsley, Roisman, & van Ijzendoorn, 2010; Bowlby, 1958; Eliot & Cornell, 2009; Kobak, Zajac, & Smith; Moretti & Obsuth, 2011; Levy & Orlans, 2004). Yet, little is known about these correlations in African American youth. This study addressed this gap.

### **Purpose of the Study**

The primary purpose of this study was to examine the associations between self-reported attachment style, aggression, and depressed mood in urban African American adolescents. A second purpose was to explore the extent to which age, gender, quality of parent and peer attachment relationships and anger expression predict aggression and depressed mood in urban African American adolescents.

## **Research Questions**

To achieve the purposes of this study, three research questions were identified. These questions guided the analyses and methodologies of the study.

1. Is there a correlation between influencing factors (quality of parent attachment, quality of peer attachment, state anger, and trait anger) and risk factors (aggression and depressed mood) in urban African American adolescents?

2. To what degree do personal factors (age, gender, current grade in school, ambivalent attachment, and avoidant attachment) predict influencing factors (quality of parent attachment, quality of peer attachment, state anger, and trait anger) in urban African American adolescents?

3. To what degree do personal factors (age, gender, current grade in school, ambivalent attachment, and avoidant attachment) predict risk factors (aggression and depressed mood) mediated by influencing factors (quality of parent attachment, quality of peer attachment, state anger, and trait anger) in urban African American adolescents?

## **Significance of the Study**

Despite the fact that attachment theory has existed for decades and has been studied extensively in various ethnic groups and cultures, there is a gap in theoretical and empirical literature on attachment in African Americans in general and African American youth specifically. In previous studies on attachment, African American youth were either underrepresented or not represented at all. This study helps to address this gap by having a sample that was comprised entirely of African American youth and by contributing to attachment literature in African Americans.

Considering the role that attachment security is postulated to play in the development of psychopathologies, aggression, violence, anger, and depressive symptoms, the fact that African American youth are experiencing exponentially higher rates of aggression and violence related deaths than other racial ethnic groups, and the fact that literature on these correlations in African American adolescents is sparse, this study is important because it is a step toward understanding these correlations in African American adolescents.

This study delineates a conceptual model for use by nursing to inform nursing research exploring a range of issues plaguing African Americans such as youth aggression and violence, teen pregnancy, health disparities, and mental and emotional health disparities. Moreover, this model can inform the nursing process in addressing the attachment needs of high-risk pregnant women, new parents, and other high-risk parents while also educating them on how to be sensitive and proactive in meeting the attachment needs of their infants, children, and adolescents.

Finally, statistically significant study findings may serve as a springboard for appropriating funding for applied research focused on the development of evidence-based prevention and early intervention programs geared toward reducing aggression and depressed mood in African American adolescents.

### **Theoretical Framework**

This study was largely based on attachment theory as proposed by Bowlby (1958, 1969, 1973, 1980; 1990), Ainsworth (1964, 1989), and Ainsworth and Wittig (1969). Influenced by the work of ethologists, his own work with children and infants, discussions with mothers, and dissatisfaction with instinct based theories, Bowlby (1958) conceptualized an attachment theory

he called Component Instinctual Responses. He put forth that mother-infant attachment is not solely due to the mother's nurturing and stimulation behaviors, but is primarily accomplished through behaviors of the infant such as sucking, smiling, following, crying, clinging, and calling. He coined the phrase "instinctual responses" (p. 361) to describe these innate behaviors possessed by the baby to elicit the mother's attention to meet its needs for food, warmth, and socialization (Bowlby, 1958, 1969). Bowlby observed that once attachment relationships are established, infants, children, and adolescents have an intense desire to maintain a close and lasting relationship to whom they have become attached and that breaks in the attachment bonds through separation may result in pathological sadness, grief, anger, hostility, aggression, anxiety, and depression (Bowlby, 1969, 1973, 1980).

Three attachment styles, based on the level of security an infant feels in relationship to its primary attachment figure, have been identified: (A) avoidant attachment, (B) secure attachment, and (C) ambivalent attachment (Ainsworth & Wittig, 1969; Muris, Mayer, & Meesters, 2000; Muris, Meesters, van Melick, & Zwambag, 2001; Muris, Meesters, Morren, Moorman, 2004). These distinctions are based on findings from the "Strange Situation," a landmark study conducted by Ainsworth and Wittig (1969). A more detailed discussion of early attachment is presented in the literature review.

### **Conceptual Model of the Study**

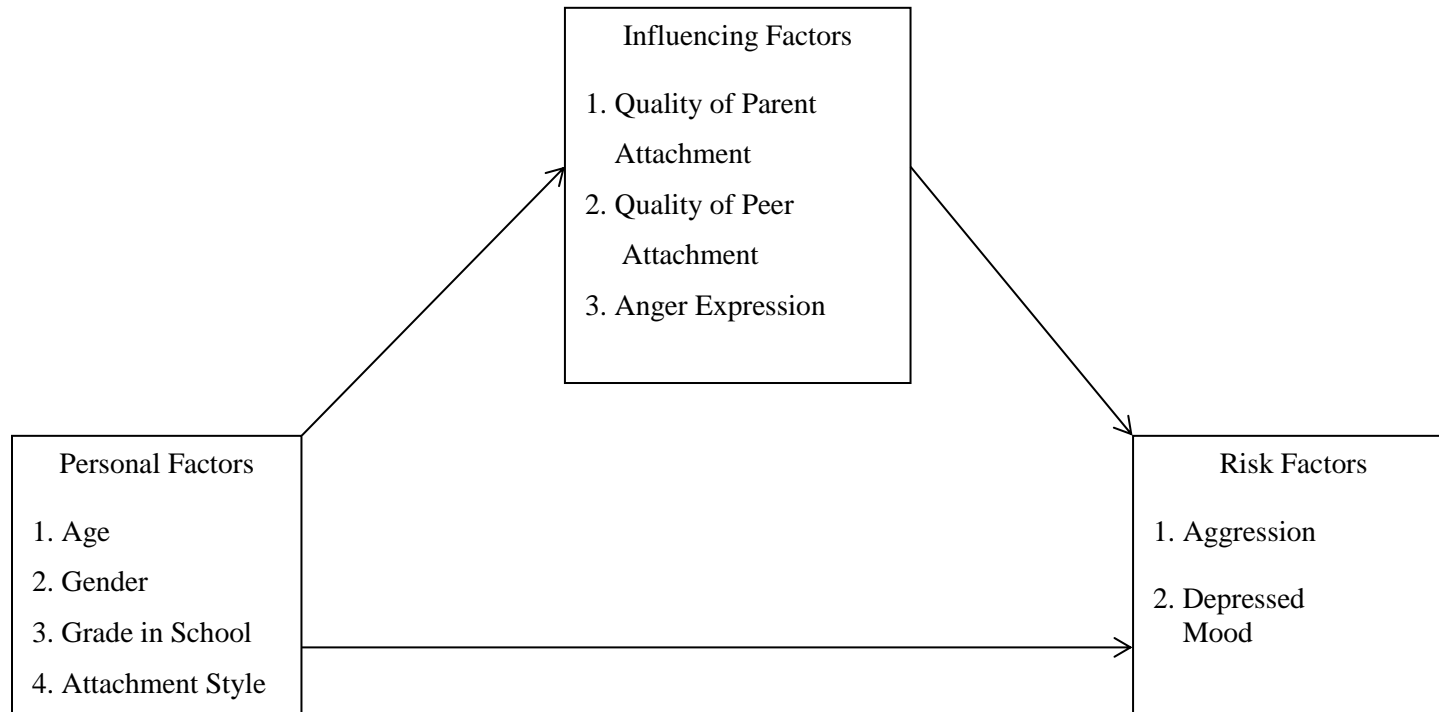
The model for this study (see figure 1 below) visually depicts a set of constructs that were developed utilizing relevant empirical and theoretical literature on attachment, depression, and adolescent aggression as a foundation. The Personal Factors construct is comprised of four elements: age, gender, current grade in school, and self-reported attachment style most of which



empirical and theoretical literature shows are relevant to attachment security, aggression, and depression in adolescent populations (Ainsworth, 1964, 1989; Bowlby (1958, 1969, 1973, 1980; 1990). Race, another important personal factor, is not included in the model because the entire sample consisted of African American youth. Influencing factors contains the elements quality of parent attachment relationships, quality of peer attachment relationships, and anger expression. The final component, Risk Factors, is comprised of the outcome variables aggression and depressed mood.

As indicated by the directionality of the arrows, analyses were conducted to determine the strength and direction of relationships between variables and for determining the degree to which the predictor variables predicted the outcome variables. Finally, as visually depicted, analysis was conducted to determine if mediational relationships exist between Personal Factors, Influencing Factors, and Risk Factors in the study population. The conceptual model was integral to the selection of the study questionnaires administered to study participants.

**Figure 1.0 The Impact of Self-Reported Attachment Style on Aggression and Depressed Mood in Urban African American Adolescents**



**Conceptual Model**

## Summary

Youth violence is claiming the lives of adolescents at an alarming rate, particularly African American males. It is also contributing to physical injuries that are consuming excessive amounts of financial capital in connection with visits to hospital emergency departments and lost time from work. Furthermore, the destructive nature of aggression and violence, at the individual level, is revealed through linkages to personality disorders, suicide, substance use, mismanaged anger and attachment disorders.

Infants and children intensely seek security through attachment to their mothers or other primary caregivers (Bowlby, 1969). Insecure attachment results in sorrow, anxiety, anger problems, and aggression (Bowlby, 1969, 1973, 1980). Despite the salient role that insecure attachment is thought to play in the development of mental and behavioral health problems, including aggression, little is known about this correlation in African American adolescents. This study addressed this shortage. In addition to explicating the study problem, Chapter 1 described the purpose of the study, discussed the significance of the study, and presented the research questions, and the theoretical basis for the study.

## **Chapter 2**

### **Literature Review**

A main tenet of this study is that not enough is being done to address the destructive forces of violence and aggression in African American adolescents. One possible solution for tackling this public health problem may be increasing the number of empirical studies identifying factors associated with violence and aggression in this vulnerable population. This study is an essential step in that direction. This review of relevant literature begins with a detailed discussion of depression and aggression, including their definitional complexities, and culminates with a discussion on the relationship between anger expression, aggression, and depression in Adolescents.

### **Adolescent Risk Factors**

#### **Adolescent Depression**

Adolescent depression in and of itself is a difficult construct to define. This is in part because adolescence is a period when the wide array of normal biological, cognitive, emotional, and social restructuring changes may make it difficult to distinguish between pathological disturbances and normal adolescent development. To help bring this into focus, a brief overview of adolescent development is provided here.

Adolescence marks the decade in life when children are transitioning from childhood to adulthood, typically between the ages of 10-20 years (Susman & Rogol, 2004). There are three age-based phases to adolescence, early adolescence (10-14), middle adolescence (15-17), and late adolescence (18-20) (Elliott & Felman, 1990). The biological changes of early adolescence

(puberty) are the most numerous and complex since fetal development and infancy (Peterson et al., 1995; Susman & Rogol, 2004). Physiological changes include such things as the development of pubic and axillary hair, growth spurts in weight and height, breast enlargement in girls, enlarged testicles, facial hair, and voice deepening in boys, alterations in body shape, and redistribution of body fat (Peterson et al., 1995; Susman & Rogol, 2004). In addition to the many physiological changes associated with adolescence, Patton & Viner (2007) found this period to be marked by numerous brain changes, some of which continues up to a decade after puberty (Patton & Viner, 2007). The social component of puberty is distinguished by adolescents' awareness of the self, body image, sexuality, a desire to fit in with peer groups, and an ever-increasing awareness of familial and societal expectations to conform to standards for mature and responsible behavior (Alsaker, 1995). Despite the many changes and adjustments that youth have to navigate during adolescence, most weather the process with minimal difficulty. However, in addition to the normal changes associated with adolescent development, many adolescents also experience a dramatic increase in dysregulation of mood and affect (Rudolph & Lambert, 2007).

Contributing to the challenge of defining adolescent depression is the fact that there are three widely accepted conceptualizations of the depression construct (Compas, Ey, & Grant, 1993; Graber, 2004; Rudolph & Lambert, 2007). Moreover, each of them has distinctive diagnostic criteria and methodological approaches for assessing. The three levels of depression commonly observed in adolescence are 1) depressed mood, 2) depressive syndromes, and depressive disorders, as defined by the Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition-Text Revision (DSM-IV-TR) (American Psychiatric Association, 2000).

Investigators utilizing a variety of adolescent self-report checklists and adolescent and parent diagnostic interviews sought to determine in community samples of adolescents (e.g. Garrison, Addy, Jackson, McKeown, & Walter, 1991; Roberts, Lewinsohn & Seeley, 1991) and clinical samples of adolescents (e.g. Edelbrock & Costello, 1988a; Rey & Morrison-Yates, 1991, 1992; Weinstein et al., 1990), the validity of the three-group depression taxonomy, the hypothesis that each of them is distinctly different from the others, and to assess if there is correspondence among the three. Findings across the studies suggest that while there is some overlap of depressive symptoms between the three classifications, each level is distinguishable from the others. Furthermore, results showed that between 15-40% of adolescents had recently experienced a bout with depressed mood, 5-6% had experienced depressive syndrome in the previous 6 months, and that 1-3% of adolescents will likely be diagnosed with a depressive disorder sometime in the future (Compas et al., 1993). Moreover, findings suggest a probable sequential, hierarchical progression from one level of depression to the next (Compas, et al., 1993). For instance, an adolescent experiencing a depressed mood related to daily life stressors, changes in hormonal levels, and/or difficulties in personal relationships, could be at risk for advancing to depressive syndrome, and could with continued dysregulation of biological functioning, and problems with coping mechanisms, progress to a depressive disorder (Compas et al., 1993). The operational definition of depression in this proposed study is depressed mood as described by Compas, et al., 1993.

Any number of life circumstances related to internal or external factors like those, for example, experienced during adolescence, may trigger the onset of depressed mood. Compas, et al. (1993) hypothesized that between 15-40% of adolescents have recently been challenged by depressed mood, making it the most commonly experienced level of depression in adolescents. It

is also conceived as the starting point, for many adolescents, in the progression leading to clinical depressive disorders. Factor loadings of items on the Emotional Tone Scale (Petersen et al., 1984) for depressed mood include the following symptoms: 1) sadness, 2) loneliness, 3) easily hurt feelings, 4) feelings of worthlessness, 5) emotional upset, and 6) thoughts of suicide. Again, when assessing depressed mood, there is no attempt made at clustering the symptoms into a specific pattern or duration of time (Compas et al., 1993). The most commonly used method for assessing depressed mood in adolescents' is the self-report scale or checklist e.g. Children's Depression Inventory CDI; Kovacs, 1992; BDI Beck Depression Inventory; et al., 1961.

In a sample of 88, inner-city African American adolescent males between the ages of 13 to 16, Robinson, Paxton, and Jonen (2011) explored the impact of depressive symptoms, normative beliefs about aggression, and neighborhood violence on aggressive and violent behaviors. Findings showed a large correlation between direct and indirect aggression and general interpersonal aggression ( $r = .60, n=88, p<.01$ ), a medium correlation between aggression and general interpersonal aggression ( $r = .48, n=88, p<.01$ ), and a significant positive correlation between depressive symptoms and direct and indirect aggression in response to anger ( $r = .47, n=88, p<0.01$ ). Moreover, correlations were found between depressive symptoms and general interpersonal aggression ( $r = .44, n = 88, p<0.01$ ), between depressive symptoms and normative beliefs about aggression ( $r = .31, n=88, p<0.01$ ), and normative beliefs about aggression and exposure to violence ( $r = .34, n = 88, p<0.01$ ). Results from sequential multiple regression indicated that normative beliefs about aggression, depressive symptoms, and exposure to violence predicted self-reported general interpersonal aggression and direct and indirect aggressive responses to anger. Altogether, these results may prove useful to informing strategies geared toward reducing aggression in inner-city African American adolescent males.

In depressive syndromes, adolescents experience a constellation of subclinical levels of co-occurring symptoms associated with depression and anxiety. Results of a factor analysis show item loadings for anxious/depressed syndrome includes such symptoms as unhappy, sad, lonely, guilty feelings, and feeling unloved (Achenbach, 1991a). Assessment of depressive syndromes is typically achieved through integration of data collected from the adolescent, parent, and teacher checklists and reports. Commonly used instruments for measuring depressive syndromes are the Quay-Peterson Revised Behavior Problem Checklist (Quay & Peterson, 1983) and the Child Behavior Checklist (CBCL; Achenbach, 1991c; Achenbach & Edelbrock, 1986).

Prevalence rates for depressive disorders in adolescents are between 15-20% (Rudolph & Lambert, 2007). The age range for the onset of major depressive disorder in adolescents is approximately 13 to 15 and even younger for dysthymia. Research suggests that adolescent depression predicts adult depression. Common comorbid disorders associated with depression in children and adolescents include anxiety disorders, ADHD, conduct disorders, oppositional defiant disorder, and substance use disorders (Lewinsohn, Hops, Roberts, Seeley, & Andrews, 1993). Regarding gender differences, depression is more prevalent in girls than in boys. Racial/ethnic differences are inconclusive; some findings report no differences while others indicate that minorities have higher rates of depressive disorders than Whites (Rudolph & Lambert, 2007). The etiology of depression may be associated with biological factors (Rudolph & Lambert, 2007), genetic factors (Klein, Lewinson, Rohde, Seeley, & Durbin, 2002), social-cognitive influences such as, low self-esteem, interpersonal influences such as those found in family relationship problems, and contextual influences such as stressful life events, and financial concerns (Rudolph & Lambert, 2007). To review the diagnostic criteria for depressive disorders, refer to Appendix M. It is noteworthy to mention that while many of the symptoms



experienced in depressive disorders are also relevant to depressive syndrome and depressive mood, that the symptoms in depressed mood and depressive syndromes exist at a subclinical level and that there is no attempt made to define a specific duration or clustering of symptoms as in depressive disorders (Compas, et al., 1993; Graber, 2004; Rudolph & Lambert, 2007).

According to the CDC (2001), suicide is the third leading cause of death in youth between the ages of 10-24, and it has become a serious public health problem. Although girls attempt suicide more often than boys do, boys die from suicide more often. Among the risk factors for suicide is depression (CDC, 2011). Matlin, Molock, and Tebes (2011) examined the degree to which receiving support from family, peers, and the community moderates depressive symptoms and suicidality in African American adolescents. The sample consisted of 212 male (79) and female (133) African American adolescents from middle class families. Their age range was 13 – 19. Descriptive analyses showed that 22% of the sample reported having suicidal thoughts during the past year, another 9.2% admitted making a suicide attempt, and scores on the depression scale indicated that nearly 9% of the participants had clinical levels of depression. Results of bivariate correlational analyses showed significant positive relationships between reasons for living and family support ( $r = .540, p < .001$ ) and peer support ( $r = .436, p < .001$ ). Results also showed significant negative relationships between depression and family support ( $r = -.466, p < .001$ ), depression and peer support ( $r = -.309, p < .001$ ), and reasons for living and depression ( $r = -.406, p < .001$ ). There was a small significant negative correlation between depression and community connectedness ( $r = -.186, p < .01$ ). Findings from hierarchical multiple regression analyses showed in Step one no main effect for age or gender and that  $R$  was not significantly different from 0,  $R^2 = .01, F(1, 169) = .47, p < .05$ . Results suggested a significant main effect for depressive symptoms indicating a negative relationship between depression and

reasons for living,  $\beta = -.20$ ,  $t(179) = -2.83$ ,  $p < .01$ , and a significant main effect for peer support and family support on reasons for living. That is, youth with higher levels of peer and family support, and higher levels of community connectedness also reported higher levels of reasons to live. Results from multiple regression analyses Step 3 indicated that the interaction between depression X community connectedness and depression X peer support were both significant  $\beta = -.15$ ,  $t(179) = 2.17$ ,  $p < .05$ , and  $\beta = -.22$ ,  $t(179) = -2.33$ ,  $p < .05$ , respectively. Moreover, the interaction term of depression X family support had a trend effect,  $\beta = .18$ ,  $t(179) = 1.82$ ,  $p < .1$ .

This study is important in the following ways. First, it shows the connection between depression and all levels of suicidality from suicidal ideations to attempted suicides, and it highlights the importance of screening for depression in African American adolescents. Secondly, it shows the positive influence of close ties to family, peers, and community on depression and feeling as though there is a reason to live. Thirdly, based on the demographic information in the study, such as parental education level, these findings seem to suggest that there may be a protective benefit to adolescents belonging to a middle class family with ample support from family, peers, and the community. Considering the number of challenges and stressors that inner city families experience on a daily basis, and the negative effects of poverty on physical and mental health, future studies replicating the methodologies in this study should include African American youth living in the inner city, thereby, increasing the generalizability of study findings and perhaps informing depression and suicide prevention and intervention strategies.

## **Adolescent Aggression**

In this study, aggression is defined as actions taken by one person against another to hurt them. The severity of these actions can range anywhere on the aggression continuum from verbal assault to taking someone's life. Violence is an extreme form of aggression intended to cause severe bodily harm and when perpetrated at extreme levels may result in aggravated assault and homicide (Anderson & Huesmann, 2003; Berkowitz, 1993).

### **Neurobiological Correlates of Aggression**

The following literature shows strong associations between human aggression, the stress response, brain impairment, the hormone testosterone, and the neurotransmitter serotonin. Although the current proposed study will not be assessing the neurobiological aspects of aggression in the target population, these findings warrant careful consideration in relationship to inner-city African American adolescents. This is because urban African American adolescents frequently live in environmental conditions placing them at risk for brain injury and physical injuries related to environmental hazards, playing sports, activities associated with illegal drugs, consumption of drugs and alcohol, exposure to higher levels of neighborhood crimes and violence, physical assaults, and the availability and use of firearms.

Although aggression is commonly associated with acts of violence, belligerence, and antagonism, it is essential for self-protection and preservation of life. Several naturally occurring neurobiological chemicals and bodily reactions to those chemicals contribute to our ability to protect ourselves during times of stress and threat. The stress response, for instance, begins in the hypothalamus where in response to some stressor corticotropin-releasing factor (CRF) signals

the pituitary gland to release adrenocorticotrophic hormone (ACTH) which alerts the adrenal glands to release cortisol into the blood stream. The hormones epinephrine and norepinephrine are also released into the blood by the adrenal glands and the sympathetic nervous system. The combination of these hormones puts the body into the “fight or flight” mode which causes the heart to race, blood pressure to rise, breathing to increase, muscles to tense, sweat to bead, and senses to sharpen. In this state, we are energized to take on our predators head on or to remove ourselves from the threatening situation. Once the threat has passed, the parasympathetic nervous system helps the body to return to a state of calmness (Stress Control, Harvard Special Health Report, 2006). It is noteworthy that while the stress response is life preserving in the face of a real threat, it can take a toll on the body when chronically triggered by depression, fear, anger, and extreme anxiety (Stress Control, Harvard Special Health Report, 2006). In one study of early adolescent boys, Van Bokhoven et al. (2005) found higher levels of cortisol to be associated with aggressive conduct disorder and reactive forms of aggression. They attributed this finding, in highly antisocial boys, with having a more active hypothalamic-pituitary-axis (HPA).

Raine (2008) studied the effects of brain impairments, risk factors, aggression, and antisocial behaviors. He focused primarily on the frontal cortex, the limbic system, the temporal cortex, and the parietal cortex. In normal brain function, the frontal cortex assists in decision-making, response perseveration, judgment, and empathy. Impairments in this region are associated with misperception of other’s intentions, failure to respond to punishment, problems with controlling anger, and making poor judgments. The temporal cortex aids in moral decision-making and social perceptions; and impairments in this brain region may lead to misattribution of other’s motives and disregard for the rules of society. The parietal cortex helps people to

assume responsibility for their actions and moral judgments. Raine (2008) found that damage in this area increases the potential for breaking societal rules and engaging in irresponsible behavior. The limbic system, which is comprised of the amygdala, anterior and posterior cingulates, and the hippocampus, assists in behavior inhibition, fear conditioning, moral emotion, and social-emotional judgments. Impairments in this region of the brain may precipitate problems in coping with conflicts, difficulty in controlling antisocial behaviors, decreased affect, poor conscience development, and misjudging others' intentions (Raine, 2008). Similarly, Strueber, Lueck and Roth (2006) found that some violent repeat offenders have abnormalities in the hypothalamus and amygdala, located in the brain's limbic system, the area of the brain controlling fear and aggression. Neuroscientists have found that these abnormalities may contribute to poor impulse control and dysregulation of emotions in this population of offenders. Finally, the volume of the brain's anterior insular grey matter and the size of the amygdala have also been hypothesized as contributing to aggressive behaviors (Sterzer et al., 2007; Whittle et al., 2008).

Numerous studies have focused on the relationship between testosterone and aggressive behaviors, and many, if not most, agree that understanding the correlation is complex and study outcomes inconclusive (Knoblich & King, 1992; Berkowitz, 1993; Raine, 2002). Berkowitz (1993) reported:

Researchers who have done work in this area tell us that hormones affect human conduct in two ways: (1) by organizing the developing human brain in such a way that particular modes of response become more likely and (2) by activating the physiological mechanisms that help to govern certain behavior patterns. (p. 396)

The brain organizing influence of testosterone occurs when the fetus is exposed to high levels of testosterone either in utero or soon after birth. The testosterone pushes the fetus's central nervous system toward masculinization, thereby, stimulating the development of male-like behaviors and bodily features (Berkowitz, 1993). This phenomenon has been found to be true for males and females (Berkowitz, 1993). The ability of testosterone to activate aggressive behavior is less clear, in part because the research required to answer this question in humans would be unethical (Berkowitz, 1993). Most studies have been able to show a relationship between aggression and testosterone but not that testosterone is the catalyst for the behavior (Berkowitz, 1993; Knoblich & King, 1992). What has been shown, however, is that levels of testosterone can be influenced by competition and dominance, i.e., during competitions when one is winning testosterone levels increase. Likewise, after a loss testosterone levels decrease. Other studies have shown that when male animals are castrated they lose their ability and tendencies to fight other male animals, but regain their aggressive abilities after their levels of testosterone are enhanced by exogenous sources (Berkowitz, 1993). Some studies have found that testosterone alone may not elicit aggressive behaviors except in circumstances of provocation. In these cases, socioeconomic status may provoke aggressive behaviors (Berkowitz, 1993; Knoblich & King, 1992; Raine, 2002). Anabolic steroid use by mentally stable young males has been implicated in suicides (Brower et al., 1989), homicides, and other antisocial behaviors (Pope & Katz, 1990).

Although the neurotransmitter serotonin is conceived as a behavior inhibitor and fear reducer (Strueber, Lueck, & Roth 2006), when blood serotonin levels are low it may give rise to antisocial behaviors such as impulsive acts of violence, aggression, and suicide. Soubrie (1986) posited that serotonergic functioning is not necessarily related to emotions or internal states but rather a response to unpleasant or new external cues that is influenced by the levels of serotonin

that are present. In instances where there are higher levels of serotonin, the response is one of freezing and anxious behavior. In contrast, lower levels of serotonin results in impulsivity because the fear of punishment for negative behavior is diminished. A separate study found that when compared with controls, violent offenders had higher levels of serotonin (Moffitt, 1997). The same study put forth that when violent offenders had a combination of higher levels of serotonin and conflicted family backgrounds they were over three times as likely, by the age of 21, to become violent as compared to those with either high levels of serotonin alone or with conflicted family backgrounds alone (Moffitt, 1997).

### **Types of Aggression**

Several forms of aggression are connected to aggressive behaviors in adolescents: reactive-impulsive aggression, controlled-instrumental aggression (proactive), and relational aggression. Reactive-impulsive aggression is associated with anger, increased autonomic arousal states, and mental disorders such as: intermittent explosive disorder, stress disorder, posttraumatic stress disorder, irritable aggression, and depression-linked aggression. It comes on suddenly, inappropriately, and is triggered by minimal provocation (Nelson & Trainor, 2007). Dodge (1991) postulated that reactive aggression is correlated with parenting styles that are unpredictable, harsh, and threatening. In contrast, controlled-instrumental (proactive) aggression is characterized by a cool, calm demeanor, and subnormal vital sign readings. It is described as calculated, deliberate, and goal directed (Berkowitz, 1993). Controlled-instrumental aggression is connected to a parenting style that is supportive and environments that encourage the use of aggression to achieve goals. Future outcomes for youth displaying controlled-instrumental aggression may include partner violence. Studies indicate that one third of aggressive children

that engage in aggressive behavior use the reactive-impulsive form of aggression, 15% use proactive aggression, and 50% use both (Brendgen, Vitaro, Boivin, Dionne, & Perusse, 2006; Pulkinnen, 1996).

Relational aggression, also known as indirect or social aggression is the third type of aggression seen in children and adolescents, and it occurs more often in girls than boys. It is characterized by behaviors such as gossiping, manipulating friendships, and excluding peers from the “In Group.” Non-verbal acts such as making faces, nasty gestures, eye rolls and the like are also common in relational aggression.

Although not addressed in this proposed study, bullying has become a serious public health problem in the United States. Nansel et al. (2001) found, for instance, that nearly 30% of youth in the United States have either been the victim of bullying, the perpetrator of bullying, or both.

### **Theories on the Causes of Adolescent Aggression**

Over the years, empirical and theoretical literature on the causes of adolescent aggression has yielded numerous hypotheses, theories, and conclusions. It is widely accepted, for instance, that adolescents living in disadvantaged neighborhoods are at increased risk for engaging in aggressive behaviors. One of the more salient proposed hypotheses relates to living in unhealthy environmental circumstances such as: (a) chronic exposure to violence and crime, (b) illegal drug activity, (c) living in poor housing conditions, (d) a lack of environmental greenery, (e) lack of healthy options for escape, and (f) exposure to excessive noise (Aneshensel & Sucoff, 2007; Guite, Clark, & Ackrill, 2006). On an emotional level, youth aggression in the inner city is



exacerbated by (a) fear of harm, (b) hopelessness, (c) anxiety, (d) depression, (e) anger, (f) feelings of mistrust, (g) discouragement, and (h) demoralization (Aneshensel & Sucoff, 1996; Cleveland, 2003; Ross & Mirowsky, 1999; Sampson, Morenoff & Gannon-Rowley, 2002).

Aggressive acts are also linked to misattributing, as deliberate, the motives of other's in fairly innocuous encounters of everyday life, such as inadvertently stepping on another person's toes in a crowded school hallway during bell-time (Graham, Hudley, & Williams, 1992; Berkowitz, 1993; Hudley, Graham, & Taylor, 2007). Media violence found in television, music, computer games, and the internet have psychological effects that, in the short term, instigate aggression in children and adults through two psychological processes (1) situational stimulating processes, and (2) socialization learning processes. Situational stimulating processes have a short-term effect and include (1) arousal and excitation transfer, (2) simple mimicry of aggressive behaviors, (3) priming of aggressive scripts and beliefs (Huesmann, 2008; Berkowitz, 1993). Socialization learning processes have long-term effects, especially for children. This process entails encoding of the following: (1) scripts for behavior, (2) schemas about the world, and (3) normative beliefs about behavior. The mediators between long-term exposure to violence and aggression are (1) normative beliefs that accept aggressive behaviors, (2) hostile world schemas that promote hostility, (3) attributional bias, (4) reduced anxiety reactions to violence (habituation), and (5) social scripts that emphasize aggression.

In 2004, two unrelated studies sought inner-city adolescents' views on aggression (Johnson, Frattaroli, Wright, Pearson-Fields, & Cheng, 2004; Zimmerman et al, 2004). A synthesis of findings from both studies show that the adolescents attribute inner-city adolescent aggression to: (a) lack of home training, (b) family encouragement to retaliate, (c) defending

close friends who have been threatened or jumped, (d) jealousy, (e) beefs between peers, (f) feeling disrespected, (g) drugs in the neighborhood, (h) need for peer acceptance, (i) lack of anger management skills (j) media violence, and (k) neighborhood disadvantage (Johnson, Frattaroli, Wright, Pearson-Fields, & Cheng, 2004; Zimmerman et al, 2004).

### **Personal Factors: Attachment Styles**

#### **Historical View of Early Infant Attachment Formation**

Building on the work of Bowlby (1958), Ainsworth (1964) conducted a study in Uganda in which she observed the interactions of 28 infants, between the ages of 2-15 months, and their mothers. The focus of the study was to assess the strength of mother-infant bonds once attachment was established and to evaluate the levels of security experienced by the infants upon maternal separation. Ainsworth noted that compared to American babies the Ugandan babies seemed to develop more quickly. She attributed this finding to breastfeeding and the intense level of interaction between the infants and adults during the infants' waking hours. To review early attachment behaviors observed by Ainsworth, see Table 2.1 below.

Table 2.0

*Patterns of Attachment Behavior Shown By the Infant in Interaction with His Mother*

Behavior	Earliest Observation	Commonly Observed
Differential crying	8 weeks	12 weeks
Differential smiling	(9 weeks)	(32 weeks)
Differential vocalization	(20 weeks)	?
Visual-motor orientation	(18 weeks)	?
Crying when mother leaves	15 weeks	25 weeks
Following	17 weeks	25 weeks
“Scrambling” over mother	(10 weeks)	(30 weeks)
Burying face in mother’s lap	(22 weeks)	(30 weeks)
Exploration from mother as a secure base	28 weeks	33 weeks
Clinging	25 weeks	40 weeks
Lifting arms in greeting	(17 weeks)	(22 weeks)
Clapping hands in greeting	(28 weeks)	(40 weeks)
Approach through locomotion	(26 weeks)	(30 weeks)

Note: Ages in parentheses were documented after observations were over and may not reflect accuracy in timing of occurrence of the behavior. These behaviors may occur earlier than shown.

Reprinted from "Patterns of Attachment Behavior Shown by the Infant in Interaction with His Mother" by Mary D. Ainsworth, in *Merrill-Palmer Quarterly* yr: 1964, iss: 1, p: 51-58. Copyright © 1964 Wayne State University Press, with permission of Wayne State University Press.

Ainsworth (1964) makes clear three important points about her findings. Firstly, infants play a vital role in the formation of attachment relationships. Secondly, attachment should not be understood to mean close proximity alone. She posits that through a process called middle distance, attachment interaction continues between the mother and infant through distance receptors (Ainsworth, 1979) even if the mother and infant should stray a bit from one another. More specifically, as long as the baby is able to see the mother’s expressions, movements, gestures, and can hear her voice, attachment interaction continues. Thirdly, the baby’s

attachment behaviors are not limited to the mother alone but could also be directed toward anyone with whom the infant consistently interacts. This is a departure from the psychoanalytic literature that holds as primacy in mother-infant attachment the infant's instinctual drive to satisfy its physiological need for food and warmth without the need for socialization. Schaffer and Emerson (1964) studied the socialization behaviors of 60 normal Scottish-born infants from the ages of 5-24 weeks continuing to the age of 18 months old, finding similar results as Ainsworth (1964).

### **The "Strange Situation"**

Referencing findings from the Ugandan study, Ainsworth and Wittig (1969), conducted a landmark, longitudinal study known as the "Strange Situation." The investigators held that a crucial element in the development of healthy attachment is for infants to develop the capacity to explore their world, "using the mother as a secure base" (p. 112). The purpose of the study was to explore the growth of attachment behaviors between 14 mother-infant dyads of White, middle class families recruited from private practices of pediatricians (Ainsworth & Wittig, 1969). The study began when the infants were 3 weeks old and continued for one year. Findings from this study led to the development of a three-group (A, B, and C) attachment classification system that has research and psychotherapeutic applications for today. Group "A" infants' are described as demonstrating little distress when separated from their mothers and are classified as having an insecure-avoidant attachment style (Ainsworth & Wittig, 1969). Group "B" infants' are classified as securely attached because they demonstrate obvious signs of anxiety when separated from their mothers, but adapt upon her return unless they are subjected to further distress (Ainsworth & Wittig, 1969). Finally, Group "C" infants' show obvious signs of anxiety and

other maladaptive characteristics upon separation from their mothers, but upon reunion, vacillate between a desire for close proximity and shunning them (Ainsworth & Wittig, 1969). Early attachment theorists posited that mother-infant separation is troubling to a child and may have long-lasting and far-reaching negative consequences (Bowlby, 1951; Ainsworth, 1969).

### **Disorganized (Type D) Attachment**

Main and Solomon (1990) reviewed replication studies of the “Strange Situation” that included samples from low to middle-income families, infants with depressed parents, and parents with a history of child maltreatment noting that the investigators of those studies observed attachment styles that were unclassifiable in the Ainsworth and Wittig (1969) classic three-group taxonomy. This finding led to the development of the disorganized/disordered (Type D) attachment classification. Main and Solomon (1990) described type D attachment behaviors for a group of 12-18-month-olds in this way:

(1) sequential display of contradictory behavior patterns, (2) simultaneous display of contradictory behavior patterns, (3) undirected, incomplete, and interrupted movements and expressions, (4) Stereotypies, asymmetrical and mistimed movements, and anomalous postures, (5) freezing, stilling, and slowed movements and expressions, (6) direct indices of apprehension regarding parent, and (7) direct indices of organization or disorientation. (pp 136-139). They also put forth that these behaviors are linked to depressed mood, apprehension toward parents, and the avoidance and ambivalence observed in Type A and Type C attachment styles.

Carlson (1998) sought to validate Main and Solomon's (1990) theories on attachment disorganization and disorientation (Type D) through a prospective longitudinal study utilizing data collected on participants from the age of 24 months until the age of 19. Two main goals of the study were to: (1) identify etiologies of Type D attachment associated with patterns of care as opposed to neuropathologies and (2) to identify any psychopathological and/or dissociative consequences associated with Type D attachment. Independent variables were comprised of endogenous (infant temperament and mother's medical history) and environmental variables (history of infant abuse and quality of mother's care). The outcome variables, measured at specific age-based periods, consisted of: (a) quality of mother-child relationship, (b) preschool behavior problems, (c) teacher's report form, (d) emotional health rank, (e) boundary dissolution, and (f) psychopathology ratings for affective disorders, schizophrenia, and dissociation. The quality of mother-infant attachment was assessed utilizing the Strange Situation methodology (Ainsworth & Wittig, 1969). Overall findings of the study support associations between environmental factors and the development of disorganized attachment in infants, children, and adolescents. There was no support for a relationship between endogenous factors and disorganized attachment patterns. Findings also indicate that attachment disorganization may mediate the effects of the quality of caregiving in the development of future psychopathologies in children and adolescents (Carlson, 1998).

## **Adolescent Attachment**

### **Internal Working Models**

Internal working models are mental representations that are stored from infancy and beyond (Bowlby), including memories. They reflect how individuals view the world and

perceive themselves functioning in it (Bowlby, 1969). Lee and Hankin (2009) stated it this way, “The accumulation of interactions and experiences with the caregiver is posited to provide the infant with information that is eventually used to organize an individual’s expectations of other and understanding of rules for how the world operates,” (p. 220). Inherent in the development of these internal working models, is the process of identifying a primary attachment figure and appraisals of that attachment figure’s availability and responsiveness in meeting the needs of the adolescent for safety and security. Reassuring beliefs about the attachment figure’s ability and desire to meet these needs facilitate the development of secure attachment. Conversely, the belief that an attachment figure lacks availability and interest in the adolescent leads to insecure attachment (Bowlby, 1973; Cawthorpe, West, & Wilkes, 2004; Kobak, Sudler, & Gamble, 1992, Irons & Gilbert, 2004; Muris, Meesters, van Melick, & Zwambag, 2001). Included in adolescents’ internal working models, are schema comprised of self-worth appraisals that are based on his/her interactional experiences with the primary attachment figure. Felt love gives rise to self-perceptions of being loveable and rejection as unlovable (Bowlby, 1973; Irons & Gilbert, 2004). Turnage (2004) tested this concept in a study exploring the association between self-esteem and mother-daughter relationships in a sample of African American adolescents. Findings indicated a significant, positive correlation, ( $r = .52, p < .001$ ), between having a loving and supportive mother/daughter relationship and global self-esteem. Positive and negative self-assessments have far-reaching consequences for children and adolescents (Bowlby, 1973; Irons & Gilbert, 2004; Turnage, 2004).

In his early conceptualizations of internal working models, Bowlby (1973) put forward three controversial proposals: (a) confidence in the availability and responsiveness of an attachment figure, on an as needed basis, will decrease the susceptibility toward growth patterns

of fear, (b) confidence in attachment figures slowly evolves from infancy through adolescence with outcomes remaining stable throughout life, and (c) the content of internal working models is based on prior experiences with the primary attachment figure and is accurately depicted. Furthermore, Bowlby (1973) postulated that the quality of early attachment experiences impacts on personality development and one's ability to self-regulate and accommodate. Secure attachment aids in equipping young people for effective negotiation of developmental tasks, while anxious attachment contributes to deviant behavior and dysfunctional outcomes (Bowlby, 1988; Cicchetti, Cummings, Greenberg, & Marvin, 1990).

### **Adolescent Attachment Reorganization**

Adolescence is a period in which youth are transitioning from dependence on parents as the primary caregivers to laying the groundwork for independence, including preparing developmentally for someday becoming the primary attachment figure in the lives of their own children (Allen & Land, 1999). Ainsworth (1989) and Kobak et al. (2007) point out that just as major hormones influence adolescents' growth and development they also initiate marked changes in the adolescent attachment system. One manifestation of change is attachment reorganization. That is, adolescents' shifting from using their primary attachment figure, most often the parents, as the secure base from which to explore the world to developing affectional bonds with potential sex partners and building relationships with individual peers and peer groups. Attachment reorganization is also a period in which a new primary attachment figure may emerge (Ainsworth, 1989; Allen & Land, 1999; Fritsch, Goodrich, & deMarneffe, 1992; Kobak et al. 2007). Although a change in adolescents' attachment systems is normal and desirable, timing of the reorganization is critical to healthy life outcomes (Kobak et al. 2007).



Premature reorganization may occur, for instance, when adolescents' perceive their parents as unavailable and nonresponsive to their attachment needs (Kobak et al. 2007). A potential outcome of premature reorganization is displacement of the parents from the role of primary attachment status to that of a secondary or tertiary status, thereby, elevating a peer or a romantic partner to the primary attachment status (Kobak et al. 2007). The new primary attachment figure then becomes the secure base from which the adolescent explores his or her world (Kobak, et al. 2007). Premature attachment reorganization may place adolescents at increased risk for experiencing depression, anxiety, aggression, and early pregnancy (Kobak, et al. 2007). Conversely, delayed reorganization of the hierarchical attachment system has the potential for increasing dependency on parents and straining the adolescent-parent relationship, thereby, leaving adolescents' vulnerable to the development of depression and anxiety (Kobak et al. 2007).

### **Attachment in African American Adolescents**

For decades, attachment theorists have proposed that a secure attachment relationship between infants, children, and adolescents and their primary caregivers is essential to fostering healthy development and for building strong interpersonal relationships (Ainsworth, 1964; Ainsworth & Wittig, 1969; Bowlby, 1958, 1973; Lamb et al. 1984; Kobak et al, 2007). Secure attachment contributes, for example, to higher levels of self-esteem, the ability to self-regulate emotions and behaviors, and compassion and empathy toward others. Insecurely attached children and adolescents, on the other hand, are at increased risk for the development of depression, anxiety, strained interpersonal relationships, and patterns of out of control anger and aggression (Kobak et al, 2007).

While many cultures are beginning to accept the validity of attachment theory, (Constantine, 2006; Sagi, 1990), unanswered questions still exist on just how the attachment process is influenced by culturally specific variations. Jackson (1993), for instance, questioned the validity of attachment theory in African American infants because so many of them consistently have multiple caregivers as opposed to a single primary caregiver as in the Ainsworth and Wittig (1969) Strange Situation study. Moreover, African American families experience disproportionately higher rates of poverty (U.S. Census Bureau, 2011), higher levels of teen birth rates (Centers for Disease Control and Prevention, 2009), and exponentially higher rates of incarceration in the U.S. penal systems than other racial/ethnic groups (The Sentencing Project, 2009). Levy & Orians (1999) found that these and other factors such as neglect, abuse, and multiple placements in out-of-home settings place youth at increased risk for the development of disordered attachment which is associated with increased tendencies toward violence and antisocial personality disorder. Therefore, further exploration of these linkages in African American adolescents is necessary and may prove essential to the development of strategies for reducing aggression in this vulnerable population.

Furthermore, although empirical and theoretical literature on attachment has flourished for over 50 years (e.g. Allen & Land, 1999; Allen & Miga, 2010; Bakermans-Kranenburg, van IJzendoorn, and Kroonenberg, 2004; Barnett, Kidwell, & Leung, 1998; Bowlby, 1958, 1969, 1973, 1980; Constantine, 2006; Hawkins-Rogers, 2007; Irons & Gilbert, 2004; Kubak, Rosenthal, Zajac, & Madsen, 2007; Lee & Hankin, 2009; Maier, 1994; Muris, Meesters, Morren, & Moorman, 2004; Shumaker, Deutsch, & Brenninkmeyer, 2009; West, Rose, Spreng, Sheldon-Keller, & Adam, 1998), a review of attachment literature demonstrates that African American adolescents are either under-represented in studies (Coley, 2003; Constantine, 2006) or are

excluded altogether. For instance, Bakermans-Kranenburg et al. (2004) explored attachment security differences between African American and White children, in a secondary analysis utilizing the NICHD Early Childhood Research Network data set. The study sample included 1002 White children compared to only 142 African American children. Several years later, Lee and Hankin (2009) examined the associations among attachment insecurity, anxiety, depression, low self-esteem, and dysfunctional thinking. Their total sample size was 350 adolescents comprised of 53% White, 21% African American, and 26% other races. Irons and Gilbert (2004) show the same trend of under-representing Blacks in a study they conducted in the UK when examining the relationships among social rank, depression, and anxiety with a sample consisting of 140 adolescents of which 63% were White British and only 4% Black Afro-Caribbean. In a pilot study, West et al. (1998) tested the psychometric properties of the Adolescent Attachment Questionnaire (AAQ) on a sample of Canadian adolescents consisting of 133 participants. Of those, 86% were White. Finally, of all the literature included in the review, only two had samples comprised of entirely African American participants, Constantine (2006) and Barnett et al. (1998). In a sample of 69 African American preschoolers and their primary caregivers, Barnett et al. (1998) explored the relationship between attachment security, shared caregiving, and parenting style. The Constantine (2006) study examined the relationship among adolescent's perception of family conflict, adolescent depression, and attachment to parents in a sample of 283 African American adolescent females.

### **Adolescent Influencing Factors**

#### **Quality of Adolescent Attachment Relationships and Depression**

Kobak, Sudler, and Gamble (1992), in a study using adolescent self-reports, parental questionnaires, and parent-teen interaction observations, at two time periods, sought to test their hypotheses that poor maternal –teen relationships and insecure attachment are factors in developing depressive symptoms in adolescence. The sample consisted of forty-eight teens and their mothers. The mean age of the teens was 15.7. Females outnumbered males 27 to 21. Racial ethnic information was not provided. Study findings show that pathways to depressive symptoms include insecure attachment strategies, life stress, and difficulties in teen-mother interactions. Results also showed a higher prevalence rate of depressive symptoms in females versus males. Depressed males, more than females, were more prone to displays of hostility and anger. Finally, strong associations between dysfunctional parent-teen communication, maternal dominance, anger, and teen depression were found. Strengths of the study include a gender based discussion on the symptoms of depression and dysthymia, inclusion of mothers as study participants, direct observation of teen and mother interactions, and a sample that included both genders. A weakness of the study was exclusion of information on sample race/ethnicity.

Constantine (2006) examined the mediating effects of adolescent-parental attachment between adolescent depression and perceived family conflict in a group of African American high school students from both single parent and two parent family homes. Multivariate analyses of the variance showed no significant differences in relations between family conflict, dimensions of parent attachment, and depression in adolescents living in single parent and two parent families [Pillai's Trace = .02, (F95, 277) = 1.34,  $p > .05$ ]. Path analysis showed a direct significant and positive relationship between perceived family conflict and depression ( $p < .001$ ) indicating that perceived family conflict and depression are correlated. Moreover, path analysis showed a significant and negative effect between perceived family conflict and parental

attachment ( $p < .001$ ). Path analysis also showed a significant and negative effect between parental attachment and depression ( $p < .001$ ) suggesting that higher levels of depression in this sample is correlated with lower levels of parental attachment. This study also found moderate correlations between depression and three subscales of the Inventory of Parent and Peer Attachment scale, Trust ( $r = -.36, p < .001$ ), Communication ( $r = -.32, p < .001$ ), and Alienation ( $r = -.32, p < .001$ ) and The Family Conflict Scale -Likelihood subscale ( $r = -.43, p < .001$ ). These findings support assertions by Bowlby (1969) that adolescents' perception of whether or not attachment figures are available and willing to meet the attachment needs of the adolescent influences the quality of the attachment relationship and adolescents' views about the self. Another strength of the study is that it makes an important contribution to expanding the limited knowledge that currently exists on attachment in African American adolescents. Finally, considering the high rates of aggression related deaths in African American males, replication studies should include African American males, and for greater generalizability, recruitment of a sample from more than one school or setting.

Muris, Meesters, van Melick, and Zwambag (2001) examined associations among quality of attachment, self-reported attachment style, depression and anxiety in a sample of early adolescents using the Attachment Questionnaire for Children (AQ-C), an adapted version of Hazan and Shaver's (1987) Attachment Questionnaire. The total sample size was 155, including 87 males and 68 females. The mean age of participants was 12.8 years. Participants were asked to select a self-reported attachment style based on the traditional three-classification taxonomy of (a) secure, (b) avoidant, and (c) ambivalent. Study findings showed that the sample distribution of self-reported attachment styles was as follows: 72.9% secure, 16.8% ambivalently attached, and 10.3% avoidantly attached. Overall, approximately one quarter of the adolescents (27.1%)

classified themselves as insecurely attached. Depression in this sample was measured with the Children's Depression inventory (CDI; Kovacs, 1981). Findings reveal that the ambivalently and avoidantly attached groups had the highest anxiety and depression scores, and the securely attached group had the lowest anxiety and depression scores (Muris et al., 2001). Study findings seem to support the validity of assessing self-reported attachment style in children and adolescents using the AQ-C. A limitation of the study is that the AQ-C only measures self-reported attachment style with peers and not attachment to the primary caregiver, which is posited to be the most important influencing factor in the development of attachment security. To their credit, there is no attempt on behalf of the researchers to suggest that the AQ-C instrument accurately depicts early infancy attachment. A second study limitation is the fact that type D (disorganized attachment) was not measured. This is an important omission given the proposed association between disorganized attachment and long-term psychopathological outcomes (Levy & Orlans, 1999). This study could have been strengthened by including an operational definition of depression, providing participants ethnic/racial background information, and inclusion of gender based comparisons.

Cawthorpe, West, & Wilkes, (2004) administered a series of self-report questionnaires to a group of 73 female adolescents in a psychiatric hospital to investigate the correlation between felt attachment security, perceived unavailability of the primary caregiver, angry distress, and depression. Fifty-one of the participants were in a case group with depression and 22 others, having other diagnoses, were in the comparison group. The mean age of the participants was 15.5 years. Thirty-three of the participants lived in a two biological parent home, 14 lived in homes that included one step parent, 18 of the youth lived with a single parent, and 8 lived with either a blood relative, adoptive parents, or other guardian. The authors utilized a multivariate

logistic model. Findings revealed that the majority of the participants claimed their mothers as their primary attachment figure, one identified their father, and three their adoptive mothers. The overall model fit was significant (chi-square = 39.76, 6 df, N 73,  $p < 0.0001$ ). Findings showed that the trend toward inclusion in the depressed group was significantly higher for those adolescents reporting angry distress and perceived unavailability of their primary attachment figure, and for those struggling with felt security. Results also showed that the majority of adolescents in the depressed groups lived in single parent families, and that adolescents living with both biological parents, a single biological parent, or some other composition was at higher risk for inclusion in the depressed group than those living with step parents. The authors suggest that this finding may be related to the fact that single parents are solely responsible for the care and upkeep of the family, thereby, making them less available for meeting the attachment needs of their children. This study has several strengths. First, it is one of few studies examining the association between attachment security and depression in a group of psychiatrically hospitalized adolescents, making the findings richer. Secondly, based on the following factors: 1) higher than average rates of incarceration in the U.S. penal system (The Sentencing Project, 2009), 2) higher than average levels of teen birth rates (Centers for Disease Control), 3) higher than average rates of poverty (U.S. Census Bureau, 2011), and 4) infants having consistent exposure to multiple care-givers, as opposed to a single primary attachment figure (Jackson, 1993), these study findings may have particularly important implications for predicting and treating aggression in African American adolescents. Limitations of the study beyond those mentioned by the investigators include exclusion of males, and omitting the racial/ethnic backgrounds of the sample.

In a different study, Irons and Gilbert (2004) explored the relationship among four variables: attachment security, social rank functioning, depression, and anxiety in a group of male and female early adolescents. Results show a moderately significant negative correlation between depression and secure attachment ( $r = -.36 < p .001$ ), a moderately significant positive correlation between depression and ambivalent attachment ( $r = .34 < p .001$ ), and a moderately significant correlation between avoidant attachment and depression ( $r = .35 < p .001$ ). For additional study findings see Irons and Gilbert (2004). Quite often, literature on attachment security, depression and/or anxiety seems to imply that insecure attachment alone is a predictor of depression and anxiety. One strength of the Irons and Gilbert (2004) study is showing a link between attachment security, depression, anxiety and the third variable of social rank systems (Irons & Gilbert, 2004) instead of focusing on attachment as a primary factor alone. An additional strength of the study is the inclusion of Black adolescents. However, given the fact that the term depression may have multiple meanings and contexts in which it may be applied, one weakness of the study is that it did not provide a well-defined definition of depression or its accompanying symptoms.

### **Anger Expression**

In a review article on childhood anger, Modrcin-McCarthy Pullen, Barnes, and Alpert, (1998) stated, “Anger is likely to be both a useful tool to survive and a disease in which the heart turns to stone. Temper tantrums, hitting, biting, killing, suicide, depression, and a myriad of other behaviors can be signs of anger in children” (p. 69). In contrast, adolescents may express anger through rebelliousness, antisocial behaviors, sarcasm, arguing, and depression (Modrcin-McCarthy et al., 1998). These examples illustrate the ways in which children and adolescents are



struggling to cope with their anger and the need for more research and interventions to help them.

According to Spielberger (2009), the anger expression construct, in children and adolescents, has three main components. They are anger expression, which has two sub-components: anger expression-in and anger expression-out, anger control that has two sub-components: anger control-in and anger control-out, and the state-trait taxonomy. State anger is the subjective feelings of anger that the child or adolescent may be experiencing at any given moment in response to any perceived threat. Trait anger, on the other hand, refers to the unique tendency or disposition the child or adolescent has toward the experience of anger over time. Anger expression-out in children and adolescents describes how they express their angry feelings toward others or objects through use of physical and verbal aggression. Anger expression-in describes the tendency to hold in or suppress angry feelings. Finally, anger control is the effort a child or adolescent exercises to control their angry feelings.

Jones, Peacock, and Christopher (1992) investigated adolescent views on acceptable and unacceptable forms of anger expression and the ability to recognize when they are angry. The sample was 56 Black high school students consisting of 27 males and 29 females. Grade levels of participants were 14 ninth graders; 8 tenth graders; 6 eleventh graders; and 28 twelfth graders. Seventy-one percent of the students lived in single-parent homes and 28% lived in two-parent homes. Study findings show that 100% of the study participants reported being aware of when they are angry. The ranking from highest to lowest of people the students identified as making them angry was friends (66%), mother (62%), other students (48%), and siblings (43%). The ranking of people making them most angry were friends (27%), mother (20%), father (11%), and

siblings (11%). (Note that participants were allowed to choose more than one person). They were also asked to identify one person that makes them most angry but to whom they cannot express their anger. Thirty-six percent identified their mother, 13% identified their teacher, and 11% chose their father. Methods that participants chose as being acceptable for coping with anger were talking things out with someone (43%), physical activity (21%), and talking to the person with whom they were angry (9%). Unacceptable methods included fighting, killing someone, or committing suicide. The students were asked to describe how they feel when they are angry. Thirty-two percent feel like crying, 36% feel like committing acts of violence, 39% become depressed, and 46% become silent. However, the majority reported they would probably respond by being silent. Finally, study findings suggest that there are no significant differences in anger expression between adolescents living in single parent homes and two parent homes. Although not included here, researchers found similar results in a sample of racially mixed middle school students (Jones & Peacock, 1992).

### **Differences in Anger Expression**

Although anger is a normal emotion that everyone feels at times, there are differences in what triggers anger and how it is expressed from one person to another. For instance, preschoolers and children express anger towards peers and siblings because of toys and objects and in relation to being physically harmed by their peers (Modrcin-McCarthy et al.,1998), whereas, irritation with other people is more likely to arouse adolescent anger (Jones & Peacock, 1992). Jones, Peacock, and Christopher (1992) found that younger adolescents identified their mothers as a main target of their anger more often than did older teens. In contrast, teens reported having greater difficulty expressing anger toward their fathers than their mothers, for

instance, in situations where the father is absent from the home. Schwartzberg (1987) postulates that adolescents might refrain from expressing anger toward their father's for fear of retaliation.

Concerning gender differences in anger expression, America has a long history of gender bias. For example, anger expression has traditionally been more acceptable for males than for females. This double standard may have contributed to the notion that outward displays of anger by women is considered un-lady-like and that women are more apt to be docile and less likely to be anger prone than their male counterparts. Today, however, in the continued fight for equality women appear to be expressing their anger more openly. As an illustration, Spielberger, Jacobs, Russell, and Crane (1983) showed in a sample of 3,000 male and female junior high and high school students that expression of state and trait anger was nearly equal in both genders. In a different study that included a sample of 1,114 high school adolescents, Spielberger et al. (as cited in Kollar et al., 1985) found that anger expression scores of females exceeded those of males.

In a sample of 262, majority White, early and late adolescents (mean age 13.4 years) Stapley and Haviland (1989) explored differences of how males and females express their emotions. Findings show that anger was the number one negative emotion expressed by all adolescents. Results of an orthogonal factor analysis of the salient emotions scale yielded three factor loadings: (I) Inner-passive Negative Emotions, (II) Outer-active Negative Emotions, and (III) Positive Emotions. Gender differences were found in factor loadings for anger. Under Inner-passive Negative Emotions, the factor loading for boys was .48 and for girls .34. Under Outer-active Negative Emotions, the factor loading for boys was .61 and for girls .76. Chi-square analysis was used to examine gender differences in the frequency in which adolescents

experience discrete emotions in a wide variety of settings, including anger. Results show a significant difference in the percentage of girls and boys in experiencing anger in situations of aggression [ $\chi^2 = 31.48$ ,  $df = 8$ ,  $p < .001$ ], girls scoring higher.

Concerning racial differences in anger expression, Jones and Peacock (1992), in their study on self-reported anger in adolescents, solicited the views of Black and White youth on the role anger plays in depression and suicide. Results of a chi-square analysis show that more Black youth than White saw no correlation [ $\chi^2 = 6.31$ ,  $df = 2$ ,  $p < 0.0424$ ]. On the other hand, Jones, Peacock, and Christopher (1992), note that racial discrimination is a factor in the development of anger in Blacks.

The literature in this section provides rich insights into anger expression as relates to middle and high school students, including racial and gender differences. Moreover, given the rates in which African American youth are both the victims and perpetrators of violence and aggression, these findings on anger expression are important. Specifically, they provide valuable insights into what triggers anger in African American youth and correlations between anger, depression, suicide, and aggression in this vulnerable population. They also describe some of the struggles that African American youth have in coping with their anger, the targets of their anger, and self-reported strategies for coping with their anger, healthy and unhealthy. Overall findings lend support to the need for more studies examining the correlation between anger, aggression, and depression in African American adolescents. Regarding the studies weaknesses, the Jones and Peacock (1992) and the Jones, Peacock, and Christopher (1992) studies could have been strengthened with larger sample sizes. Additionally, the Jones and Peacock (1992) study seemed to suggest that its focus was on self-reported anger in adolescents, but later appeared to pivot

towards examining correlations between anger, depression, and suicide. Moreover, the organization and presentation of study findings was, at times, difficult to follow.

### Summary

African American males between the ages of 10-24 experience aggression related death rates that are exponentially greater than all other racial classes combined (CDC, 2010a). For instance, 60 of every 100,000 African American males is a victim of homicide compared with 3 of every 100,000 Caucasian males (CDC, 2010a). Despite this data, little is known about the factors contributing to this serious health disparity in African American adolescents.

Bowlby (1958, 1969, & 1973) put forth that a relationship exists between attachment style and aggression. One goal of this study was to examine the strength of this correlation in African American adolescents. A focal point of this literature review was to examine the theoretical and empirical underpinnings of self-reported attachment style, the origins and landmark studies of attachment theory, and attachment in adolescents, including attachment in African American adolescents. Theoretical and empirical attachment literature, from infancy through adolescence, was found to be in abundance in Caucasians. However, it was scant in African Americans across all age groups from infancy through adulthood.

Depressed mood is one of the outcome variables in this study. Therefore, another objective of this literature review was to examine elements that help to define and describe adolescent depressive symptoms, including exploration of the relationship between depressed mood, quality of attachment relationships with the primary caregiver, and attachment style in

African American adolescents. Results of the literature search show that a gap in literature exists on these correlations in African American adolescents.

The second outcome variable in this study is adolescent aggression. As some literature suggests that a relationship exists between anger expression and aggression in adolescents (Brunner & Spielberger, 2009), another goal of this literature review was to explore factors associated with each of these constructs, and to examine the correlation between them in African American adolescents (Jones, Peacock, and Christopher, 1992). Again, scant literature was available on these associations in African American adolescents.

## **Chapter 3**

### **Methods and Procedures**

This chapter describes the methods utilized for conducting this study. It includes a description of the study design, sample, setting, details about the process of data collection, measures, and the plans for data analyses. Prior to data collection, approval for conducting the study was obtained from the University of Michigan Health Sciences and Behavioral Sciences Institutional Review Board.

#### **Study Design**

This descriptive correlational study design is based on the theory of attachment as proposed by Bowlby (1958, 1969, 1973, 1980) and Ainsworth (1964, 1969, 1989). Included in the study is descriptive information about the study participants including age, gender, family structure, school grade level, and self-reported attachment style. The study was designed to explore possible correlations among the constructs of personal factors (age, gender, current grade in school, and self-reported attachment style) influencing factors (quality of parent/peer attachment relationships and anger expression), and the outcome variables (aggression, and depressed mood) as diagramed in the conceptual model.

#### **Sample and Setting**

The target population for this descriptive correlational study was 140 male and female urban African American adolescents ranging in age from 15 to 17 years. In effort to increase diversity within the sample and to decrease the potential for systematic variation or systematic bias youth were recruited from four different recruitment sites in Southeast Michigan from three

geographical areas (Detroit, Inkster, and Ypsilanti). The first group of youth were recruited from a university program in which high school students, in addition to their high school classes, are taking college level classes. The second group was recruited from an area surrounding and also from within a human services agency located in inner-city Detroit. The third group was recruited from a local church youth program, and the fourth group was recruited from an urban high school.

### **Selection criteria for study participation.**

Inclusion criteria consisted of self-identifying as an African American, ranging in age from 15-17, a signed parental consent form, and a signed assent from the adolescent. The only exclusion criterion was not self-identifying as an African American. The rationale for these inclusion criteria were 1) African American adolescents experience aggression related health disparities, including death, at rates exponentially higher than those of all other ethnic/racial populations, 2) to insure having a homogeneous sample along the lines of race/ethnicity and developmental stage, and 3) to facilitate adding to the current scant body of knowledge on attachment, aggression, and depressed mood in African American adolescents.

### **Selection of sample size.**

Numerous sources point to the importance of having an adequate sample size for achieving set goals in quantitative research (e.g. Burns & Grove, 2005; Cohen, 1992; Pallant, 2005; Tabachnick & Fidell, 2007). One recommended method for determining sample size is power analysis. Factors to be considered in conducting power analyses include study design, analytic strategy, desired power, number of predictor variables, anticipated effect size, and alpha



level. For this predictive correlational design, the desired power was .80, the number of predictor variables was five, alpha level .05, anticipated effect size medium (0.15), and the planned analytical strategy was standard multiple regression. Based on these parameters, power analysis indicated that a sample size of at least 91 was recommended (Burns & Grove, 2005; Cohen, 1992; Pallant, 2005; Tabachnick & Fidell, 2007). The sample size planned for this study was 140, which was more than sufficient.

## **Procedures**

### **Recruitment and Consent**

Prior to receiving IRB approval, the following steps were implemented in preparation for recruiting participants for the study. Refer to appendices A, B, and C to review recruitment materials submitted with the IRB application.

After IRB approval, the following steps were implemented to recruit participants for the study

- Social service agencies, high schools, teen health clinics, churches, and libraries were contacted to assess their interest and willingness to allow recruitment of teens for participation in the study;
- In some cases recruitment flyers and permission slips were disseminated door to door, near high schools and bus stops, and other places where teens were clustered.
- For agencies and schools granting permission, flyers with investigator's contact information and parental permission slips were either allowed to be posted within the

agency for easy access by the teens or arrangements were made to distribute the information to the teens to take home to share with their parents;

- In the case of Inkster High School, the school collected the parent permission slips and notified the investigator when to pick them up. More often than not, parents contacted the P.I. for study information and mailed signed permission slips to a designated address. In other instances, parents signed permission slips at the study site locations, or teens brought signed permission slips to the study sites prior to participating in the study. No teen was allowed to participate in the study without a signed parent permission slip and signed assent form; and
- all qualified youth whose parents signed permission slips were eligible to participate in the study.

## **Data Collection**

The study participants were requested to complete a total of six questionnaires which included: 1) a brief demographics sheet (included: race, gender, age, family structure, and current grade in school), 2) Center for Epidemiological Studies Depression Scale for Children (CES-DC), 3) Inventory of Parent and Peer Attachment-Revised (Gullone & Robinson, 2005), 4) Attachment Questionnaire for Children [AQ-C] (Muris et al., 2000), 5) State-Trait Anger Expression Inventory-2 Child and Adolescent [STAXI C/A] (Brunner & Spielberger, 2009), and 6) The Aggression Questionnaire (Buss & Perry, 1992). Based on the estimated time requirements provided by the authors of the questionnaires, the time requirement for completing the six surveys was approximately one hour. However, most of the youth completed all surveys within 30 minutes.

On each day of the study, the study participants met with the investigator in a private, quiet room as designated by the study location. A packet containing all of the surveys were distributed to each of the study participants. Participants were then instructed to remove the questionnaires from the packet, and instructions were given for how to complete each of them, including to carefully read all instructions on each questionnaire, answering the questions as they honestly feel, informing them there are no right or wrong answers, no time limitations, and encouraging them to raise their hands if they have any questions during the study. Upon completion of the questionnaires, the questionnaires were collected and placed in an envelope containing the youth's numerical identification code and placed in a secure receptacle. At that point, the youth's participation in the study was complete. The youth then received their incentive gift, signed a document verifying receipt of the gift, and exited from the survey site.

### **Confidentiality and security.**

To protect the privacy of youth and/or their family, no names were used on the questionnaires, a numerical identification code was used instead, and nothing related to the study went into any files or records of the schools, churches, or agencies where youth were recruited or that were used as study sites. All completed questionnaires were locked in a storage cabinet located in the investigator's office for a period of no more than 365 days allowing the investigator time to enter the questionnaire information into a password-protected computer that can only be accessed by the investigator. In addition, to further protect the youths' privacy, the answers he/she gave on the questionnaires were not made available to parents or the staff of any agency where the youth were recruited or that were used as a study site. Once the investigator has finished entering the information from the questionnaires into the computer, the P.I. will

destroy the questionnaires by shredding them. The investigator plans, however, to keep the information that is stored on the computer for future use. The information stored on the computer does not include any information that could identify the youth participant or his/her family. To further protect the youth's privacy, 1) surveys were administered in private classroom-type settings designated for use by the study participants only, 2) all study materials were collected and removed from the premises in a secure carrying case, 3) only numerical codes were used as identifiers on the surveys, 4) study participants did not wear any name tags before, during, or after completing the surveys, and 5) the surveys were locked in a secure file cabinet.

#### **Potential risks and benefits.**

While it was unlikely, in the event that a youth would have become upset while answering the survey questions, each youth was provided with contact information for a teen health clinic, approved by the IRB, for the purpose of contacting a counselor to speak with about their feelings. Participants were informed that participation in the study may not offer any direct potential benefit to them, but may have future societal benefits in the following ways: 1) adding to the existing body of knowledge on attachment, aggression, and depressed mood in African American adolescents, 2) providing a conceptual model for assessing the associations among these constructs, and 3) using the study outcomes to aid in the development of evidence-based nursing interventions for addressing aggression and depressed mood in African American adolescents.

## Measures

**Demographic information** – adolescents were requested to complete a general demographic information checklist consisting ethnic/racial background, age, gender, current grade in school, and the person/s with whom the adolescent resides most of the time. Refer to Appendix D.

**Adolescent Self-reported Attachment Style** – Self-reported attachment style was measured with the Attachment Questionnaire for Children [AQ-C] (Muris, Mayer, and Meesters, 2000). The AQ-C is a widely used measure of self-reported attachment style (Brown & Whiteside, 2008; Mofrad, Abdullah, & Uba, 2010; Mofrad, Abdullah, & Samah, 2010; Muris, Messters, van Melick, and Zwambag, 2001; Muris, Meesters, & van den Berg, 2003; Muris, Meesters, Morren, & Moorman, 2004; Muris, Maas, 2004). It was developed by Muris, Mayer, and Messters (2000) as an age-downward version of Hazan and Shaver's (1987) single-item attachment instrument for adults. The self-reported attachment style classifications of the instrument are based on the Ainsworth and Wittig's (1969) "Strange Situation" attachment security three classification taxonomy (secure, avoidant, and ambivalent). The AQ-C is comprised of three sets of descriptions of how youth might relate to their friends. Description 1 is based on secure attachment, description 2 is based on avoidant attachment, and description 3 is based on ambivalent attachment. Participates were asked to read all of the descriptions and choose the one they felt best described them (Muris, Mayer, and Meesters, 2000). Refer to Appendix F.

Because the AQ-C is a single-item scale, it has been difficult to measure its psychometric properties. To assess the validity of the AQ-C, Muris, Meesters, van Melick, and Zwambag

(2001) used the instrument to examine the associations among the quality of attachment, self-reported attachment style, depression, and anxiety in a sample of early adolescents. The total sample size was 155, including 87 males and 68 females. The mean age was 12.8 years. The sample distribution of self-reported attachment styles was 72.9% secure, 16.8% ambivalently attached, and 10.3% avoidantly attached. Overall, 27.1% of the sample self-identified as insecurely attached. The relationship between the quality of parent and peer attachment relationships (measured with the Inventory of Parent and Peer Attachment [IPPA]) and self-reported attachment style (measured with the AQ-C). Findings from multivariate analysis of the variance (MANOVA) and univariate analyses of the variance (ANCOVA) showed a significant effect of AQ-C status ( $F(12,290) = 5.5, p < 0.001$ ). Additionally, mean IPPA scores showed that self-reported secure attachment style was associated with higher levels of trust and lower levels of alienation in their relationships with parents and peers (Muris, et al., 2001). In contrast, youth with insecure attachment style had lower quality relationships with parents and peers (Muris et al., 2001). Regarding the relationship between self-reported attachment style (measured by the AQ-C) and depression and anxiety, securely attached adolescents experienced lower levels of depression and anxiety, while insecurely attached adolescents experienced more (Muris, et al., 2001).

The single item AQ-C scale was adapted for readability and used in two recent studies to measure self-reported attachment style in 6-8 year old children (Mofrad, Abdullah, & Samah; Mofrad, Abdullah, & Uba, 2010). It consisted of 11 items describing characteristics of secure, avoidant, and ambivalent attachment styles. The adapted version demonstrated high internal consistency in both studies. The Mofrad, Abdullah, and Samah (2010) study reported internal consistency scores for the AQ-C adapted scale of .98 (secure), .93 (avoidant), and .98

(ambivalent) styles of attachment. Similarly, Mofrad, Abdullah, and Uba (2010) reported internal consistency scores for the AQ-C adapted scale of .89 (secure), .93 (avoidant), and .89 (ambivalent) styles of attachment. Refer to table 3 below to compare the descriptions of the original AQ-C (Muris, Mayer, & Meesters, 2000) and the 11 item adapted version (Mofrad, Abdullah, & Samah; Mofrad, Abdullah, & Uba, 2010). Finally, Muris et al. (2003) cautioned that some youth might find it difficult to self-identify with insecure attachment and therefore choose the secure attachment description, which could result in underreporting of insecure attachment.

Table 3.0

*Comparison of the 1-Item and 11-Item Attachment Questionnaire for Children (AQ-C ) Scales*

AQ-C Original Version (Muris, Mayer, & Meesters, 2001)	AQ-C 11-Item Adapted Version ( Mofrad, Abdullah, & Samah, 2010)
Description of Secure Attachment	Description of Secure Attachment
1. I find it easy to become good friends with others.	1. I find it easy to become close friends with other children.
2. I feel comfortable when I am able to trust them and they are able to trust me.	2. I trust them and I am comfortable depending on them.
3. I am almost never scared of being deserted or that someone becomes really close friends with me.	3. I do not worry about being abandoned by other children.
4. I am almost never scared that someone becomes really close friends with me.	4. I do not worry about other children getting too close friends with me
Description of Avoidant Attachment	Description of Avoidant Attachment
1. I don't feel entirely comfortable when I am close friends with others.	1. I am uncomfortable to be close friends with other children.
2. I find it difficult to trust them completely, I find it difficult to be depended from them.	2. I find it difficult to trust other children completely, and difficult to depend on them.
3. I am nervous when someone wants to be friends with me.	3. I get nervous when another child wants to become close friends with me.
4. It often occurs that friends want more from me than I find pleasant.	4. Friends often come more close to me than I want them to.
Description of Ambivalent Attachment	Description of Ambivalent Attachment
1. I find that others don't want to be close friends	1. I often find that other children do not want to get as

with me as much as I would like to.

2. I worry that my best friend doesn't like me and will end our friendship.

3. I personally would like to do everything with my best friend. I notice that as a result I sometimes scare others away.

close as I would like them to be.

2. I am often worried that my best friend doesn't really like me and wants to end our friendship.

3. I prefer to do everything together with my best friend. However, this desire sometimes scares other children away.

**Quality of Attachment Relationships** - The Inventory of Parent and Peer Attachment-Revised (Gullone & Robinson, 2005) was used to measure the self-reported quality of parent/peer attachment relationships. The IPPA-R is a revision of the Inventory of Parent and Peer Attachment questionnaire (Armsden & Greenberg, 1987). It consists of 53 continuous level items measured on a Likert-type scale ranging from 1 (never true) to 3 (always true). One limitation of the original IPPA is that it only targeted mid to late adolescents (Armsden & Greenberg, 1987). In contrast, the age range for the IPPA-R is 9-15 years (Gullone & Robinson, 2005). Both versions of the instrument measure the views of adolescents on the quality of parent-adolescent and peer-adolescent relationships in three areas: (a) Alienation, (b) Communication, and (c) Trust (Armsden & Greenberg, 1987; Gullone & Robinson, 2005). Revisions of the IPPA include having a single parental scale representing both parents instead of one for each parent and simplifying the words for 14 of the 25 peer attachment items. For example, item three of the original version read, "When we discuss things, my friends care about my point of view. The revision reads, "When we talk, my friends listen to my opinion." Similarly, 16 of the 28 parent attachment items were revised. Item five of the original version read, "I like to get my mother's point of view on things I am concerned about." The revision reads, "I can't depend on my parents to help me solve a problem." Additionally, the five-point response scale was decreased to a three-point response scale (Gullone & Robinson, 2005). Internal consistency coefficients for



the IPPA ranged from 0.72 to 0.91 and 0.60 to 0.88 for the IPPA-R. Furthermore, Gullone and Robinson (2005) found significant positive correlations between the IPPA-R Parent Attachment scale, the Parental Bonding Instrument subscale (Care) (Parker et al., 1979) ( $r = 0.73, p < 0.001$ ), and the Self-Esteem Inventory- School Form (Coopersmith, 1981) subscale (adolescents) ( $r = 0.65, p < 0.001$ ). Significant correlations were also found between the IPPA-R Peer subscale (Trust) and PBI subscale (Care) ( $r = 0.44, p < 0.01$ ) and SEI subscale (Males) ( $r = -0.59, p < 0.001$ ). Inter-correlations between the IPPA-R and subscales according to age group were strong for adolescents. For example, inter-correlations between Parent Attachment and subscale (Trust) was strongly significant at ( $r = 0.90, p < 0.001$ ) and Parent Attachment and subscale (Communication) was strongly significant at ( $r = 0.90, p < 0.001$ ). By contrast, inter-correlations between Peer Attachment and subscale (Trust) and Peer Attachment and subscale (Communication) were both significant but smaller at ( $r = 0.24, p < 0.01$ ) and ( $r = 0.24, p < 0.01$ ). Overall, findings provide support for the IPPA-R as a valid and reliable instrument in children and adolescents (Gullone and Robinson, 2005). Refer to Appendix H.

**Anger Expression:** Anger expression was measured with the State-Trait Anger Expression Inventory – 2 Child/Adolescent (Brunner & Spielberger, 2009). The STAXI-2 C/A is a well-established and widely used anger measurement tool. It consists of five scales: State Anger, Trait Anger, Anger Expression-Out, Anger Expression-In, and Anger Control, and it has 35 continuous level items measured on a Likert-type response scale ranging from 1 (not at all) to 3 (very much). Examples of recent study topics utilizing the STAXI-2 C/A are youth with ADHD (Harty, Miller, Newcorn, & Halperin, 2009), youth suicide and alcohol use (Spirito, Mehlenbeck, Barnett, Lewander, & Voss, 2003), homicidal youth (Meyers & Monaco, 2000), and bullying in schools (Nickel et al., 2006). Internal consistency was established in a large

normative sample ( $N = 838$ ) in a group of adolescent males between the ages of 9-18. Cronbach's alpha coefficients ranged from .77 to .88 for the State Anger scale and subscales, .66 to .82 for the Trait Anger scale and subscales, .69 to .74 for Anger Expression-Out, .57 to .76 for Anger Expression-In, and .68 to .80 for Anger Control. In the same sample, internal consistency Cronbach's alpha coefficients for females between the ages of 9-18 ranged from .66 to .90 for the State Anger scale and subscales, .70 to .83 for the Trait Anger scale and subscales, .64 to .72 for Anger Expression-Out, .70 to .75 for Anger Expression-In, and .79 to .80 for Anger Control. In a sample ( $N = 52$ ) of youth with disruptive behaviors, Cronbach's alpha coefficients ranged from .88 to .94 for the State Anger scale and subscales, .77 to .88 for the Trait Anger scale and subscales, .84 for Anger Expression-Out, .74 for Anger Expression-In, and .89 for Anger Control. Intercorrelations ( $r$ ) between the scales and subscales of the STAXI-2 C/A, in the normative sample, were moderate to highly positive and statistically significant. One example is the intercorrelation between State Anger and the subscales State Anger-Feelings and State Anger Expression that showed significant positive intercorrelations. The intercorrelation between State Anger and the subscale State Anger-Feelings was ( $r = .90, p < .01$ ), between State Anger and the subscale State Anger-Expression was ( $r = .90, p < .01$ ), and the intercorrelation between the subscales was ( $r = .62, p < .01$ ). An anticipated exception to the significant positive intercorrelations found in the instrument occurred between the scales Anger Expression-In and Anger Expression-Out which was significantly and negatively correlated ( $r = -.26, p < .01$ ). Similar intercorrelation results were found in the sample of youth with disruptive behaviors. Content validity, construct validity, and criterion-related validity have all been established in the STAXI-2 C/A (Brunner & Spielberger, 2009). Refer to Appendix P.

**Depressed Mood** – Adolescent depressed mood was assessed in the study with the Center for Epidemiological Studies Depression Scale for Children (CES-DC) (CES DC; Weissman, et al., 1980). The CES-DC is a widely used self-report questionnaire (e.g. Brown, Harris, Woods, Buman, & Cox, 2012; Faulstich, 1986; Nicholas, 1998; Dichter, 1996) measures depressive symptoms in children and adolescents. The CES DC is comprised of 20 ratio level items that are scored on a Likert-type response scale. Each item offers a range of scores from 0 to 3 with 3 being the most severe. Total scores across the scale can range from 0-60. Norms for the CES DC were established in a sample of 28 children and adolescents consisting of males and females, ranging in age from 6 to 17. Faulstich et al., (1986) found Cronbach's alpha coefficients ranging from .77 to .86 and test-retest coefficients ranging from .12 (in children) to .69 (in adolescents). Refer to Appendix L.

**Aggression** – Youth aggression was measured with The Aggression Questionnaire (AQ) (Buss & Perry, 1992). The AQ is an updated version of the original measure – Hostility Inventory (Buss & Durkee, 1957). It is a broadly used self-report questionnaire that measures aggressive behaviors in youth and adults (e.g. Archer & Webb, 2006; Diamond & Magaletta, 2006; Palmer & Thakordas, 2005; Walters, Ronen, & Rosenbaum, 2010). The AQ consists of 29 continuous level items and 4 scales: physical aggression, verbal aggression, anger, and hostility. The AQ uses a 5-point Likert-type scale with response options ranging from 1 (not at all like me) to 5 (a lot like me). Total scores across the scale can range from 0-144. Norms for the AQ were established in a sample of 1,253 male and female college students ranging in age from 18 to 20 years. Reliability for the questionnaire was established by testing the instrument twice, with a sample of 372 students with a 9-week interval. The test-retest correlations were hostility, .72,

physical aggression, .80, anger, .72, and verbal aggression, .76 (total score = .80). Refer to Appendix J.

### **Plan for Data Analysis**

The statistical analyses techniques selected for this proposed study were based on the study's research questions and the type of data to be collected. Version 21 of Statistical Package for the Social Science (SPSS), was used for data analysis. Data analysis began with cleaning the data. A detailed descriptive analysis of all quantitative data was performed, involving the summarization of data and the use of inferential and graphical exploratory data analytic techniques. A component of SPSS software, Multiple Imputation was used to analyze patterns of missing values. The maximum number of variables to display was set at 25, and the minimum percentage of missing values for variables to be displayed was set at 0.01. The overall summary of missing values showed that 94% of all data was complete and 5.8% incomplete. Missing value patterns analysis showed that missing values were missing in a random pattern and that there were no patterns of missing data across all variables. Based on these findings, SPSS software was used to create a new dataset with imputed data values. Imputation specifications were as follows: 1) imputation method used was automatic, 2) number of multiple imputations was five, 3) model for scale variables was linear regression, 4) interactions included in models was none, 5) maximum percentage of missing values was 100%, and 6) maximum number of parameters in imputation model was 100. Statistical analysis showed that data values for the imputed and non-imputed data values were surprisingly similar. Therefore, due to the randomness of missing data values and to maintain the richness of the output that can be lost with multiple imputation

methodologies (Tabachnick & Fidell, 2007) missing data were addressed by excluding cases pairwise.

The following list of data analysis techniques were used in the study:

- Descriptive statistics for computing the summary measures (mean, median, standard deviation, and range) for variables measured on the interval or ratio scales;
- Frequency distributions (absolute and percent) for variables measured on nominal or ordinal scales;
- Cronbach's coefficient alpha to evaluate internal consistency of scales;
- Pearson correlation to explore the strength of relationships between variables;
- One-way between groups analysis of the variance (ANOVA) was used to compare mean scores on key variables between the four recruitment sites; and
- Standard multiple regression analysis was used to explore the predictive ability of specific sets of study variables.

**Research Question 1:** Is there a correlation between influencing factors (quality of parent attachment, quality of peer attachment, state anger, and trait anger) and risk factors (aggression and depressed mood) in urban African American adolescents?

Standard multiple regression analysis was used to explore the unique contribution made by of each of the independent variables in the influencing factors construct (quality of parent attachment, quality of peer attachment, and anger expression) for predicting risk factors (aggression and depressed mood).

**Research Question 2:** To what degree do personal factors (age, gender, current grade in school, ambivalent attachment, and avoidant attachment) predict influencing factors (quality of parent attachment, quality of peer attachment, state anger, and trait anger) in urban African American adolescents?

Standard multiple regression analysis was used to examine the unique contribution of each independent variable included in the personal factors construct (age, gender, current grade in school, and attachment style) and in the influencing factors construct (quality of parent attachment, quality of peer attachment, and expression in explaining the variance in each of the dependent variables (aggression and depressed mood) in urban African American adolescents. Crude (unadjusted) regression coefficients were estimated as well as adjusted regression coefficients based on multivariate modeling of multiple factors. Residual analyses were conducted to identify sources of model misspecification, outliers, and possibly influential observations. Sensitivity analyses were performed to discern the impact of influential cases on the results. Higher order effects for the continuous factors and interaction effects among factors were considered.

Self-reported attachment style, is measured on a nominal scale, having three categories of attachment style: 1) secure, 2) avoidant, and 3) ambivalent. This variable was dummy coded for inclusion in the multiple regression equations (Tabachnick & Fidell, 2007).

**Research Question 3:** To what degree do personal factors (age, gender, current grade in school, ambivalent attachment, and avoidant attachment) predict risk factors (aggression and depressed mood) mediated by influencing factors (quality of parent attachment, quality of peer attachment, state anger, and trait anger) in urban African American adolescents?

Multiple regression analysis was used to determine the effect of personal factors on the risk factors (aggression and depressed mood) mediated by influencing factors. Additional mediational analyses were conducted utilizing Mediate (Hayes & Preacher, 2012), a mediation software macro program designed to work with SPSS, and calculation of mediation utilizing the Sobel Test (Preacher & Leonardelli, 2012), both of which confirmed study findings.

### **Summary**

This study was strongly based on the conviction that not enough is being done to address the destructive forces of aggression in the lives of African American adolescents. To do so effectively, first requires that the phenomenon be better understood. This study was a step in that direction and will assist in paving the way for future prevention, early intervention, and treatment strategies in this vulnerable population.

## **Chapter 4**

### **Results**

Chapter 4 presents results from this non-experimental descriptive correlational study that explored the relationship between self-reported attachment style, aggression, and depressed mood in urban African American adolescents. Sample demographics, psychometric properties of the instruments, comparison of mean scores of the four study site groups, and study findings based on study research questions are presented. Data were analyzed with IBM SPSS Statistics Version 21 software.

#### **Participant Characteristics**

The study sample (N = 136) consisted of 36 adolescent males (26.5%) and 101 adolescent females (73.5%). The mean age of participants was 16.12 years (SD = 0.90). The “About You Questionnaire” asked participants to describe their ethnic/racial background, and although a very small number of participants reported being of bi-racial heritage, the majority (99.3%) of the total sample self-identified as African American/Black. Participants’ current grade in school ranged from 9<sup>th</sup> (2.2%) to 12<sup>th</sup> (35.3%) with the majority ranging between the 10<sup>th</sup> and 11<sup>th</sup> grade. For a more in depth review of participant characteristics, see Table 4.0.

The majority 109 (80.1%) of the participants reported living with their biological mothers most of the time, and 48 (35.0%) reported living with their biological fathers most of the time. These values include 37 (27%) of the youth reporting living with both parents most of the time. Similarly, 88 (62.0%) of the youth reported not living with their biological father most of the time. Moreover, approximately 9% of the total sample reported living with a stepparent (11



stepfathers and 1-step mother), 4% lived with adoptive parents, and 6.6% lived with guardian parents, including one guardian grandmother.

The scale for self-reported attachment style provided three descriptions of attachment styles, secure attachment, avoidant attachment, and ambivalent attachment. One hundred five (77.2%) chose secure attachment, 27 (19.9%) chose avoidant attachment, and 4 (2.9%) chose ambivalent attachment. Females outnumbered males in every self-reported attachment style. For secure attachment, the female to male ratio was 75:30, in avoidant attachment 21:6, and ambivalent attachment 4:0. For more on self-reported attachment style (refer to Table 4.1)

Table 4.0

*Participant Characteristics*

Characteristics	n	%
<b>Ethnic/Racial Background</b>		
African American/Black	135	99.3
American Indian/Alaskan Native	1	.7
<b>Gender</b>		
Males	36	26.5
Females	100	73.5
<b>Age</b>		
14	2	1.5
15	37	27.2
16	44	32.4
17	49	36.0
18	4	2.9
<b>Current Grade in School</b>		
9 <sup>th</sup>	3	2.2
10 <sup>th</sup>	47	34.6
11 <sup>th</sup>	38	27.9
12 <sup>th</sup>	48	35.3

Table 4.1

*Frequency of Self-Reported Attachment Style According to Gender*

Attachment Style	n	% of Sample	% Within Attachment Style
Secure Attachment	105	77.2	
Female	75	55.1	71.4
Male	30	22.1	28.6
Avoidant Attachment	27	19.9	
Female	21	15.4	77.8
Male	6	4.4	22.2
Ambivalent Attachment	4	2.9	
Female	4	2.9	100
Male	0	0	0

**Psychometric Properties of Instruments**

Internal consistency for all instruments was examined to test their ability to effectively measure the targeted variables in urban African American adolescents. Table 4.2 shows the Cronbach's alpha coefficients. Every instrument and respective subscales showed good internal reliability in the current study.

Table 4.2

*Internal Consistency for Study Instruments*

Measure	Cronbach's Alpha (N=136)	Reported Cronbach's Alpha
IPPA-R Parent	.80	.88**
IPPA-R Peer	.77	.85**
Aggression Questionnaire	.89	.80
CES-DC Scale	.88	.84
Staxi-2 C/A	.90	.85

## Research Questions

Research questions are based on the conceptual model of the study which is comprised of three constructs 1) Personal Factors (age, gender, current grade in school, and self-reported secure attachment style, having two sub categories [avoidant attachment and ambivalent attachment]; 2) Influencing Factors (quality of parent attachment, quality of peer attachment, and anger having two sub categories [state anger and trait anger], and 3) Risk Factors (aggression and depressed mood).

Research question #1 has two regression models, identified as Model 1 with aggression as the outcome variable, and Model 2 with depressed mood as the outcome variable. For each model, the assumptions for multiple regression were tested using SPSS Version 21. Normality, linearity, homoscedasticity, and outliers were evaluated with Normal Probability Plots of the regression standardized residuals, boxplots, and scatterplots. The presence and impact of cases with extreme values were identified by Casewise diagnostics; Mahalanobis distance values; and Chi Square critical values. Findings found no major deviations from normality. Observation of correlation tables and collinearity statistics found no problems with multicollinearity.

**Research Question 1:** Is there a correlation between influencing factors (quality of parent attachment, quality of peer attachment, state anger, and trait anger) and risk factors (aggression and depressed mood) in urban African American adolescents?

Table 4.3 displays the results for question one for model 1, including correlations between the variables, the standardized regression coefficients ( $\beta$ ), unstandardized regression coefficients ( $B$ ) and intercept,  $R^2$ , and adjusted  $R^2$ .  $R$  for regression was significantly different

from zero,  $F(4, 136) = 35.94$ ,  $p < 0.0001$ , with  $R^2$  at .57 and 95% confidence limits from 0.46 to 0.67. The adjusted  $R^2$  value of 0.56 indicates that more than half of the variability in aggression is predicted by quality of parent and peer attachment, state anger, and trait anger. For the three regression coefficients that differed significantly from zero, 95% confidence limits were calculated. The confidence limits for trait anger were 0.85 to 1.89, for state anger 0.47 to 1.4, and for parent attachment -.62 to -0.05. This model, which includes quality of parent attachment, quality of peer attachment, state anger, and trait anger in combination contributed another .20 in shared variability. Altogether 57% (55% adjusted) of the variability in aggression was predicted by knowing scores on these four independent variables. Of these four independent variables, trait anger makes the largest unique contribution ( $\beta = 0.43$ ), followed by state anger ( $\beta = 0.32$ ), and quality of parent attachment ( $\beta = -0.16$ ). The size and direction of the relationships in model 1 suggest that higher levels of anger and the quality of parent attachment relationships predict aggression in urban African American adolescents.

Table 4.3

*Model 1: Standard Multiple Regression of Influencing Factors on Aggression*

Variables	Aggression n (DV)	1	2	3	4	B	$\beta$	Sig.
1. Parent Attachment	-.42**	-				-.332	-.16	.022
2. Peer Attachment	-.15	.19*	-			-.288	-.11	.094
3. State Anger	.63**	-.30**	-.04	-		.934	.32	.000
4. Trait Anger	.68**	-.34**	-.00	.61**	-	1.369	.43	.000
Intercept	= 65.5					F(4, 136) = 35.94,	p<0.0001	
Means	67.0	63.0	58.0	13.4	19.1			
Standard Deviations	15.0	7.2	5.7	5.0	4.5			

N= 136. \*\*Correlation is significant at the  $\alpha < 0.01$  level (2-tailed) \*Correlation is significant at the  $\alpha < 0.05$  level (2-tailed). ns = a non-significant value

Table 4.4 displays the results for question one for model 2, including correlations between the variables, the standardized regression coefficients ( $\beta$ ), unstandardized regression coefficients ( $B$ ) and intercept,  $R^2$ , and adjusted  $R^2$ .  $R$  for regression was significantly different from zero,  $F(4, 136) = 15.71$ ,  $p < 0.0001$ , with  $R^2$  at .36 and 95% confidence limits from 0.23 to 0.48. The adjusted  $R^2$  value of 0.34 indicates that more than a third of the variability in depressed mood is predicted by quality of parent and peer attachment, state anger, and trait anger. For the two regression coefficients that differed significantly from zero, 95% confidence limits were calculated. The confidence limits for state anger were 0.42 to 1.27 and for quality of parent attachment -0.56 to -0.05. This model, which includes quality of parent attachment, quality of peer attachment, state anger, and trait anger in combination contributed another .15 in shared variability. Altogether 36% (34% adjusted) of the variability in depressed mood predicted by

knowing scores on these four independent variables. Of these four independent variables, state anger makes the largest unique contribution ( $\beta = .38$ ), followed by quality of parent attachment ( $\beta = -.19$ ). The size and direction of the relationships in model 2 suggest that higher levels of anger and quality of parent attachment relationships predict aggression in urban African American adolescents.

Table 4.4

*Model 2: Standard Multiple Regression of Influencing Factors on Depressed Mood*

Variables	Depressed Mood (DV)	1	2	3	4	B	$\beta$	Sig.
1. Parent Attachment	-.38**	-				-.302	-.19	.021
2. Peer Attachment	-.20*	.19*	-			-.299	-.15	.054
3. State Anger	.52**	-.30**	-.04	-		.842	.38	.000
4. Trait Anger	.43**	-.34**	-.00	.61**	-	.322	.13	.175
	Intercept	= 38.4				F(4, 36) = 15.71,	p<0.001	
Means	19.4	63.0	58.0	13.4	19.1			
Standard Deviations	11.3	7.2	5.7	5.0	4.5			

N= 136. \*\*Correlation is significant at the  $p<0.01$  level (2-tailed) ns = a non-significant value

\*Correlation is significant at the  $p<0.05$  level (2tailed).

Research question #2 has four regression models, 3-6. Model 3 has quality of parent attachment as the outcome variable, model 4 has quality of peer attachment, model 5 has state anger, and model 6 has trait anger. For each model, the assumptions for multiple regression were tested using SPSS Version 21. Normality, linearity, homoscedasticity, and outliers were evaluated with Normal Probability Plots of the regression standardized residuals, boxplots, and scatterplots. The presence and impact of cases with extreme values were identified by Casewise diagnostics; Mahalanobis distance values; and Chi Square critical values. Findings found no

major deviations from normality. Observation of correlation tables and collinearity statistics found no problems with multicollinearity.

**Research Question 2:** To what degree do Personal Factors (age, gender, current grade in school, ambivalent attachment, and avoidant attachment) predict Influencing Factors (quality of parent attachment, quality of peer attachment, state anger, trait anger) in urban African American adolescents?

Table 4.5 displays the results for question two model 3, including correlations between the variables, the standardized regression coefficients ( $\beta$ ), unstandardized regression coefficients ( $B$ ) and intercept,  $R^2$ , and adjusted  $R^2$ .  $F$  for regression was not significantly different from zero,  $F(5, 136) = 2.089$ ,  $p < 0.071$ , with  $R^2$  at 0.08 and 95% confidence limits from 0.00 to 0.16. The adjusted  $R^2$  value indicates that 0.04 of the variability in quality of parent attachment is predicted by age, gender, current grade in school, ambivalent attachment, and avoidant attachment. Of these five variables, only avoidant attachment had a regression coefficient that differed significantly from zero ( $\beta = -0.24$ ). The 95% confidence limits for avoidant attachment were -7.478 to -1.248. This model, which includes age, gender, current grade in school, ambivalent attachment, and avoidant attachment in combination contributed another 0.09 in shared variability. Altogether 7.8% (4.0 % adjusted) of the variability in quality of parent attachment was predicted by knowing scores on these five independent variables. Of these five independent variables, avoidant attachment makes the largest unique contribution ( $\beta = -0.24$ ), followed by ambivalent attachment ( $\beta = -0.14$ ). The size and direction of the relationships in model 3 suggest that avoidant attachment predicts quality of parent attachment in urban African American adolescents.

Table 4.5

*Model 3: Standard Multiple Regression of Personal Factors on Quality of Parent Attachment*

Variables	Parent Attachment (DV)	1	2	3	4	5	B	$\beta$	Sig.
1. Age	-.08						-.901	-.11	.409
2. Gender	-.05	-.02					-1.160	-.07	.421
3. Grade	-.04		-.11				.139	.02	.899
4. Ambivalent attachment	-.10	.76**	-.10	-.04			-5.788	-.14	.126
5. Avoidant attachment	-.23*	-.02	-.05	-.06	-.09		-4.363	-.24	.006
	Intercept	= 77.9					F(5, 136) = 2.089,	p<0.071	
Means	63.0	16.1	.26	7.0	.03	.20			
Standard Deviations	7.2	.90	.44	.89	.17	.40			

N= 136. \*\*Correlation is significant at the  $p<0.01$  level (2-tailed) ns = a non-significant value

\*Correlation is significant at the  $p<0.05$  level (2-tailed).

Table 4.6 displays the results for question one for model 4, including correlations between the variables, the standardized regression coefficients ( $\beta$ ), unstandardized regression coefficients ( $B$ ) and intercept,  $R^2$ , and adjusted  $R^2$ .  $R$  for regression was not significantly different from zero,  $F(5, 136) = 2.231$ ,  $p < .055$ , with  $R^2$  at .05 and 95% confidence limits from .00 to 0.17. The adjusted  $R^2$  value indicates that 5% of the variability in quality of peer attachment is predicted by age, gender, current grade in school, ambivalent attachment, and avoidant attachment. Of these five variables, only gender had a regression coefficient that differed significantly from zero ( $\beta = -0.23$ ). The 95% confidence limits for avoidant attachment were -2.952 to -1.127. This model, which includes age, gender, current grade in school,



ambivalent attachment, and avoidant attachment in combination contributed another 0.08 in shared variability. Altogether 8% (5% adjusted) of the variability in quality of peer attachment was predicted by knowing scores on these five independent variables. Of these five independent variables, gender makes the largest unique contribution ( $\beta = -0.23$ ). The size and direction of the relationships in model 4 suggest that gender predicts quality of peer attachment in urban African American adolescents.

Table 4.6

*Model 4: Standard Multiple Regression of Personal Factors on Quality of Peer Attachment*

Variables	Peer Attachment (DV)	1	2	3	4	5	<i>B</i>	$\beta$	Sig.
1. Age	-.05	-					-.683	-.11	.425
2. Gender	-.24**	-.02					-2.952	-.23	.010
3. Grade	-.02		-.11				.435	.07	.614
4. Ambivalent attachment	-.10	.76**	-.10	-.04			1.937	.06	.513
5. Avoidant attachment	-.13	-.02	-.05	-.06	-.09		-1.842	-.13	.139
	Intercept	= 67.0					F(5, 136) = 2.231,	p<0.055	
Means	58.0	16.1	.26	7.0	.03	.20			
Standard Deviations	7.2	.90	.44	.89	.17	.40			

N= 136. \*\*Correlation is significant at the p<0.01 level (2-tailed) ns = a non-significant value

\*Correlation is significant at the p<0.05 level (2-tailed).

Table 4.7 displays the results for question one for model 5, including correlations between the variables, the standardized regression coefficients ( $\beta$ ), unstandardized regression coefficients (*B*) and intercept,  $R^2$ , and adjusted  $R^2$ . R for regression was not significantly different from zero,  $F(5, 136) = 6.025$ ,  $p < 0.0001$ , with  $R^2$  at 0.16 and 95% confidence limits

from 0.08 to 0.30. The adjusted  $R^2$  indicates that 16% of the variability in state anger is predicted by age, gender, current grade in school, ambivalent attachment, and avoidant attachment. Of these five variables, three had regression coefficients that differed significantly from zero, avoidant attachment ( $\beta = 0.36$ ), Current grade in school ( $\beta = -0.30$ ), and age ( $\beta = 0.28$ ). The 95% confidence limits for avoidant attachment were 2.587 to 6.610, for current grade in school -3.113 to -0.32, and for age 2.13 to 2.990. This model, which includes age, gender, current grade in school, ambivalent attachment, and avoidant attachment in combination contributed another 0.22 in shared variability. Altogether 19% (16% adjusted) of the variability in state anger was predicted by knowing scores on these five independent variables. Of these five independent variables, avoidant attachment makes the largest unique contribution ( $\beta = 0.36$ ), current grade in school follows at ( $\beta = -0.30$ ), and lastly age at ( $\beta = 0.28$ ). The size and direction of the relationships in model 5 suggest that avoidant attachment, current grade in school, and age predict state anger in urban African American adolescents.

Table 4.7

*Model 5: Standard Multiple Regression of Personal Factors on State Anger*

Variables	State Anger (DV)	1	2	3	4	5	B	β	Sig.
1. Age	.03	-					1.602	.28	.024
2. Gender	-.03	-.02	-				-.218	-.02	.814
3. Grade	-.11	.76**	-.11	-			-1.714	-.30	.017
4. Ambivalent attachment	.11	-.12	-.10	-.04	-		4.753	.16	.052
5. Avoidant attachment	.36**	-.02	-.05	-.06	-.09	-	4.599	.36	.000
	Intercept	= -1.50					F(5, 136) = 6.025,	p<0.0001	
Means	13.3	16.1	.26	7.0	.03	.20			
Standard Deviations	5.1	.90	.44	.89	.17	.40			

N= 136. \*\*Correlation is significant at the p<0.01 level (2-tailed) ns = a non-significant value

\*Correlation is significant at the p<0.05 level (2-tailed).

Table 4.8 displays the results for question one for model 6, including correlations between the variables, the standardized regression coefficients ( $\beta$ ), unstandardized regression coefficients ( $B$ ) and intercept,  $R^2$ , and adjusted  $R^2$ .  $R$  for regression was not significantly different from zero,  $F(5, 136) = 4.492$ ,  $p < 0.0001$ , with  $R^2$  at 0.12 and 95% confidence limits from 0.04 to 0.25. The adjusted  $R^2$  value indicates that 12% of the variability in trait anger is predicted by age, gender, current grade in school, ambivalent attachment, and avoidant attachment. Of these five variables, three had regression coefficients that differed significantly from zero, avoidant attachment ( $\beta = 0.23$ ), ambivalent attachment ( $\beta = -0.23$ ), and gender ( $\beta = -0.16$ ). The 95% confidence limits for avoidant attachment were 2.720 to 1.00, for ambivalent attachment 6.335 to 2.299, and gender -1.740 to 0.88 This model, which includes age, gender,

current grade in school, ambivalent attachment, and avoidant attachment in combination contributed another 0.16 in shared variability. Altogether 15% (12% adjusted) of the variability in trait anger was predicted by knowing scores on these five independent variables. Avoidant attachment makes the largest unique contribution ( $\beta = 0.23$ ) followed by ambivalent attachment ( $\beta = 0.23$ ), and gender ( $\beta = -0.16$ ). The size and direction of the relationships in model 6 suggest that avoidant attachment, ambivalent attachment, and gender predict trait anger in urban African American adolescents.

Table 4.8

*Model 6: Standard Multiple Regression of Personal Factors on Trait Anger*

Variables	Trait Anger (DV)	1	2	3	4	5	B	$\beta$	Sig.
1. Age	-.05	-					.736	.14	.270
2. Gender	-.18*	-.02	-				-1.740	-.16	.050
3. Grade	-.11	.76**	-.11	-			-1.109	-.21	.100
4. Ambivalent attachment	.22*	-.12	-.10	-.04	-		6.335	.23	.007
5. Avoidant attachment	.23**	-.02	-.05	-.06	-.09	-	2.720	.23	.005
	Intercept	= 14.8				F(5, 136) = 4.492, p<0.0001			
Means	19.0	16.1	.26	7.0	.03	.20			
Standard Deviations	4.7	.90	.44	.89	.17	.40			

N= 136. \*Correlation is significant at the p<0.05 level (2-tailed) ns = a non-significant value

\*\*Correlation is significant at the p<0.01 level (2-tailed) ns = a non-significant value

**Research Question 3:** To what degree do Personal Factors (age, gender, current grade in school, ambivalent attachment, and avoidant attachment) predict Risk Factors (aggression and depressed

mood) mediated by Influencing Factors (quality of parent attachment, quality of peer attachment, state anger, and trait anger) in urban African American adolescents?

For research question three, the assumptions for multiple regression were tested using SPSS Version 21. Normality, linearity, and homoscedasticity were evaluated with Normal Probability Plots of the regression standardized residuals, boxplots, and scatterplots. No major deviations from normality were found. The presence and impact of cases with extreme values were identified by Casewise diagnostics; Mahalanobis distance values; and Chi Square critical values again finding no major deviations from normality. Observation of correlation tables and collinearity statistics found no problems with multicollinearity.

Twenty mediational models consisting of one independent variable from the Personal Factors construct, one mediating variable from the Influencing Factors construct, and one dependent variable from the Risk Factors construct were developed (Baron & Kenny, 1986; Preacher, K.J. & Leonardelli, G.J., 2010; Yarcheski, A, Mahon, N.E. & Yarcheski, T.J., 2001). Only three of the twenty models, (A, B, and C) qualified for full mediational analysis. Model A consisted of avoidant attachment (IV), parent attachment (mediator), and total aggression (DV). Model B included avoidant attachment (IV), total state anger (mediator), and total aggression (DV). Model C consisted of avoidant attachment (IV), total trait anger (mediator), and total aggression (DV).

Twenty mediational models consisting of one independent variable from the Personal Factors construct, one mediating variable from the Influencing Factors construct, and one dependent variable from the Risk Factors construct were developed (Baron & Kenny, 1986; Preacher, K.J. & Leonardelli, G.J., 2010; Yarcheski, A, Mahon, N.E. & Yarcheski, T.J., 2001). Only three of

the twenty models, (D, E, and F) qualified for full mediational analysis. Model D consisted of avoidant attachment (IV), parent attachment (mediator), and total depressed mood (DV). Model E included avoidant attachment (IV), total state anger (mediator), and total depressed mood (DV). Model F consisted of avoidant attachment (IV), total trait anger (mediator), and total depressed mood (DV).

According to Baron and Kenny (1986), all of the following must hold true in a model to establish mediation

- in the first equation, the independent variable must affect the mediator;
- in the second equation, the independent variable must effect the dependent variable;
- in the third equation, which includes the mediating variable and the independent variable , the mediating variable must affect the dependent variable;
- if all these requirements hold true in the predicted direction, the effect of the independent variable should be less in equation three than equation two.

Although rare (Denis, D.J., 2010), if the independent variable has no effect when the mediator is controlled, perfect mediation exists.

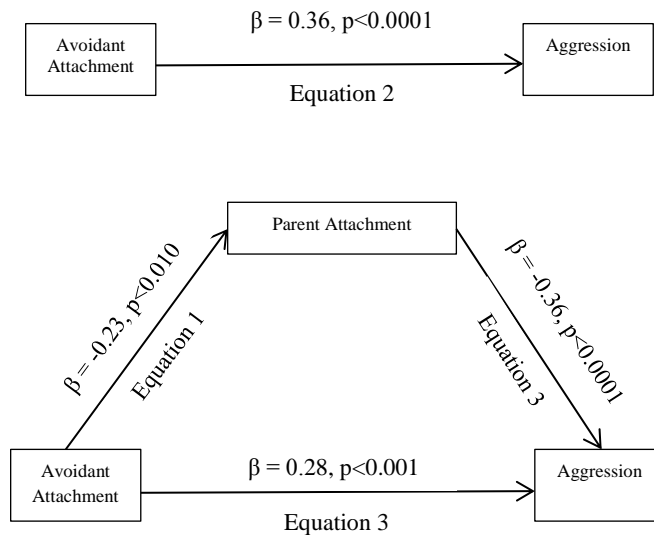
Pearson correlation was used to determine if the variables in model A were correlated. A positive correlation was found between avoidant attachment and total aggression ( $r = 0.36$ ,  $p < .0001$ ), and negative correlations were found between avoidant attachment and quality of parent attachment ( $r = -0.23$ ,  $P < .0005$ ) and between quality of parent attachment and total aggression ( $r = -0.42$ ,  $P < .0001$ ).

To test mediational model A, a series of three regression analyses were performed (Baron & Kenny, 1986; Preacher, K.J. & Leonardelli, G.J., 2010; Yarcheski, A, Mahon, N.E. & Yarcheski, T.J., 2001). The first equation regressed the mediator (quality of parent attachment) on the independent variable (avoidant attachment). The second equation regressed the dependent variable (total aggression) on the independent variable (avoidant attachment). The third equation regressed the dependent variable (total aggression) on both the independent variable (avoidant attachment) and the mediation variable (quality of parent attachment).

Results for testing mediational model A (see Figure 4.1) indicated that in the first regression equation, avoidant attachment negatively influenced parent attachment,  $F(1, 136) = 6.784$ ,  $p < .010$ , explaining 5.1% of the variance in parent attachment. In the second regression equation, avoidant attachment positively influenced total aggression,  $F(1, 136) = 17.27$ ,  $p < 0.0001$ , explaining 13% of the variance in total aggression. In the third regression equation quality of parent attachment negatively influenced total aggression ( $t = -0.42$ ,  $P < 0.0001$ , explaining 12% of the variance in total aggression. In this third equation, which included both avoidant attachment and quality of parent attachment, avoidant attachment added 7% to the explained variance in total aggression beyond the 12% contributed by quality of parent attachment. With quality of parent attachment present, the proportion of variance in total aggression accounted for by avoidant attachment was reduced from 13% to 7% and the standardized regression coefficient was decreased from 0.36 to 0.28, as derived from the second to third equation. Although avoidant attachment still had a statistically significant influence on total aggression in the third equation ( $t = 3.31$ ,  $P < 0.001$ ), the loss of 7% of explained variance in total aggression by avoidant attachment was due to the mediation (of quality of parent attachment). These results indicate that quality of parent attachment is one mediator in the relationship between avoidant attachment and

total aggression. Additional mediational analyses were conducted utilizing Mediate (Hayes & Preacher, 2012), a mediation software macro program designed to work with SPSS, and calculation of mediation utilizing the Sobel Test (Preacher & Leonardelli, 2012), both of which supported the above study findings.

Figure 4.0 Mediational Model A



Pearson correlation was used to determine if the variables in model B were correlated. Positive correlations were found between avoidant attachment and total aggression ( $r = .36$ ,  $p < 0.0001$ ), avoidant attachment and total state anger ( $r = 0.36$ ,  $P < 0.0001$ ), and between total state anger and total aggression ( $r = 0.63$ ,  $n = 136$ ,  $P < 0.0001$ ).

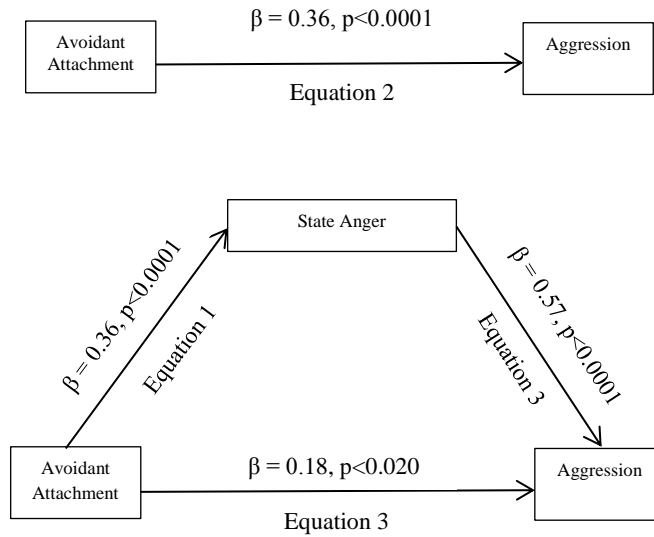
To test mediational model B, a series of three regression analyses were performed (Baron & Kenny, 1986; Preacher, K.J. & Leonardelli, G.J., 2010; Yarcheski, A, Mahon, N.E. & Yarcheski, T.J., 2001). The first equation regressed the mediator (total state anger) on the independent variable (avoidant attachment). The second equation regressed the dependent



variable (total aggression) on the independent variable (avoidant attachment). The third equation regressed the dependent variable (total aggression) on both the independent variable (avoidant attachment) and the mediation variable (total state anger).

Results for testing mediational model B (see Figure 4.2) indicated that in the first regression equation, avoidant attachment positively influenced total state anger,  $F(1, 136) = 19.89$ ,  $p < 0.0001$ , explaining 13% of the variance in total state anger. In the second regression equation, avoidant attachment positively influenced total aggression,  $F(1, 136) = 17.27$ ,  $p < 0.0001$ , explaining 13% of the variance in total aggression. In the third regression equation total state anger positively influenced total aggression ( $t = 7.56$ ,  $P < 0.0001$ , explaining 40.0% of the variance in total aggression. In this third regression equation, which included both avoidant attachment and total state anger, avoidant attachment added 2.8% to the explained variance in total aggression beyond the 40.0% contributed by total state anger. With total state anger present, the proportion of variance in total aggression accounted for by avoidant attachment was reduced from 13% to 2.8% and the standardized regression coefficient was decreased from 0.36 to 0.28, as derived from the second to third equation. Although avoidant attachment still had a statistically significant influence on total aggression in the third equation ( $t = 2.35$ ,  $P < 0.020$ ), the loss of 2.8% of explained variance in total aggression by avoidant attachment was due to the mediation of total state anger. These results indicate that total state anger is one mediator in the relationship between avoidant attachment and total aggression. Additional mediational analyses were conducted utilizing Mediate (Hayes & Preacher, 2012), a mediation software macro program designed to work with SPSS, and calculation of mediation utilizing the Sobel Test (Preacher & Leonardelli, 2012), both of which supported the above study findings.

Figure 4.1 Mediation Model B

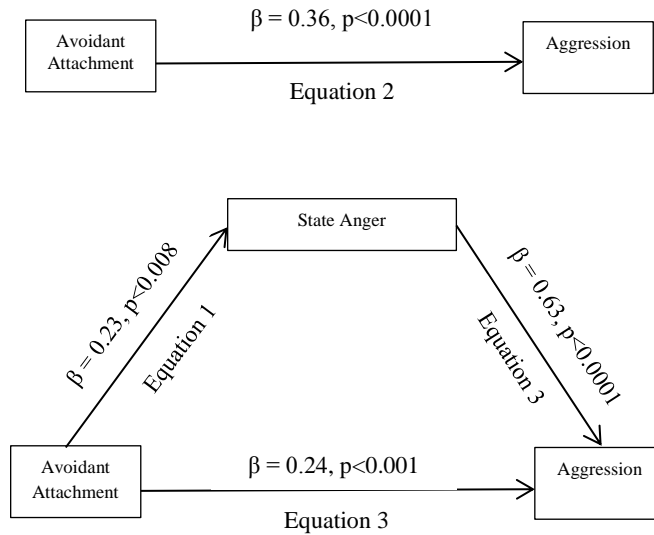


Pearson correlation was used to determine if the variables in model C were correlated. Positive correlations were found between avoidant attachment and total aggression ( $r = .36, p < 0.0001$ ), avoidant attachment and total trait anger ( $r = 0.23, P < 0.0001$ ), and between total trait anger and total aggression ( $r = 0.68, P < 0.0001$ ).

To test mediational model C, a series of three regression analyses were performed (Baron & Kenny, 1986; Preacher, K.J. & Leonardelli, G.J., 2010; Yarcheski, A, Mahon, N.E. & Yarcheski, T.J., 2001). The first equation regressed the mediator (total trait anger) on the independent variable (avoidant attachment). The second equation regressed the dependent variable (total aggression) on the independent variable (avoidant attachment). The third equation regressed the dependent variable (total aggression) on both the independent variable (avoidant attachment) and the mediation variable (total trait anger).

Results for testing mediational model C (see Figure 4.3) indicated that in the first regression equation, avoidant attachment positively influenced total trait anger,  $F(1, 136) = 7.37, p < 0.008$ , explaining 5.3% of the variance in total trait anger. In the second regression equation, avoidant attachment positively influenced total aggression,  $F(1, 136) = 17.27, p < 0.0001$ , explaining 13% of the variance in total aggression. In the third regression equation total trait anger positively influenced total aggression ( $t = 9.40, P < 0.0001$ ), explaining 37.8% of the variance in total aggression. In this third regression equation, which included both avoidant attachment and total trait anger, avoidant attachment added 5.3% to the explained variance in total aggression beyond the 37.8% contributed by total trait anger. With total trait anger present, the proportion of variance in total aggression accounted for by avoidant attachment was reduced from 13% to 5.3% and the standardized regression coefficient was decreased from 0.36 to 0.24, as derived from the second to third equation. Although avoidant attachment still had a statistically significant influence on total aggression in the third equation ( $t = 3.51, P < 0.001$ ), the loss of 5.3% of explained variance in total aggression by avoidant attachment was due to the mediation of total trait anger. These results indicate that total trait anger is one mediator in the relationship between avoidant attachment and total aggression. Additional mediational analyses were conducted utilizing Mediate (Hayes & Preacher, 2012), a mediation software macro program designed to work with SPSS, and calculation of mediation utilizing the Sobel Test (Preacher & Leonardelli, 2012), both of which supported the above study findings.

Figure 4.2 Mediation Model C



Pearson correlation was used to determine if the variables in model D were correlated. A positive correlation was found between avoidant attachment and total aggression ( $r = 0.23, p < .0005$ ), and negative correlations were found between avoidant attachment and quality of parent attachment ( $r = -0.23, P < .0005$ ) and between quality of parent attachment and total depressed mood ( $r = -0.38, P < .0001$ ).

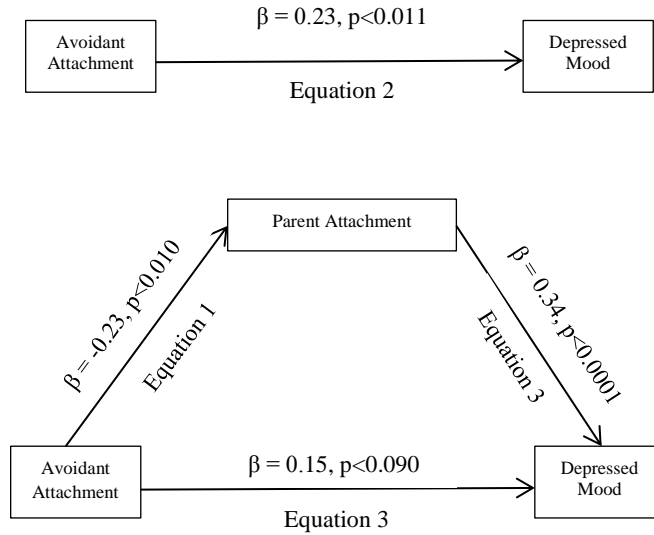
To test mediational model D, a series of three regression analyses were performed (Baron & Kenny, 1986; Preacher, K.J. & Leonardelli, G.J., 2010; Yarcheski, A, Mahon, N.E. & Yarcheski, T.J., 2001). The first equation regressed the mediator (quality of parent attachment) on the independent variable (avoidant attachment). The second equation regressed the dependent variable (total depressed mood) on the independent variable (avoidant attachment). The third equation regressed the dependent variable (total depressed mood) on both the independent variable (avoidant attachment) and the mediation variable (quality of parent attachment).

Results for testing mediational model D (see Figure 4.4) indicated that in the first regression equation, avoidant attachment negatively influenced parent attachment,  $F(1, 136) = 6.784$ ,  $p < 0.010$ , explaining 5.1% of the variance in parent attachment. In the second regression equation, avoidant attachment positively influenced total depressed mood,  $F(1, 136) = 6.729$ ,  $p < 0.011$ , explaining 5.3% of the variance in total depressed mood. In the third regression equation quality of parent attachment negatively influenced total depressed mood ( $t = -3.873$ ,  $P < 0.0001$ , explaining 11% of the variance in total depressed mood. In this third equation, which included both avoidant attachment and quality of parent attachment, avoidant attachment added 2.1% to the explained variance in total depressed mood beyond the 11% contributed by quality of parent attachment. With quality of parent attachment present, the proportion of variance in total depressed mood accounted for by avoidant attachment was reduced from 5.3% to 2.1% and the standardized regression coefficient was decreased from 0.23 to 0.15, as derived from the second to third equation. Avoidant attachment had a statistically insignificant influence on total depressed mood in the third equation ( $t = 1.725$ ,  $P < 0.087$ ). The loss of 2.1% of explained variance in total depressed mood by avoidant attachment was due to the mediation of quality of parent attachment. These results indicate that quality of parent attachment is one mediator in the relationship between avoidant attachment and total depressed mood. Additional mediational analyses were conducted utilizing Mediate (Hayes & Preacher, 2012), a mediation software macro program designed to work with SPSS and calculation of the Sobel Test (Preacher & Leonardelli, 2012), both of which supported the above study findings.

Pearson correlation was used to determine if the variables in model E were correlated. Positive correlations were found between avoidant attachment and total aggression ( $r = 0.23$ ,

$p < 0.0005$ ), avoidant attachment and total state anger ( $r = .36, P < 0.0001$ ) and between total state anger and total depressed mood ( $r = 0.52, P < 0.0001$ ).

Figure 4.3 Mediation Model D

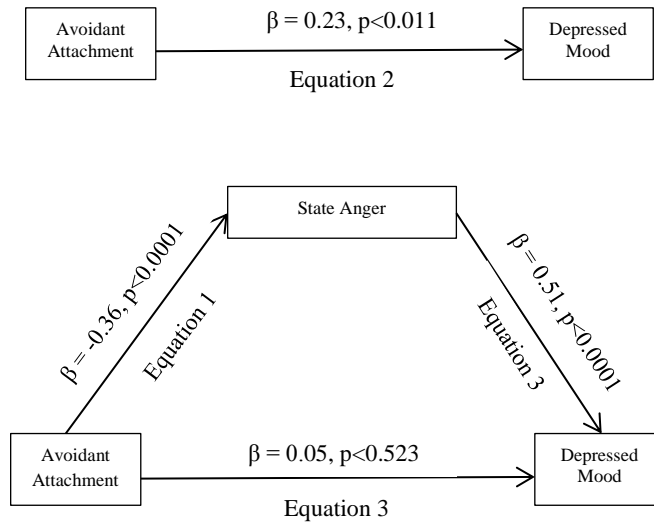


To test mediational model E, a series of three regression analyses were performed (Baron & Kenny, 1986; Preacher, K.J. & Leonardelli, G.J., 2010; Yarcheski, A, Mahon, N.E. & Yarcheski, T.J., 2001). The first equation regressed the mediator (total state anger) on the independent variable (avoidant attachment). The second equation regressed the dependent variable (total depressed mood) on the independent variable (avoidant attachment). The third equation regressed the dependent variable (total depressed mood) on both the independent variable (avoidant attachment) and the mediation variable (total state anger).

Results for testing mediational model E (see Figure 4.5) indicated that in the first regression equation, avoidant attachment positively influenced total state anger,  $F(1, 136) = 19.89, p < 0.0001$ , explaining 13% of the variance in total state anger. In the second regression equation,

avoidant attachment positively influenced total depressed mood,  $F(1, 136) = 6.729, p < 0.011$ , explaining 5.3% of the variance in total depressed mood. In the third regression equation total state anger positively influenced total depressed mood ( $t = 6.059, P < 0.0001$ ), explaining 22.2% of the variance in total depressed mood. In this third regression equation, which included both avoidant attachment and total state anger, avoidant attachment added 0.002% to the explained variance in total depressed mood beyond the 22.2% contributed by total state anger. With total state anger present, the proportion of variance in total depressed mood accounted for by avoidant attachment was reduced from 5.3% to 0.002% and the standardized regression coefficient was decreased from 0.23 to 0.05, as derived from the second to third equation. Avoidant attachment had a statistically insignificant influence on total depressed mood in the third equation ( $t = .640, P < 0.523$ ). The loss of 0.002% of explained variance in total depressed mood by avoidant attachment was due to the mediation of total state anger. These results indicate that total state anger is one mediator in the relationship between avoidant attachment and total aggression. Additional mediational analyses were conducted utilizing Mediate (Hayes & Preacher, 2012), a mediation software macro program designed to work with SPSS, and calculation of mediation utilizing the Sobel Test (Preacher & Leonardelli, 2012), both of which supported the above study findings.

Figure 4.4 Mediation Model E



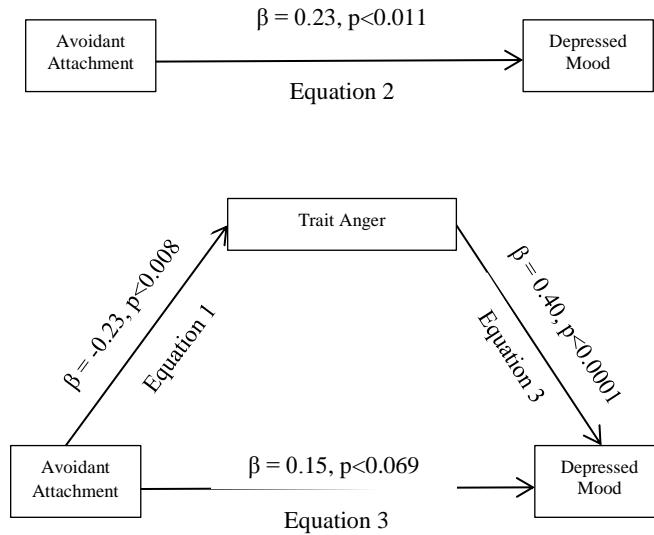
Pearson correlation was used to determine if the variables in model F were correlated. Positive correlations were found between avoidant attachment and total aggression ( $r = 0.23, p < 0.0005$ ), avoidant attachment and total trait anger ( $r = 0.23, P < 0.0001$ ) and between total trait anger and total depressed mood ( $r = 0.43, P < 0.0001$ ).

To test mediational model F, a series of three regression analyses were performed (Baron & Kenny, 1986; Preacher, K.J. & Leonardelli, G.J., 2010; Yarcheski, A, Mahon, N.E. & Yarcheski, T.J., 2001). The first equation regressed the mediator (total trait anger) on the independent variable (avoidant attachment). The second equation regressed the dependent variable (total depressed mood) on the independent variable (avoidant attachment). The third equation regressed the dependent variable (total depressed mood) on both the independent variable (avoidant attachment) and the mediation variable (total trait anger).



Results for testing mediational model F (see Figure 4.6) indicated that in the first regression equation, avoidant attachment positively influenced total trait anger,  $F(1, 136) = 7.374$ ,  $p < 0.008$ , explaining 5.3% of the variance in total trait anger. In the second regression equation, avoidant attachment positively influenced total depressed mood,  $F(1, 136) = 6.729$ ,  $p < 0.011$ , explaining 5.3% of the variance in total depressed mood. In the third regression equation total trait anger positively influenced total depressed mood ( $t = 4.830$ ,  $P < 0.0001$ ), explaining 16.0% of the variance in total depressed mood. In this third regression equation, which included both avoidant attachment and total trait anger, avoidant attachment added 2.0% to the explained variance in total depressed mood beyond the 16.0% contributed by total trait anger. With total trait anger present, the proportion of variance in total depressed mood accounted for by avoidant attachment was reduced from 5.3% to 2.0% and the standardized regression coefficient was decreased from .23 to .15, as derived from the second to third equation. Avoidant attachment had a statistically insignificant influence on total depressed mood in the third equation ( $t = 1.832$ ,  $P < 0.069$ ). The loss of 2.0% of explained variance in total depressed mood by avoidant attachment was due to the mediation of total trait anger. These results indicate that total trait anger is one mediator in the relationship between avoidant attachment and total aggression. Additional mediational analyses were conducted utilizing Mediate (Hayes & Preacher, 2012), a mediation software macro program designed to work with SPSS, and calculation of mediation utilizing the Sobel Test (Preacher & Leonardelli, 2012), both of which supported the above study findings.

Figure 4.5 Mediation Model F



### Recruitment Site Group Mean Differences

One-way between groups analysis of variance was conducted to explore the impact of recruitment source locations, as measured by the key study variables (quality of parent attachment, quality of peer attachment, state anger, trait anger, aggression, and depressed mood). Study participants were divided into four groups based on the source of their recruitment. Group 1 participants were recruited from the Early College Alliance Program, Group 2 participants were recruited from the community surrounding and within Matrix Human Services, Group 3 participants were recruited from Christian Love Fellowship Church, and Group 4 participants were recruited from Inkster Public High School.

### **Quality of Parent Attachment**

There were no statistically significant differences at the  $p < .05$  level in quality of parent attachment scores between the four groups. The effect size calculated using eta square was 0.05 indicating that the difference in mean scores between the groups was small.

### **Quality of Peer Attachment**

There was a statistically significant difference at the  $p < .05$  level in quality of peer attachment scores for the four groups [ $F(3, 125) = 5.1, p = .002$ ]. The effect size calculated using eta square was 0.10 indicating that the difference in mean scores between the groups was medium. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for Group 2 ( $M = 55.80, SD = 6.2$ ) was significantly different from Group 4 ( $M = 59.96, SD = 4.9$ ). Group 1 ( $M = 56.63, SD = 5.7$ ) and Group 3 ( $M = 59.17, SD = 4.7$ ) did not differ significantly from either Group 2 or Group 4.

### **Total Aggression**

There was a statistically significant difference at the  $p < .05$  level in total aggression scores for the four groups [ $F(3, 115) = 11.0, p = .000$ ]. The effect size calculated using eta square was 0.22 indicating that the difference in mean scores between the groups was large. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for Group 1 ( $M = 57.00, SD = 10.0$ ) was significantly different from Group 2 ( $M = 71.86, SD = 14.9$ ) and Group 4 ( $M = 70.98, SD = 14.7$ ). Group 3 ( $M = 55.5, SD = 9.2$ ) did not differ significantly from Group 1. In addition, post-hoc comparisons using the Tukey HSD test indicated that the mean score for Group 2

(M=71.86, SD=14.9) was significantly different from Group 3 (M=55.52, SD=9.2) and Group 1 (M=57.00, SD=10.0), but did not differ significantly from Group 4. Additionally, post-hoc comparisons using the Tukey HSD test indicated that the mean score for Group 3 (M=55.52, SD=9.2) differed significantly from Group 2 (M=71.86, SD=14.9) and Group 4 (M=70.98, SD=14.7), but did not differ significantly from Group 1. Finally, post-hoc comparisons using the Tukey HSD test indicated that the mean score for Group 4 (M=70.98, SD=14.7) differed significantly from Group 3 (M=55.52, SD=9.2) and Group 1 (M=57.00, SD=10.0), but did not differ significantly from Group 2.

### **Total Depressed Mood**

There were no statistically significant differences at the  $p < .05$  level in depressed mood between the four groups. The effect size calculated using eta square was 0.04 indicating that the difference in mean scores between the groups was small.

### **Total State Anger**

There was a statistically significant difference at the  $p < .05$  level in total state anger scores for the four groups [ $F(3, 131) = 6.0, p = .001$ ]. The effect size calculated using eta square was 0.12 indicating that the difference in mean scores between the groups was medium. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for Group 1 (M=10.75, SD=1.5) was significantly different from Group 2 (M=14.57, SD=6.2) and Group 4 (M=14.43, SD=5.1). Group 3 (M=10.52, SD=1.4) did not differ significantly from Group 1. In addition, post-hoc comparisons using the Tukey HSD test indicated that the mean score for Group 2 (M=14.57, SD=6.2) was significantly different from Group 3 (M=10.52, SD=1.4) and Group 1

(M=10.75, SD=1.5), but did not differ significantly from Group 4. Additionally, post-hoc comparisons using the Tukey HSD test indicated that the mean score for Group 3 (M=10.52, SD=1.4) differed significantly from Group 2 (M=14.57, SD=6.2) and Group 4 (M=14.43, SD=5.1), but did not differ significantly from Group 1. Finally, post-hoc comparisons using the Tukey HSD test indicated that the mean score for Group 4 (M=14.43, SD=5.1) differed significantly from Group 3 (M=10.52, SD=1.4) and Group 1 (M=10.75, SD=1.5), but did not differ significantly from Group 2.

### **Total Trait Anger**

There was a statistically significant difference at the  $p < .05$  level in total trait anger scores for the four groups [ $F(3, 130) = 2.8, p = .044$ ]. The effect size calculated using eta square was 0.06 indicating that the difference in mean scores between the groups was medium. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for Group 3 (M=17.09, SD=3.9) was significantly different from Group 4 (M=20.26, SD=5.3). Group 2 and Group 1 (M=18.19, SD=3.2) did not differ significantly from Group 3. Finally, although Group 4 (M=20.26, SD=5.3) and Group 3 (M=17.09, SD=3.9) differed significantly, Group 1 and Group 2 did not differ significantly from Group 4.

## **Chapter 5**

### **Discussion, Recommendations, and Conclusions**

Chapter 5 presents a summary of the research, identifies study limitations, discusses the research findings in relation to the research questions, discusses implications for nursing practice, and makes recommendations for further research.

#### **Discussion**

##### **Research Question One**

The first research question was, “Is there a correlation between Influencing Factors (quality of parent attachment, quality of peer attachment, state anger, trait anger) and Risk Factors (aggression and depressed mood) in urban African American adolescents?”

Findings for question one suggests that there are significant correlations between the quality of parent and adolescent attachment relationships, the quality of peer and adolescent attachment relationships, state and trait anger, and aggression. Similar results suggest significant correlations between these attachment relationships, anger, and depressed mood. These findings are congruent with literature linking the quality of attachment relationships with susceptibility to depressive symptoms, patterns of dysfunctional anger, and aggression (Bowlby, 1969, 1973, 1980; Constantine, 2006; Kobak et al., 2007; Kobak, Sudler, & Gamble, 1992). Findings from the present study show a negative correlation between the quality of attachment relationships between the teens and their parents, teens and their peers, and aggression. One key finding is that attachment relationships are important to urban African American adolescents; a second is that the quality of the relationships are meaningful and impactful. For instance, these findings point

to the possibility that when urban African American teens feel close to their parents and friends they tend to behave less aggressively and to experience fewer depressive symptoms than when they are feeling distant.

State anger relates to subjective feelings of anger ranging from mild irritation to rage. It is associated with the activation of the autonomic nervous system and the degree to which a person feels like showing their anger at any given time (Brunner & Spielberger, 2009). Trait anger on the other hand, is a more individualized form of anger proneness and relates to feelings of frustration, threats, and annoyances. High levels of trait anger are associated with experiencing state anger more often and with higher levels of intensity. The opposite is also true (Brunner & Spielberger, 2009). Another important finding from the present study relates to the correlation between anger and aggression and anger and depressed mood. Findings suggest high positive correlations between state and trait anger and aggression, a medium positive correlation between trait anger and depressed mood, and a high positive correlation between state anger and depressed mood.

These findings suggest that when anger is aroused or when feeling threatened, frustrated, or annoyed, some urban African American adolescents may be more prone to engaging in behaviors that are aggressive and/or more prone to experiencing depressive symptoms than the norm. The opposite could also be true, lower levels of state and trait anger might be associated with lower levels of depressed mood and aggression. What is not clear in this study and would be important to study in the future are factors that contribute to increased levels of state and trait anger in African American adolescents. Findings from such studies would be important to

understanding how to address dysfunctional anger patterns. Conversely, it would be important to learn about factors that help to prevent dysfunctional patterns of anger as well.

Theoretical and empirical attachment literature postulates a link between insecure attachment strategies, anger, depression, and aggression (Bowlby, 1969, 1973, 1980; Constantine, 2006; Kobak et al., 2007; Kobak, Sudler, & Gamble, 1992). Moreover, results from question one suggests a correlation between the quality of attachment relationships, aggression, and depressed mood. However, what are some possible characteristics of the study sample that might make them more vulnerable to having poor attachment relationships, prone to anger, aggression, and depressed mood? For one thing, according to demographic information collected on the sample, a number of study participants are living in foster care home settings, living with guardians, or living with family members other than their parents. While these living arrangements do not necessarily suggest links between the living arrangements, anger, aggression, or depressed mood, the underlying causes for the living arrangements might. Future studies should focus on understanding how or why African American adolescents may be living in alternative living situations. Another thing that was evident during the recruitment process and during the study sessions was the financial struggles that some of these youth and their parents are experiencing. Future studies should explore correlations between socioeconomic issues, anger, aggression, and depressed mood. Another thing that was prominent in some of the study environments was the level of blight, violence, and stress that some of these youth are having to cope with on a daily basis. Future studies aimed toward helping to address anger, depression, and aggression in African American youth must explore the connections between their living conditions and life stressors in planning meaningful and effective interventions to address anger, aggression, and depression.



## **Research Question Two**

The second research question asked, To what degree do Personal Factors (age, gender, current grade in school, ambivalent attachment, and avoidant attachment predict Influencing Factors (quality of parent attachment, quality of peer attachment, state anger, and trait anger) in urban African American adolescents?

For question two, personal factors (age, gender, current grade in school, and self-reported attachment style) were the predictor variables, and influencing factors (quality of parent and peer attachment and anger expression) were the outcome variables. The Attachment Questionnaire for Children [AQ-C] (Muris et al., 2001), based on the three-classification taxonomy of (a) secure, (b) avoidant, and (c) ambivalent attachment, that was used to explore self-reported attachment styles in this study. According to Ainsworth and Wittig (1969), infants with secure attachment showed obvious signs of anxiety when separated from their mothers and adaptation upon her return. Ambivalently attached infants, on the other hand, showed signs of anxiety and other distress in the absence of their mothers, but when reunited vacillated between desiring closeness with the mother and shunning her. Avoidantly attached infants showed little distress when separated from their mothers, a pattern of adaptation based on the experience of not having close relationships with primary caregivers (Ainsworth & Wittig, 1969). The Inventory of Parent and Peer Attachment – Revised (IPPA-R) was used to measure the quality of parent and peer attachment relationships. The scale measured alienation, communication, and trust (Gullone & Robinson, 2005).

The accumulation of interactions with primary caregivers, negative and positive is stored as mental representations (schema) from infancy and beyond, and they influence adolescents’

self-perceptions and their ability to trust and depend on their primary caregivers to meet their needs for love, support, attachment, and a secure base from which to explore the world (Bowlby, 1969). Literature postulates that when the quality of parent and adolescent attachment is poor, it leads to tendencies toward psychopathologies, dysfunctional anger patterns, and aggression (Bowlby, 1969, 1973, 1980; Constantine, 2006; Kobak et al., 2007; Kobak, Sudler, & Gamble, 1992). Findings from the present study support this theory.

A striking finding suggested by question two are the correlations between self-reported attachment style (ambivalent and avoidant), the quality of parent and adolescent attachment, and the correlations between self-reported attachment style and anger expression (state anger and trait anger). These findings indicate that avoidant attachment had a small negative correlation with the quality of parent and adolescent attachment suggesting that when the quality of parent adolescent attachment relationships goes up avoidant attachment strategies decrease. Findings further suggest that avoidant attachment was the only predictor variable having a significant correlation with state anger, and that avoidant attachment and ambivalent attachment, both insecure attachment strategies, were significantly positively correlated with trait anger.

Based on Ainsworth and Wittig's (1969) descriptions of avoidant attachment and Bowlby's (1969) postulations about correlations between attachment, psychopathologies, dysfunctional anger, aggression, and depression, these findings may be suggesting that some urban African American youth with an avoidant attachment style may have learned patterns of not having any expectations for satisfying relationships between themselves and their parents or primary caregivers. Based on the correlation between avoidant and ambivalent attachment and anger, the findings from question two may be pointing to the possibility that even though these

youth have learned to adapt to poor quality attachment relationships, they are angry about the lack of connectedness to their parents.

### **Research Question Three**

Research question was, To what degree do Personal Factors (age, gender, current grade in school, ambivalent attachment, and avoidant attachment) predict Risk Factors (aggression and depressed mood) mediated by Influencing Factors (quality of parent attachment, quality of peer attachment, state anger, and trait anger) in African American adolescents?

For research question three, 40 regression models were constructed and analyzed with standard multiple regression. Each of the models consisted of age, gender, current grade in school, and self-reported attachment style (personal factors) as predictor variables, quality of parent attachment, quality of peer attachment, state anger, and trait anger (influencing factors) as mediating variables, and either aggression or depressed mood as the outcome variables. Every model was evaluated to determine if they met the conditions set forth by Baron and Kenny (1986) for full mediational analysis. Of the 40 models, only six qualified. They were labeled A through F. In addition, each of them had avoidant attachment as the predictor variable. Aggression was the outcome variable for models A, B, and C and depressed mood the outcome variable for models D, E, and F.

Attachment literature suggests a negatively correlated relationship between insecure attachment and the quality of parent and adolescent attachment relationships (Ainsworth & Wittig, 1969; Bowlby 1958, 1969, 1973, 1980). This theory was supported in model A which suggested a small negative correlation between avoidant attachment and the quality of parent

attachment in this study population. Theoretical and empirical literature also points to a negative correlational relationship between the quality of adolescent and parent attachment relationships and aggressive behaviors (Bowlby, 1969, 1973, 1980; Kobak et al., 2007; Kobak, Sudler, & Gamble, 1992). Model A supports this theory by suggesting that a medium correlation exists between quality of parent attachment and aggression. In model A, quality of parent attachment was found to be a mediating variable in the relationship between avoidant attachment and aggression. Therefore, quality of parent attachment helps to explain the association between avoidant attachment and aggression.

Attachment literature puts forward that a positive correlational relationship exists between insecure attachment and dysfunctional anger (Bowlby 1958, 1969, 1973, 1980). Findings from model B suggest support for this theory by finding a medium positive correlation between avoidant attachment and state anger. In model C, a small positive correlation was found between avoidant attachment and trait anger. Empirical and theoretical literature further suggests that a relationship exists between anger expression and aggression (Bowlby, 1969, 1973, 1980; Kobak et al., 2007; Kobak, Sudler, & Gamble, 1992). Support for this literature was found in both models B and C. Model B showed a high positive correlation between state anger and aggression and model C a high positive correlation between trait anger and aggression. Moreover, trait anger and state anger were found to be mediators between avoidant attachment and aggression. Thus, anger expression helps to explain the association between avoidant attachment and aggression in urban African American adolescents.

Results from model D suggest a small negative correlation between avoidant attachment and the quality of parent attachment in this study population. Additionally, attachment literature

suggests that a negative correlational relationship exists between the quality of parent and adolescent attachment relationships and depressive symptoms (Bowlby, 1969, 1973, 1980; Constantine, 2006; Kobak et al., 2007; Kobak, Sudler, & Gamble, 1992). Findings for model D support this theory by showing a medium negative correlation between quality of parent attachment and depressed mood. Furthermore, quality of parent attachment was found to be a mediating variable in the relationship between avoidant attachment and depressed mood. Therefore, quality of parent attachment helps to explain the association between avoidant attachment and depressed mood.

Attachment literature proposes a positively correlated relationship between insecure attachment and dysfunctional anger (Bowlby 1958, 1969, 1973, 1980). In support of this theoretical position, model E suggests a medium positive correlation between avoidant attachment and state anger and in model F a small correlation between avoidant attachment and trait anger. In addition, theoretical and empirical literature posits that a relationship exists between anger expression and depressed mood (Bowlby, 1969, 1973, 1980; Constantine, 2006; Kobak et al., 2007; Kobak, Sudler, & Gamble, 1992). Models E and F support this theory. Model E shows a high positive correlation between state anger and depressed mood while model F suggests a medium positive correlation between trait anger and depressed mood. Moreover, trait anger and state anger were both found to be mediators between avoidant attachment and depressed mood. Thus, anger expression helps to explain the association between avoidant attachment and depressed mood in urban African American adolescents.

Overall findings for mediational analysis for question three suggest that insecure avoidant attachment predicts the quality of parent and adolescent attachment relationships, and predicts

state and trait anger. Furthermore, results suggest that the quality of parent and adolescent attachment relationships, state anger, and trait anger predict aggression and depression. All of these findings are in accordance with theoretical and empirical attachment literature. Finally, results from the six mediational models for question three suggest that the quality of attachment relationships between adolescents and their parents, the subjective feelings of anger that arouses the autonomic nervous system, and that may be present at any time, in combination with a desire to express the anger (state anger), and an individual's pattern of reactions to annoyances, threats, and frustrations that could lead to state anger (trait anger), are all mediators between avoidant attachment and aggression and avoidant attachment and depressed mood in urban African American adolescents. The significance of these findings will require further research.

### **Recruitment Site Group Mean Differences**

Findings suggested there were no statistically significant differences in mean scores between groups from the four recruitment sites for quality of adolescent and parent attachment and depressed mood, suggesting that the quality of adolescent and parent attachment relationships and experiences with depressed mood were similar for adolescents across all the recruitment sites.

Results showed that mean scores on adolescent and peer attachment were significantly different between Matrix Human Services and Inkster High School. The mean scores from these two recruitment sites represent the lowest and highest among all four recruitment sites. This finding suggests that youth from Matrix Human Service may experience lower quality attachment relationships with peers than those from the other recruitment sites. However, this

finding should be interpreted cautiously as the eta square was 0.10 indicating a medium effect size.

Results indicated that mean scores on total aggression and total state anger differed significantly for the Early College Alliance Program and Christian Love Fellowship Church from those of Inkster High School, and Matrix Human Services. Mean scores for both total aggression and state anger were lowest for Christian Love Fellowship Church followed by Early College Alliance Program. Mean scores for aggression and state anger were highest for Matrix Human Services and were slightly lower for Inkster High School. The eta square for total aggression was 0.22 indicating a large effect size, and for state anger 0.12 indicating a medium effect size. These findings suggest that aggression and state anger may be higher in youth from the inner city and urban high schools and lower in youth involved in church activities and programs designed to increase the odds for having better educational outcomes in the short run and better socioeconomic and quality of life outcomes in the long run. Of course, more research is required to test these hypotheses.

Finally, results showed that mean scores for trait anger differed significantly between Christian Love Fellowship Church and Inkster High School. The mean scores for Inkster High School were highest among the four recruitment sites and lowest for Christian love Fellowship Church. These findings suggest that trait anger may be higher in adolescents from Inkster High School than adolescents from Christian love Fellowship Church. However, these findings should be interpreted cautiously because the eta square was only 0.06 indicating a medium effect size.

## **Study Limitations**

A number of limitations may have affected the generalizability of the information in the present study. They are discussed below.

The first limitation related to sampling bias introduced into the study due to the sampling strategies selected. They included convenience sampling and network sampling, both of which are nonprobability-sampling methods. Although convenience sampling is considered to be the “weakest form of sampling, it is the most commonly used method in many disciplines” (Polit & Beck, 2012 p. 276). This method was chosen because of the difficulty in recruiting the target population through other means. Participants were recruited by responding to recruitment flyers posted in local libraries and community centers or from flyers that were sent home by the schools they were attending. Furthermore, recruitment flyers were disseminated to students walking home from their high school. In some cases, the adolescents’ and their parents assisted in the recruitment process, by informing friends or family members about the study, primarily because of the \$20 incentive offered for participation. Although participants self-selected to participate in the study, they had to meet inclusion and exclusion criteria such as having signed permission slips and signed assent forms. These methods of sampling continued until the desired number of study participants was obtained. Because of the sampling strategies used in the study, generalizability of the findings may be limited to the participants in the study.

A second limitation was three possible threats to construct validity. The first related to the lack of control over some of the study environments. One study session took place in the youth center of a church that had assisted in recruiting study participants. During the study session, the youth pastor was sampling music, on a low volume, for use in the upcoming Sunday



service. Study participants were asked if the music was distracting, and 100% of them said it was not. In a different study session that took place in a local community center, a group of family members and friends attending the funeral services for a teenager that had been murdered started a fight with some other attendees, resulting in the police making some arrests. Although the study participants were not in any direct danger of being harmed by the event, some of them expressed fear that a family member attending the funeral might potentially be harmed. The second possible threat to construct validity related to the suspicion that some study participants may have been experiencing evaluation apprehension while responding to the survey questions. Specifically, they may not have answered the survey questions as openly and honestly as they could have due to wanting to be seen in a more favorable light. For instance, not wanting to admit to struggling with depressive symptoms, anger, aggression, or having problems with their parents. On the other hand, some participants may have exaggerated their responses to the questions on anger and aggression to bolster their image of being tough and strong. A third possible threat to construct validity related to the lack of sincerity in wanting to participate in the study. This may have been the case for those agreeing to participate for the generous incentive gift of \$20. A couple participates, for instance, verbalized wanting to hurry up and finish the study “so you can give me my money.” In other cases, participants admitted that their mothers would probably take the incentive gift from them. One mom stated that the incentive gift could help buy school lunches for her children. Given the current economic climate and the socioeconomic status of some participants, these occurrences came as no real surprise.

A third study limitation related to the difficulty some participants had understanding concepts related to survey questions. For instance, one of the questions in the Aggression

Questionnaire asked participants if they were even tempered. Approximately four participants asked for an explanation of what even tempered meant.

### **Recommendations**

The following recommendations were based on the findings of this study.

1. For years, attachment literature has postulated the importance of attachment relationships between children and adolescents and their primary caregivers, most often the parents, in the development of positive self-perceptions and healthy self-regulation. Conversely, the literature has put forward the possible negative life outcomes for children and adolescents that are associated with insecure attachment such as low self-esteem, dysfunctional anger patterns, various types of psychopathologies, antisocial personality disorder, and violence and aggression. Findings from this study suggest correlations among self-reported insecure attachment, anger expression, depressed mood, and aggression. Because of the reported levels of violence and aggression related deaths and injuries in African American youth, further studies are needed to explore these correlations with experimental, qualitative, and longitudinal studies. For instance, experimental studies could focus on decreasing levels of self-reported insecure attachment in urban African American adolescents by developing programs that are designed to improve the quality of attachment relationships between at-risk urban African American adolescents and their parents or primary caregivers. If, for example, attachment relationships have been hampered due to parental incarceration in the penal system, perhaps an experimental program could be implemented that facilitates more frequent visits between the youth and his/her parent. Longitudinal studies could focus on implementing programs that encourage the development of secure attachment between infants and their parents during pregnancy and

through adolescence. Qualitative researchers could design phenomenological or ethnographic studies examining the lived experience of urban African American adolescents in relation to their experiences with attachment relationships, aggression, depressed mood, and anger, using findings to develop prevention and early intervention programs designed to increase secure attachment and decrease aggression, anger, and depression in adolescents with insecure attachment strategies, depressed mood, aggression, and dysfunctional anger.

2. Many of the participants and their parents were drawn to the study because of the incentive offered for participation. While this was anticipated, what was not anticipated was just how important a \$20 incentive gift would be to helping meet some financial needs, to buy food for the family, or to help meet other essential needs for some of the teens and their families. For some of them it appeared that the main reason for participating was to earn the \$20 rather than having a sincere interest in helping with the study. One recommendation for further studies with teens and families experiencing socioeconomic challenges is to try to build relationships with potential participants and their families prior to recruitment to assess their appropriateness and sincerity of interest in participating in the study, and to foster the building of trust. An ethnographic qualitative study might be one approach to consider.

3. The literature on aggression and violence reports that homicide is the leading cause of death for African American males between the ages 10-24. One disappointing outcome of the present study was the low number of males recruited for participation. There are no clear answers of why this was the case. However, because of the alarming rates in which African American youth are experiencing violence related deaths and injuries, the present study should be replicated with samples comprised entirely of African American males.

4. The findings from this study suggested strong correlations between avoidant attachment and the quality of parent and adolescent attachment, between avoidant attachment and state and trait anger, and avoidant attachment and aggression and depressed mood. Although the Attachment Questionnaire for Children [AQ-C] (Muris et al., 2001) has been widely used in studies assessing attachment style, primarily because of its ease in administration when compared to other more completed instruments and methodologies for measuring attachment, it seemed inadequate for use in this study population for the following reasons: 1) participants were asked to self-select an attachment style after reading three very brief descriptions of ways in which they interact and bond with peers, 2) there may be a bias toward selecting the secure attachment style description because it has a more favorable appeal when compared to the descriptions for ambivalent and avoidant attachment, and 3) it does not include a description for disorganized attachment, an attachment style that is strongly correlated with psychopathologies, antisocial personality disorders, and violence (Levy & Orlans, 2004). It is recommended that a more comprehensive instrument be developed for assessing self-reported attachment styles in studies with urban and inner-city African American children and adolescents.

5. Findings from the current study suggested that avoidant attachment is correlated with the quality of parent and adolescent attachment, anger, aggression, and depressed mood. The age range of participants was 15-17. Considering that attachment styles are thought to be developed from birth to about three years of age, and given the impact that attachment styles is thought to play in the development of psychopathologies, dysfunctional anger patterns, aggression, and depressed mood, it would seem beneficial to start conducting more attachment related experimental and longitudinal studies in African American youth from birth.

6. In study sessions, some youth seemed to have difficulty understanding concepts and words used in some of the instruments. For instance, a number of youth needed help understanding the term “even tempered”. This is despite the fact, that most of the instruments were designed for use with children and adolescents. This study should be replicated using instruments that have been pilot tested, further refined, and adapted for use with urban and inner-city African American youth and should include concepts and words they would better understand.

7. Findings from the one-way between-group analysis of the variance with post-hoc tests suggested that youth who attend church youth programs and college preparation programs seemed to have an advantage over youth from the inner-city and urban high school with regards to lower mean scores on aggression, state anger, and trait anger. It is recommended that these hypotheses be tested with further studies, for example, a longitudinal intervention study exploring aggression, anger, depressive symptoms, socioeconomic, and quality of life outcomes for urban African American youth that regularly participate in well-designed, quality youth programs versus those that do not. Moreover, replication studies are needed to further explore factors that contribute to differences in mean scores on aggression, anger, and depressive symptoms in urban African American adolescents. Findings from such studies may influence the development of public policy and funding related to youth prevention and early intervention programs for inner city and urban African American youth.

### **Implications for Nursing and Others Working With Youth**

Secure attachment relationships between infants, children, adolescents, and their primary caregivers are important to mental and emotional health, self-esteem, and positive life outcomes

(Bowlby, 1973, Irons & Gilbert, 2004; Turnage, 2004). The establishment of attachment relationships starts at birth and continues through the third year of life (Ainsworth, 1964). However, attachment relationships continue to be vital throughout life and until death.

Findings from this study suggested that in some urban African American adolescents the quality of attachment relationships they have with their parents, aggression, and depressed mood are significantly correlated. Moreover, significant correlations were also found between anger and aggression and anger and depressed mood. More research is needed to further explicate these relationships in this population. However, psychiatric mental health nurse practitioners, pediatric nurse practitioners, community health nurse practitioners, school counselors, youth mental health workers, and youth therapists should consider routinely assessing urban African American adolescents for the quality of their attachment relationships with parents and other primary caregivers such as child-care providers. They should also evaluate adolescents' attachment styles, screen for depressive symptoms and suicide risk, and assess for patterns of anger management, aggression, and violence. Based on findings from these assessment data, it is further recommended that appropriate diagnoses be made by a qualified practitioner and that relevant treatment plans be developed, implemented, re-evaluated, and updated regularly.

Bowlby (1969, 1973, 1980) put forth that the quality of attachment relationships between children and parents is based on the confidence children have in the availability and responsiveness of attachment figures and that this confidence slowly develops from birth through adolescence and remains stable throughout life. During this developmental phase, internal working models are also being molded in the form of self-schema, including memories, which impact on how individuals view the world, perceive themselves functioning in the world, on

feelings of safety and security, and on the development of either secure or insecure attachment .

In addition, once attachment relationships are established, infants, children, and adolescents have an intense desire to maintain a close and lasting relationship with whom they have become attached. Breaks in the attachment bonds through separation may result in pathological sadness, grief, anger, hostility, anxiety, and depression (Bowlby, 1969, 1973, 1980). Mediation analyses, in this study, suggested that both the quality of adolescent attachment relationships with their parents and anger, mediate between avoidant attachment and aggression, and between avoidant attachment and depressed mood. Based on these findings, it is recommended that parents, nurses, teachers, athletic coaches, the clergy, and others that are working with urban African American adolescents experiencing disruptions in attachment with their parents or primary caregiver be observed for signs of pathological sadness, grief, anger, hostility, aggression, anxiety, and depressive symptoms. Some examples are children and adolescents with a parent that is incarcerated, families experiencing separation or divorce, parental death, military families, situations where parents are away from home for extended periods of time due to the demands of a work schedule, children and adolescents living in out-of-home settings such as juvenile detention facilities, residential treatment facilities, and foster care homes.

Associations between insecure attachment, anger, aggression, and depressed mood are salient in the findings of this study. Previous studies have shown similar correlations in infants, children, and adolescents in cases of parental mental illness, child neglect, and abuse (Carlson, 1998; Levy & Orians, 1999; Main & Solomon, 1990). Therefore, to reduce the risk for development of insecure attachment, child neglect, and abuse, it is recommended that nurse midwives consider routinely assessing expectant parents, early in the pregnancy, for mental

health problems, a history of child neglect and abuse, and make appropriate treatment referrals. To maximize the potential for positive attachment outcomes for the infant and to influence parenting practice outcomes, strategies should also include assessing and addressing the attachment needs of the parents and other primary caregivers such as older siblings, childcare workers, and grandparents. Parents should also be educated on how to evaluate and select safe and appropriate childcare providers to care for their children.

Findings from this study suggest that urban African American youth who participate in church youth programs and early college enrollment programs for high school students have lower levels of aggression and anger. Therefore, parents, grandparents, teachers, athletic coaches, community health nurses, school nurses, the clergy, school counselors, and others working with urban African American youth should do the following, 1) make available to youth and their parents information about well-designed, quality youth programs, 2) help facilitate their enrollment into these programs, 3) seek funding for the development of such programs in local schools and communities, and 4) get involved with influencing public policies and appropriating more funding for prevention and early intervention programs in urban and inner-city communities.

### **Conclusions**

Theoretical and empirical literature on attachment has been in existence for approximately half a century. During this period, secure attachment has been put forth as essential to emotional and mental well-being and insecure attachment as correlating with a host of psychopathologies, low self-esteem, and societal woes like substance abuse and teen pregnancy. Furthermore, insecure attachment has been linked to anger, aggression, and violence.



It is concerning that despite the fact that homicide is the leading cause of death in African American adolescent males there is scant literature on these correlations in this vulnerable population. The purpose of this study was to explore the impact of self-reported attachment style on aggression and depressed mood in urban African American adolescents and to add to the body of knowledge on attachment in African Americans in general and especially in African American Adolescents. These objectives were achieved.

Findings suggested that the quality of parent and adolescent attachment relationships in some urban African American adolescents is negatively correlated with both aggression and depressed mood indicating that as the quality of attachment increases aggression and depressed mood decrease, and conversely as the quality of attachment decreases aggression and depressed mood increases. In addition, findings suggested that adolescent anger is positively correlated with aggression and depressed mood implying that as adolescent anger increases aggression and depressed mood increases and when anger decreases aggression, and depressed mood decreases. Furthermore, findings suggested that the quality of attachment relationships between some urban African American adolescents and their parents and anger are both mediators between avoidant attachment and aggression and avoidant attachment and depressed mood.

The findings of the study have implications for nursing and other disciplines working with urban African American adolescents that are experiencing or may be at risk for experiencing aggression, anger, and depressed mood related to insecure attachment strategies and poor quality attachment relationships with their parents. Recommendations include conducting experimental, qualitative, and longitudinal research, assessment and treatment of insecure attachment, anger, aggression, and depressed mood, and appropriating funding for

prevention and early intervention programs designed to decrease violence and aggression and to improve mental health and well-being outcomes in this vulnerable population.

## APPENDICES

## APPENDIX A

### Recruitment Flyer



# Announcing a 2012 Research Study

## **Attachment, Aggression, and Depression**

### **In African American Adolescents**

Marie McDade, a PhD student from the University of Michigan School of Nursing, is seeking African American youth between the ages of 15-17 to take part in a study asking them to answer questions about their experience with depression, aggression, anger management, and how close they feel to people like their parents and friends.

## **General Information**

- Participation is voluntary
- To be included you must be an African American adolescent between the ages of 15-17
- **Have parent sign permission slip**
- Meet one time for about 1 hour
- Study will be conducted by Marie McDade a PhD student from The University of Michigan School of Nursing
- Confidentiality maintained
- **Receive \$20 for participation**
- Snacks and Beverages Served

**For More Information Call or Text**

**734.260.0707**

**Email: [mcdadem@umich.edu](mailto:mcdadem@umich.edu)**

**Tell a Friend!!!**

HUM00064327

## **APPENDIX B**

### **Parental Permission Slip**

#### **Parental Permission for Child to Participate in a Research Study**

Study Title: The impact of Self-Reported Attachment Style on Aggression and Depressed Mood in Urban African American Adolescents

Principal Investigator: Marie McDade, RN, MS, Ph.D Student, School of Nursing, University of Michigan

Faculty Advisor: Bonnie Hagerty, PhD, RN, CS, School of Nursing, University of Michigan

#### **Overview and Purpose**

We are seeking 200 African American youth ages 15-17 to take part in a study asking them to answer questions about their experiences with depressed mood, aggression, anger management, and the quality of relationships with their parents and friends.

**\*\*If you would like to review a copy of the questionnaires please contact me and I will provide that information to you.**

#### **What your child is being asked to do**

Study participants will answer questions on six surveys. The first survey asks them to tell us their age, sex, current grade in school, and with whom they live with most of the time. The second survey has three questions about how comfortable they feel in their relationships with their friends. The third survey has 28 questions about trust, communication, and feelings of closeness between themselves and their parents or guardians and 25 questions about trust, communication, and close feelings between themselves and his/her friends. The fourth survey has questions about expressing angry feelings. The fifth survey has questions about managing aggressive behaviors. The sixth survey has questions about their experience with depression.

#### **Voluntary nature of the study**

Participation in this study is completely voluntary. Even if you allow your child to take part in the study, you may change your mind and withdraw your approval at any time. Your child may choose not to take part in the study, even if you agree, and may refuse to answer any questions or stop participating at any time.

## **Risks and discomforts**

It is not likely that any youth will experience problems while answering the questions. However, if I notice that your child seems to be upset while answering any question, I will encourage him/her to skip that question or, if they desire, to stop participation in the study. Additionally, each youth will be given a list of resources to find someone to talk to about their feelings.

## **Compensation**

To show appreciation for assisting with the study, each participant that completes all questionnaires will receive \$20.

## **Confidentiality and security**

We plan to publish the results of this study, but will not include any information that would identify you or your family members. The survey will not include your personal information. It will only have a number code for identification. The survey will be kept in a locked cabinet in my office. I will enter study data from the surveys into my computer. It is password protected and I am the only one that will be allowed to open it. I will keep the study data on the computer for future research on African American adolescents, but will shred the surveys after one year. There are some reasons why people other than the principal investigator may need to see information you provided as part of the study. This includes organizations responsible for making sure the research was done safely and properly, including the University of Michigan, government research offices.

## **Benefits**

While your child may not directly benefit from participating in our study, we hope that this study will contribute, in the future, to decreasing death rates related to aggression and violence in African American youth.

## **Sharing study information with others**

For your child's protection, some organizations may need to review information about the study. For instance, the University of Michigan or government research offices may want to check to be sure the research was done safely and properly.

## **Contact information**

If you have questions about this research, including questions about scheduling of the study date or payment for participating, you can call or text Marie McDade, RN, MS, Ph.D. student, University of Michigan, School of Nursing, 400 N. Ingalls, Ann Arbor, MI 48109, (734) 260.0707. You may also email her at, [mcdadem@umich.edu](mailto:mcdadem@umich.edu).

If you have any questions about your child’s rights as a study participant, please contact the University of Michigan Institutional Review Board Health Sciences and Behavioral Sciences, (734) 936-0933, 540 E. Liberty St., Suite 202 Ann Arbor, MI 48104-2210, [irbhsbs@umich.edu](mailto:irbhsbs@umich.edu).

**Return Bottom Slip Only - Keep Top Part For Your Records**



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Parental Permission

By signing this document, you are agreeing to allow your child, \_\_\_\_\_, to be part of the study entitled: The Impact of Self-Reported Attachment Style on Aggression and Depressed Mood in Urban African American Adolescents. Your child’s participation in this study is completely voluntary. If you allow your child to be part of the study, you may change your mind and withdraw your approval at any time. Your child may choose not to be part of the study, even if you agree, and may refuse to answer any questions or stop participating at any time.

You will be given a copy of this permission slip for your records and one copy will be kept with the study records. I give my permission for my child to participate in this study.

Parent Signature: \_\_\_\_\_

Parent contact number (best number): \_\_\_\_\_

Email address: \_\_\_\_\_

## APPENDIX C

### Adolescent Assent Form

#### Assent to participate in a Research Study (15-17 year olds)

Study Title: The impact of Self-Reported Attachment Style on Aggression and Depressed Mood in Urban African American Adolescents

Principal Investigator: Marie McDade, RN, MS, Ph.D. Student, School of Nursing, University of Michigan

Faculty Advisor: Bonnie Hagerty, PhD, RN, CS, School of Nursing, University of Michigan

#### **About the study**

We are seeking 200 African American youth ages 15-17 to take part in a study asking them to answer questions about their experiences with depressed mood, aggression, anger management, and the quality of relationships with their parents and friends.

#### **What you will do**

Study participants will answer questions on six surveys. The first survey asks your age, sex, current grade in school, and with whom you live with most of the time. The second survey asks you three questions about how comfortable you feel in your relationships with your friends. The third survey has 28 questions about trust, communication, and feelings of closeness between you and your parents or guardians and 25 questions about trust, communication, and close feelings between you and your friends. The fourth survey has questions about how you express your angry feelings. The fifth survey has questions about how you manage aggressive behaviors. The sixth survey asks about your experience with depression.

**\*\*If you would like to review a copy of the surveys please contact me at 734.260.0707.**

#### **Benefits**

Even though there may not be any direct benefit to you from participating in the study, we hope that in the future this study will help to decrease deaths related to aggression and violence in African American adolescents.

#### **Risks and discomforts**

It probably will not happen, but if answering questions about your relationships with your parents and friends makes you feel too uncomfortable, you can choose not to answer a question or you may choose to stop taking the survey at anytime. Just tell me if you want to stop. I will provide a list of resources for all youth to find someone to talk to you about your feelings.

#### **Compensation**

You will be paid \$20 for completing all surveys.

#### **Confidentiality**



We plan to publish the results of this study, but will not include any information that would identify you or your family members. The survey will not include your personal information. It will only have a number code for identification. The survey will be kept in a locked cabinet in my office. I will enter study data from the surveys into my computer. It is password protected and I am the only one that will be allowed to open it. I will keep the study data on the computer for future research on African American adolescents, but will shred the surveys after one year.

There are some reasons why people other than the principal investigator may need to see information you provided as part of the study. This includes organizations responsible for making sure the research was done safely and properly, including the University of Michigan, government research offices.

**Voluntary nature of the study**

Taking part in this study is completely voluntary. Even if your parents say you can participate in the study, you do not have to do so. Even if you say yes now, you may change your mind and stop at any time.

**Contact information**

If you have questions about this research, including questions about scheduling of the study date or compensation for participating, you call or text Marie McDade, RN, MS, Ph.D. student, University of Michigan, School of Nursing, 400 N. Ingalls, Ann Arbor, MI 48109, (734) 260.0707. You may also email her at [mcdadem@umich.edu](mailto:mcdadem@umich.edu).

If you have any questions about your rights as a research participant, please contact the University of Michigan Institutional Review Board Health Sciences and Behavioral Sciences, (734) 936-0933, 540 E. Liberty St., Suite 202 Ann Arbor, MI 48104-2210, [irbhsbs@umich.edu](mailto:irbhsbs@umich.edu).

**Assent**

By signing this document, you are agreeing to be in the study. We will give you a copy of this document and will keep a copy in our study records. Be sure that we have answered your questions about the study and you understand what you are being asked to do. You may contact the researcher if you think of a question later.

I agree to participate in this study.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Teen contact number (best number): \_\_\_\_\_

Home Phone: \_\_\_\_\_

Facebook address: \_\_\_\_\_

Email address: \_\_\_\_\_

## APPENDIX D

### About You Questionnaire

The following questions are all about you. Please circle the number next to the answer that best describes you.

1. How old are you? (Please circle the number)
  1. 12 years old or younger
  2. 13 years old
  3. 14 years old
  4. 15 years old
  5. 16 years old
  6. 17 years old
  7. 18 years old or older
  
2. What sex are you? (please circle the number)
  1. Female
  2. Male
  
3. What do you consider to be your ethnic or racial background (please circle all that apply to you)
  1. White (non-Hispanic)
  2. Hispanic/Latino
  3. African American/Black
  4. American Indian/Alaskan  
Native
  5. Asian/Pacific Islander
  6. Other, Please describe  

---

4. What was the last grade you completed in school? (Please Circle the number that applies to you)

1. 5<sup>th</sup> Grade
2. 6<sup>th</sup> Grade
3. 7<sup>th</sup> Grade
4. 8<sup>th</sup> Grade
5. 9<sup>th</sup> Grade
6. 10<sup>th</sup> Grade
7. 11<sup>th</sup> Grade
8. 12<sup>th</sup> Grade
9. In school, but no grade
10. I'm not in school

5. With whom do you live most of the time? (Please circle all That applies to you)

1. With biological mother
2. With biological father
3. With adoptive mother
4. With adoptive father
5. With step-mother
6. With step-father
7. With foster-mother
8. With foster-father
9. With guardian-mother
10. With guardian-father
11. With brother/s or  
Sister/s
12. With other non-  
relative/s
13. I live alone

## APPENDIX E

### Permission to Use Attachment Questionnaire – Children

Re: Permission to use AQ-C

My name is Marie McDade, I am a PhD student attending The University of Michigan. My research topic is "The Impact of Self-Reported Attachment Style on Aggression and Depression in Urban African American Adolescents". I am writing to ask permission to use the AQ-C instrument and to request information on administration and scoring. Also, is there a version of the AQ-C that includes characteristics of type D - disorganized attachment (Main & Solomon, 1990)? If so, could you provide that too? If not, for my study, would you grant me permission to modify your questionnaire by adding an item that describes some of the defining characteristics of type D attachment?

Thank you,

Marie McDade

Reply Forward



Muris Peter (PSYCHOLOGY) <peter.muris@maastrichtuniversity.nl> 7/23/12

to me

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 **Attachment Questionnaire for Children.doc**

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## APPENDIX F

### Attachment Questionnaire for Children (AQ-C) Scale

Choose the description that fits you the most.

Remember: You are allowed to choose only one of the descriptions below.

- I find it easy to become good friends with others. I feel comfortable when I am able to trust them and they are able to trust me. I am almost never scared of being deserted or that someone becomes really close friends with me.
  
  - I don't feel entirely comfortable when I am close friends with others. I find it difficult to trust them completely, I find it difficult to be depended from them. I am nervous when someone wants to be friends with me. It often occurs that friends want more from me than I find pleasant.
  
  - I find that others don't want to be close friends with me as much as I would like to. I worry that my best friend doesn't like me and will end our friendship. I personally would like to do everything with my best friend. I notice that as a result I sometimes scare others away.
- 

#### Scoring

Description 1 = Secure Attachment

Description 2 = Avoidant Attachment

Description 3 = Ambivalent Attachment

#### Key references

Muris, P., Mayer, B. & Meesters, C. (2000). Self-reported attachment style, anxiety, and depression in children. *Social Behavior and Personality, 28*, 157-162.

Muris, P., Meesters, C., Van Melick, M., & Zwambag, L. (2001). Self-reported attachment style, attachment quality, and symptoms of anxiety and depression in young adolescents. *Personality and Individual Differences, 30*, 809-818.

#### Note

The AQ-C is an age-downward version of Hazan and Shaver's single-item measure of attachment style. See: Hazan, C., & Shaver, P. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology, 52*, 511-524.

## APPENDIX G

### Permission to Use IPPA-R

Thank you! Quoting Eleonora Gullone <[Eleonora.Gullone@med.monash.edu.au](mailto:Eleonora.Gullone@med.monash.edu.au)>:

Dear Eddia,  
please find a copy of the IPPA-R details attached.  
regards,  
Eleonora

Marie McDade wrote:  
Hello Dr.Gullone,

I am a third year PhD student in the School of Nursing at The University Of Michigan. My research interest is attachment style and Anger in African American adolescents.

I am searching for an attachment instrument that I can pilot with my study population and would like to know if the IPPA-R is available and how I would go about obtaining it and the associated materials for scoring.

Educationally yours,

Eddia McDade

--

Eleonora Gullone, PhD, FAPS  
Associate Professor  
School of Psychology and Psychiatry  
Faculty of Medicine, Nursing, and Health Sciences,  
Monash University  
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Research: <http://www.med.monash.edu.au/spppm/research/emotions-project>

## APPENDIX H

### Inventory of Parent and Peer Attachment Revised

#### Inventory Of Parent And Peer Attachment – Revised (IPPA-R)

Authors: Eleonora Gullone and Kym Robinson, 2005

Department of Psychology, Monash University, Australia

This question sheet asks about your relationships with people who are important in your life such as your mother, father, and your close friends. Please read the directions to each part carefully.

#### Part 1

Some of the following statements asks about your feelings about your Parents or the people who have acted as your parents, for example, a step-parent, foster parent, or guardian. (If you have more than one person acting as your parent, answer the questions for the one you feel closest to)

Please read each statement and circle the **One** number that tells how true the statement is for now

	Never True	Sometimes True	Always True
1. My parents respect my feelings.	1	2	3
2. My parents are good parents.	1	2	3
3. I wish I had different parents.	1	2	3
4. My parents accept me as I am.	1	2	3
5. I can't depend on my parents to help me solve a problem.	1	2	3
6. I like to get my parents' view on things I'm worried about.	1	2	3
7. It does not help to show my feelings when I am upset.	1	2	3
8. My parents can tell when I'm upset about something.	1	2	3
9. I feel silly or ashamed when I talk about my problems with my parents.	1	2	3
10. My parents expect too much from me.	1	2	3

	Never True	Sometimes True	Always True
11. I easily get upset at home.	1	2	3
12. I get upset a lot more than my parents know about.	1	2	3
13. When I talk about things with my parents they listen to what I think.	1	2	3
14. My parents listen to my opinions.	1	2	3
15. My parents have their own problems, so I don't bother them with mine.	1	2	3
16. My parents help me to understand myself better.	1	2	3
17. I tell my parents about my problems and troubles.	1	2	3
18. I feel angry with my parents.	1	2	3
19. I don't get much attention at home.	1	2	3
20. My parents support me to talk about my worries.	1	2	3
21. My parents understand me.	1	2	3
22. I don't know who I can depend on.	1	2	3
23. When I am angry about something, my parents try to understand.	1	2	3
24. I trust my parents.	1	2	3
25. My parents don't understand my problems.	1	2	3
26. I can count on my parents when I need to talk about a problem.	1	2	3
27. No one understands me.	1	2	3
28. If my parents know I am upset about something, they ask me about it.	1	2	3



## Inventory Of Parent And Peer Attachment – Revised (IPPA-R)

Authors: Eleonora Gullone and Kym Robinson, 2005

Department of Psychology, Monash University, Australia

### Part 2

This part asks about your feelings about your relationships with your close friends.

Please read each statement and circle the **One** number that tells how true the statement is

	Never True	Sometimes True	Always True
1. I like to get my friends' opinions on things I'm worried about.	1	2	3
2. My friends can tell when I'm upset about something.	1	2	3
3. When we talk, my friends listen to my opinion.	1	2	3
4. I feel silly or ashamed when I talk about my problems with my friends.	1	2	3
5. I wish I had different friends.	1	2	3
6. My friends understand me.	1	2	3
7. My friends support me to talk about my worries.	1	2	3
8. My friends accept me as I am.	1	2	3
9. I feel I need to be around my friends more often.	1	2	3
10. My friends don't understand my problems.	1	2	3

	Never True	Sometimes True	Always True
11. I do not feel like I belong when I am with my friends.	1	2	3
12. My friends listen to what I have to say.	1	2	3
13. My friends are good friends.	1	2	3
14. My friends are fairly easy to talk to.	1	2	3
15. When I am angry about something, my friends try to understand.	1	2	3
16. My friends help me to understand myself better.	1	2	3
17. My friends care about the way I feel.	1	2	3
18. I feel angry with my friends.	1	2	3
19. I can count on my friends to listen when something is bothering me.	1	2	3
20. I trust my friends.	1	2	3
21. My friends respect my feelings.	1	2	3
22. I get upset a lot more than my friends know about.	1	2	3
23. My friends get annoyed with me for no reason.	1	2	3
24. I tell my friends about my problems and troubles	1	2	3
25. If my friends know that I am upset about something, they ask me about it.	1	2	3

## APPENDIX I

### Permission to Use the Aggression Questionnaire

Good afternoon Dr. Buss,

what a pleasure and honor to speak to you today. Thank you for taking my call.

As mentioned by phone, my name is Marie McDade, I am a PhD candidate at the University of Michigan in Ann Arbor. My research topic is "The Impact of Attachment Security on Aggression and Depression in Urban African American Adolescents". I am planning to use the Aggression Questionnaire to measure aggression. Thank you for your assistance.

You asked me to email you and then you would forward the scale and scoring information. By the way, would it be okay to simplify some of the words (for instance, the word characteristic) for my target population? My age range is 14 - 17.

Again,

Thank you very much.

Marie McDade

Arnold Buss

No problem about your calling. I was once a graduate student. Here is the information you need;

#### **The aggression questionnaire**

No permission is needed to use it; but if needed, I give my permission (AB)

## APPENDIX J

### Aggression Questionnaire Scale

#### Physical aggression

Once in a while I cannot control the urge to strike another person

Given enough provocation, I may hit another person

If somebody hits me, I hit back

I get into fights a little more than the average person

If I have to resort to violence to protect my rights, I will

I can think of good reasons for hitting another person

I have threatened people I know

#### Verbal aggression

I tell my friends openly when I disagree with them

I often find myself disagreeing with people

When people annoy me, I tell them what I think of them

I cannot help getting into arguments with people who disagree with me

My friends say I am somewhat argumentative A

#### Anger

I have become so mad that I have broken things

I flare up quickly but get over it quickly

When frustrated, I let my irritation show

I sometimes feel like a powder keg ready to explode

Some of my friends think I'm a hothead

I sometimes fly off the handle for no good reason

I have trouble controlling my temper

### **Hostility**

I am sometimes eaten up with jealousy

At times I feel I have gotten a raw deal out of life

Other people always seem to get the breaks

I wonder why sometimes I feel so bitter about things

I know the "friends" talk about me behind my back

I am suspicious of overly friendly strangers

I sometimes feel that people are laughing at me behind my back

When people are especially nice, I wonder what they want.

Mix items to avoid excessive repetition.

Have subjects rate each item from least (1) to most (5) characteristic of me, using ratings of 2, 3, or 4) as well. Add up the ratings for each scale.

Reference: Buss, A.H., & Perry, M. (1992) The aggression questionnaire. Journal, of Personality and Social Psychology, 63, 452-459.

## APPENDIX K

### CES-DC Instructions

# Center for Epidemiological Studies Depression Scale for Children (CES-DC)

The Center for Epidemiological Studies Depression Scale for Children (CES-DC) is a 20-item self-report depression inventory with possible scores ranging from 0 to 60. Each response to an item is scored as follows:

- 0 = “Not At All”
- 1 = “A Little”
- 2 = “Some”
- 3 = “A Lot”

However, items 4, 8, 12, and 16 are phrased positively, and thus are scored in the opposite order:

- 3 = “Not At All”
- 2 = “A Little”
- 1 = “Some”
- 0 = “A Lot”

Higher CES-DC scores indicate increasing levels of depression. Weissman et al. (1980), the developers of the CES-DC, have used the cutoff score of 15 as being suggestive of depressive symptoms in children and adolescents. That is, scores over 15 can be indicative of significant levels of depressive symptoms.

Remember that screening for depression can be complex and is only an initial step. Further evaluation is required for children and adolescents identified through a screening process. Further evaluation is also warranted for children or adolescents who exhibit depressive symptoms but who do not screen positive.

See also

Tool for Families: Symptoms of Depression in Adolescents, p. 126.  
Tool for Families: Common Signs of Depression in Children and Adolescents, p. 147.

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APPENDIX L

CES-DC Scale

# Center for Epidemiological Studies Depression Scale for Children (CES-DC)

<b>DURING THE PAST WEEK</b>	<b>Not At All</b>	<b>A Little</b>	<b>Some</b>	<b>A Lot</b>
1. I was bothered by things that usually don't bother me.	_____	_____	_____	_____
2. I did not feel like eating, I wasn't very hungry.	_____	_____	_____	_____
3. I wasn't able to feel happy, even when my family or friends tried to help me feel better.	_____	_____	_____	_____
4. I felt like I was just as good as other kids.	_____	_____	_____	_____
5. I felt like I couldn't pay attention to what I was doing.	_____	_____	_____	_____
<b>DURING THE PAST WEEK</b>	<b>Not At All</b>	<b>A Little</b>	<b>Some</b>	<b>A Lot</b>
6. I felt down and unhappy.	_____	_____	_____	_____
7. I felt like I was too tired to do things.	_____	_____	_____	_____
8. I felt like something good was going to happen.	_____	_____	_____	_____
9. I felt like things I did before didn't work out right.	_____	_____	_____	_____
10. I felt scared.	_____	_____	_____	_____
<b>DURING THE PAST WEEK</b>	<b>Not At All</b>	<b>A Little</b>	<b>Some</b>	<b>A Lot</b>
11. I didn't sleep as well as I usually sleep.	_____	_____	_____	_____
12. I was happy.	_____	_____	_____	_____
13. I was more quiet than usual.	_____	_____	_____	_____
14. I felt lonely, like I didn't have any friends.	_____	_____	_____	_____
15. I felt like kids I know were not friendly or that they didn't want to be with me.	_____	_____	_____	_____
<b>DURING THE PAST WEEK</b>	<b>Not At All</b>	<b>A Little</b>	<b>Some</b>	<b>A Lot</b>
16. I had a good time.	_____	_____	_____	_____
17. I felt like crying.	_____	_____	_____	_____
18. I felt sad.	_____	_____	_____	_____
19. I felt people didn't like me.	_____	_____	_____	_____
20. It was hard to get started doing things	_____	_____	_____	_____

## APPENDIX M

### **Permission to Reprint Table from The Diagnostic and Statistical Manual of Mental Disorders, Forth Edition, Revised Text**

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## APPENDIX N

### DSM-IV-TR Diagnostic Criteria for Depressive Disorders

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#### Major Depressive Disorder

Five (or more) of the following symptoms during the same 2-week period; at least one of the symptoms is either (1) depressed mood or (2) loss of interest or pleasure.

- 1) depressed mood most of the day, nearly every day, as indicated by either subjective report or observation made by others. Note: In children and adolescents, can be irritable mood.
- 2) markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated by either subjective account or observation made by others)
- 3) significant weight loss when not dieting or weight gain (e.g. a change in more than 5% of body weight in a month), or decrease or increase in appetite nearly every day. Note: In children, consider failure to make expected weight gains.
- 4) insomnia or hypersomnia nearly every day
- 5) psychomotor agitation or retardation nearly every day (observable by others)
- 6) fatigue or loss of energy nearly every day
- 7) feelings of worthlessness or excessive or inappropriate guilt nearly every day
- 8) diminished ability to think or concentrate, or indecisiveness, nearly every day (either by subjective account or as observed by others)
- 9) recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide

Major Depressive Episode (unipolar) can be further specified as mild, moderate, severe (based on functional impairment and severity of symptoms), with or without psychotic features, with or without melancholic features, whether or not recurrent, or chronic.

#### Dysthymic Disorder

A. Depressed mood for most of the day, for more days than not, as indicated either by subjective account or observation by others for at least 2 years. Note: In children and adolescents, mood can be irritable and duration must be at least 1 year.

B. Presence, while depressed, of two (or more) of the following:

- 1) poor appetite or overeating
- 2) insomnia or hypersomnia
- 3) low energy or fatigue
- 4) low self-esteem
- 5) poor communication or difficulty making decisions
- 6) feelings of hopelessness

C. During the 2-year period (1 year for children or adolescents) of the disturbance, the person has never been without symptoms in Criteria A and B for more than 2 months at a time.

D. No major Depressive Episode during the first 2 years of the disturbance (1 year for children and adolescents); i.e., the disturbance is not better accounted for by chronic Major Depressive Disorder, or Major Depressive Disorder, in Partial Remission).

---

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## APPENDIX O

### **Permission to Reprint Table from “Patterns of Attachment Behavior Shown by the Infant in Interaction with His Mother” by Mary Ainsworth, 1964.**

Dear Marie,

Thank you for your request. I am happy to grant you permission to reprint the table from MPQ free of charge. This permission, however, is contingent on the fact that the work the reprinted table will be appearing in is of a non-commercial, educational nature. Should you choose to publish your dissertation at a later date, please resubmit your request.

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If you have any questions or concerns, please do not hesitate to contact me.

All the best,  
Kristina

**APPENDIX P**

**State Trait Anger Expression Inventory – 2**

**Child and Adolescent**

**Scale Unavailable Due To Copyrights**

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