

THE ASSOCIATIONS BETWEEN YOUNG ADULTHOOD ATTACHMENT TO FATHERS  
AND MENTAL HEALTH

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### The Associations between Young Adulthood Attachment to Fathers and Mental Health

Keyes (2002) defines mental health “as a syndrome of symptoms of an individual’s subjective well-being” (p. 208). Mental health is composed up of three components of well-being: emotional, social, and psychological. Emotional well-being refers to a cluster of symptoms reflecting the presence or absence of positive feelings about life (Keyes, 2002). Symptoms of emotional well-being include the presence of positive affect, the absence of negative affect (e.g., the individual is not hopeless), and perceived satisfaction with life. For example, the absence of depressive and anxiety symptoms might indicate good emotional well-being. Social well-being consists of social coherence, social actualization, social integration, social acceptance, and social contribution (Keyes, 2002). When individuals have good social well-being, they see society as meaningful and understandable and as possessing potential growth, they feel they belong to and are accepted by their communities, they accept most parts of society, and they see themselves contributing to society. Furthermore, individuals who have the ability to build and maintain intimate and trusting interpersonal relationships are likely to have good social well-being (Keyes, 2002). When individuals have higher levels of interpersonal communication, they might have better relationships with others and overall better social well-being. Psychological well-being represents more private and personal criteria for evaluation of one’s own functioning. The dimension of psychological well-being consists of intrapersonal reflections of an individual’s adjustment to and outlook on their life (Keyes, 2002). Risk-taking behaviors are the intentional or unintentional exposure to the possibility of injury or loss. Risk-taking behaviors can be problematic, such as acting out in school (e.g., skipping classes) or engaging in aggressive behaviors. Because risk-taking behaviors can have an association with an individual’s emotional well-being, social well-being, and psychological well-being, they do not

fit in just one component of mental health, as depressive and anxiety symptoms are examples of factors that play a role in an individual's emotional well-being.

Although past research has demonstrated a relationship between the attachment types an individual develops with his or her mother at an early age—i.e., the secure bond an individual has with another individual—and mental health in late adulthood (Brennan & Shaver, 1998; Meyer & Pilkonis, 2001; Mikulincer & Shaver, 2012), little research has examined the role of *father-child* relationships in adulthood mental health outcomes. This research is important because there is evidence that mothers and fathers interact with their children differently, such as in play, parenting, and communication (Stanton, 2004). In addition, there has been little research to thoroughly examine the role of temperament—i.e., an individual's natural predisposition—when examining associations between attachment patterns and mental health. Given that temperament plays a role in attachment patterns (Rothbart & Ahadi, 1994) and it is an important contributor to mental health outcomes (Eisenberg et al., 2009), it is important to consider temperament conjointly with attachment. Therefore, the purpose of the current study is to investigate how current adulthood father-child attachment relationships are related to adulthood depressive and anxiety symptoms, interpersonal communication, and risk-taking behaviors.

### **Origins of Attachment Theory and Attachment Patterns**

Attachment theory describes the process in which the nature of children's emotional bonds to their primary caregivers, typically a mother or a father, impacts later adjustment and behavior throughout the lifespan (Fraley, 2002). Attachment theory emphasizes the importance of early experiences with caregivers during childhood – specifically, sensitivity and responsiveness. These experiences ultimately shape the expectations and beliefs a child constructs concerning the responsiveness and trustworthiness of significant others in adulthood

(Fraley, 2002). Attachment is measured differently depending on the developmental period of the child. In infancy, attachment patterns are typically measured using Ainsworth's Strange Situation, which involves a child being placed in a room to be observed playing for 20 minutes while caregivers and strangers enter and leave the room, recreating the flow of the familiar and unfamiliar presence in most children's lives (Shorey & Snyder, 2006). The Strange Situation categorizes individuals into one of four distinct attachment styles: secure, anxious-avoidant insecure, anxious-resistant insecure, and disorganized. As infants and children, individuals are placed into categories, depending on the levels of anxiety and avoidance they demonstrate when their caregivers enter and leave the room during the Strange Situation. In order to measure adult attachment patterns, individuals are not placed into categories but rather attachment is measured with dimensions. Self-report questionnaires are often used that characterize attachment in terms of the level of anxiousness (worry about the availability and responsiveness of attachment figure) and avoidance levels (avoid opening up to attachment figure and/or depending on him/her; Fraley et al., 2006) reported by individuals. For example, an adult may be high in avoidance and high in anxiety, which would be comparable to an insecurely attached child.

Although measurement methods differ depending on age, both methods assess parent-child relationship anxiety and avoidance. Children with caregivers who are characterized by sensitivity and consistency in responsiveness to their needs often develop a secure attachment. Securely attached individuals feel a sense of worthiness and also have the expectation that other people are generally accepting and responsive (Horowitz, Rosenberg, & Bartholomew, 1993). Over time, secure individuals develop close relationships easily, feel comfortable depending on others and having others depend on them, feel less anxious about being abandoned by others, and do not fear intimacy in relationships (less avoidance). In other words, securely attached adults

tend to have low levels of *anxiety* about the availability and responsiveness of the attachment figure and are less likely to *avoid* opening up to the attachment figure depending on him/her. In contrast, children with caregivers who are inconsistent and insensitive may be at risk for fostering an insecure attachment in childhood (Lieberman, Doyle, & Markiewicz, 1999), which is characterized by high levels of anxiety and avoidance. Adults who are insecurely attached tend to have high levels of avoidance and anxiety towards others in relationships.

### **Attachment Patterns and Mental Health Development**

A large body of research has suggested that secure attachment relationships (characterized by less avoidance and anxiety towards others, specifically caregivers) in infancy, childhood, and adolescence are key to healthy development (Horowitz, Rosenberg, & Bartholomew, 1993; Mikulincer & Shaver, 2012; Shorey & Snyder, 2006; Thornton, Orbuch, & Axin, 1995). For example, attachment may have implications for the development of emotion regulation skills, which could have positive implications for emotional well-being (Sroufe, 2005). Interactions with available attachment figures and the resulting sense of attachment security provide actual and symbolic supports for learning constructive emotion-regulation strategies, such as those that are often disrupted in depressive symptoms. Social learning theory suggests that new patterns of behavior can be acquired through direct experience or by observing the behavior of others (Bandura, 1977). For example, when children see their caregivers get upset then calm themselves down, it is possible that the children then learn how to eventually regulate their own emotions based on their observations of their caregivers. Or, if children are upset, and then see his or her parents come to them to help them, it is possible that they eventually learn how to regulate their own emotions, meaning they will calm themselves. Individuals with secure attachment styles with their parents may be more likely to benefit from

learning emotion regulation skills from them, and thus have better emotional well-being. In fact, research has found that attachment is associated with emotional well-being. Cooper, Shaver, and Collins (1998) found that anxiously and resistant insecurely attached adolescents manifested higher levels of hostility and depression than securely attached infants and adolescents. In adulthood, avoidant insecurely individuals often prefer to cordon off emotions from their thoughts and actions (Mikulincer & Shaver, 2012). In conclusion, secure attachment patterns tend to be associated with an increased likelihood that the individual will develop a solid foundation for emotional regulation (Sroufe, 2005).

Another dimension of mental health is social well-being. Individuals who develop a secure attachment style during their childhood are less likely to avoid intimate contact with other people and refuse to relinquish control to others in adulthood (Horowitz, Rosenberg, & Bartholomew, 1993). In late adolescence, individuals who have low avoidance and anxiety to others are likely to be involved in relatively serious and supportive relationships and less likely to participate in risky situations, such as increased sexual encounters and a dependency on drugs (Tracy, Shaver, Albino, & Cooper, 2003). They trust others more compared to individuals who have had disappointing experiences with other people during childhood that later can be seen as insecure attachment patterns in adulthood. Anxiously insecure attachments form at an early age from insecurities, which may be related to later making excessive demands of others, as well as being anxious and clingy when their demands are not met (Blatt & Levy, 2003). These attachment patterns involve children's intense preoccupations with consistent contact with caregivers who meet their needs and are accompanied by anxiety in response to separation and loss (Blatt & Levy, 2003). Individuals, who are insecurely attached as children, tend to have

negative expectations regarding relationships with others and a greater chance of becoming closely involved with others, based on experiences during infancy as adults (Sroufe, 2005).

Attachment may also have implications for risk-taking behaviors. Adolescents with insecure attachment styles are more likely to engage in risky sexual activities at a young age without enjoyment in fear of rejection or abandonment (Tracy, Shaver, Albino, & Cooper, 2003). For example, as adolescents, they are motivated to engage in sexual activity based on the desire to lose virginity rather than to get closely and emotionally involved with another individual, have a relatively low perceived sex drive, less confident of their sexual competence, and are less sexually active than securely attached or anxious-resistant peers (Tracy, Shaver, Albino, & Cooper, 2003). Young adults who have an insecure attachment are more likely to have an increased intake of drugs prior to sexual contact, which is considered to be a risky behavior (Feeney, Peterson, Gallois, & Terry, 2007). Individuals who have an insecure attachment style as young adults are also have a greater likelihood of having higher risk-taking behavior scores in risk-taking behaviors related to social position, traffic, and substance use (Morsünbül, 2009). Furthermore, those who have a fearful insecure attachment to others have both a negative self and others model; they tend to demonstrate higher risk-taking behavior than preoccupied insecure attachment individuals.

Although the majority of evidence provided is during early ages, it is relevant to the current study based on the idea that attachment is conceptualized as a lifespan construct that is relatively stable across time from infancy to adolescence to adulthood (Bowlby, 1977; Lieberman, Doyle, & Markiewicz, 1999; Hamilton, 2000; Waters, Weinfield, & Hamilton, 2000; Shorey & Snyder, 2006). The present study will add to literature examining attachment patterns

and mental health by specifically looking at current young adulthood parent-child attachment patterns.

### **Paternal-Child Relationship and Mental Health Development**

The associations between infancy, childhood, or adolescent attachment and later adulthood negative life outcomes have primarily focused on the mother-child relationship, whereas father-child relationships have been neglected in previous research. This is an important avenue for research to pursue, however, because societal-level changes have led to fathers playing a larger role in caregiving and children's development. Since 1989, there has been an increase in the number of stay-at-home dads in the United States (Parker & Livingston, 2016). In 2012, approximately 2 million dads reported staying at home to care for their children, whereas in 1989 there were approximately 1.1 million stay-at-home dads (Parker & Livingston, 2016). In addition, research has provided evidence that fathers play an important role in their children's lives. Children with fathers living at home who are actively involved in their lives are more likely to have better socioemotional and academic functioning (Howard, Lefever, Borkowski, & Whitman, 2006), have fewer behavioral problems, higher reading achievement scores, and have a decreased chance of engaging in multiple, first-time risky behaviors (Allen & Daly, 2007).

Although research has examined predictors of father-child attachment (Lieberman, Doyle, & Markiewicz, 1999; Howard, Lefever, Borkowski, & Whitman, 2006), less is known about the role of father-child attachment and mental health. When children feel less anxiousness and avoidance towards their fathers during childhood, there is a decreased chance of behavioral problems (Verschueren & Marcoen, 1999) later in the lifespan. Even though there has been evidence for how crucial fathers are to the development of a particular attachment style during



infancy and childhood, there is a need for more research on how these attachment patterns are related to levels of mental health in adulthood.

### **The Role of Temperament**

The majority of research studies examining the relation between parent-child attachment patterns and mental health have not thoroughly considered the role of adult temperament (Blatt & Levy, 2003; Horowitz, Rosenberg, & Bartholomew, 1993; Levy, Meehan, Weber, Reynoso, & Clarkin, 2005; Meyer & Pilkonis, 2001; Shorey & Snyder, 2006; Thornton, Orbuch, & Axin, 1995). Temperament and attachment patterns are separate constructs that are related to one another (Rothbart & Ahadi, 1994). Temperament involves constitutionally based individual differences in reactivity and self-regulation – which contain both biological and cognitive dimensions (Rothbart & Ahadi, 1994). Reactivity involves the responsiveness of emotional, activation, and arousal systems including changes in stimulation, as reflected by somatic, autonomic, and endocrine systems (Rothbart & Posner, 2006). Reactivity can also be used to describe broad behavioral dimensions, such as positive or negative emotional reactivity, and physiological reactions, such as heart rate reactivity or fear-induced startle (Rothbart & Hwang, 2005). Self-regulation, on the other hand, involves the ability to modulate such reactivity (Rothbart & Ahadi, 1994). Temperament systems (reactivity and regulation) are believed to be biologically based and influenced over time by genes, environment, and experience (Rothbart & Hwang, 2005). In contrast, attachment is the emotional interaction between a child and his or her caregiver, often thought to be the result of the social interactions between caregivers and children.

For the current study, the focus will specifically lie within examining negative affectivity and effortful control, two of the factors within Rothbart's model of temperament (Rothbart,

Ahadi, & Evans, 2000). The present study will focus on negative affectivity and effortful control because past research has found these components of temperament to be related to mental health (Clements & Bailey, 2010; Eisenberg et al., 2009; Oldehinkel, Hartman, Ferdinand, Verhulst, & Ormel, 2007; Rothbart, Ahadi, Hershey, & Fisher, 2001). Negative affect refers to the degree in which an individual is fearful, sad, frustrated, or bothered by physical discomforts (Clements & Baily, 2010). Prior literature has found that higher levels of negative affect tend to be associated with poorer mental health. Negative affectivity is thought to be a risk factor in developing externalizing behavior problems (Rothbart, Ahadi, Hershey, & Fisher, 2001). Individuals who have high negative affectivity tend to become easily frustrated, which can lead to a pattern of anger or aggression. High negative affect has also been shown to predict higher levels of anxiety (Clements & Bailey, 2010). Furthermore, fear has been found to be strongly related to internalizing difficulties, such as depression and anxiousness, and anger to externalizing difficulties, such as acting out and/or risk-taking behaviors (Rothbart, 2007). The factor of effortful control then consists of the ability to inhibit a dominant response to perform a subdominant response and/or to activate a subdominant response, to plan, and to detect errors (Eisenberg, 2012). In other words, effortful control refers to self-control, including the ability to perform undesired abilities and control impulses (Clements & Baily, 2010). Higher levels of effortful control tend to be associated with better overall mental health, such as lower levels of internalizing and externalizing symptoms and less impact of negative emotionality on symptoms (Oldehinkel, Hartman, Ferdinand, Verhulst, & Ormel, 2007) and lower levels of interpersonal conflict (Yap et al., 2011). Previous research has found lower levels of effortful control to be related to greater externalizing problems, such as acting out in school and at home, as reported by teachers and parents (Eisenberg et al., 2009).

In the current study, temperament is considered conjointly when examining associations between paternal-child attachment patterns and the mental health outcomes for three reasons. First, as previously noted, temperament is a predictor of mental health outcomes. Second, it allows for an examination of the contribution of attachment – a socially based construct – while considering the role of negative affectivity and effortful control – genetically- and cognitively-based constructs. Third, temperament is believed to be an underlying mechanism affecting how individuals form emotional bonds with their caregivers during childhood (Gonzalez-Mena, 2009). For example, a sensitive parent who has a child with high levels of negative affect and low levels of effortful control might turn the volume down on the child's temperament, affecting how anxious and/or avoidant the child is towards him or her. On the other hand, a non-sensitive parent might turn the volume up for a disinhibited child's temperament, having implications for more anxiety and avoidance to him or her, which in turn, may have an association with later lower levels of mental health. In sum, the interest of the researcher lies within the idea that attachment is a contributor to mental health, when considered conjointly with temperament.

### **Current Study**

The present study seeks to examine the association between young adults' current attachment patterns with their fathers and depressive symptoms, anxiety symptoms, interpersonal communication, and risk-taking behaviors during young adulthood. The present study will extend past research by: (1) Examining current adulthood *father*-child attachment patterns; (2) Considering temperament conjointly in order to understand the contribution of attachment in mental health; and (3) Focusing on adulthood attachment patterns. Based on previous findings about the influence of mother-child attachments during childhood, adolescence, and adulthood, it is predicted that reports of lower anxiety and avoidance dimensions of current paternal-child

adulthood attachment will be associated with lower levels of depressive and anxiety symptoms and risk-taking behaviors and higher levels of interpersonal communication.

## **Method**

### **Participants and Procedures**

Participants were either recruited via the SONA pool (Introduction to Psychological Science students) or the university Communications Center email system. To be eligible to participate, participants needed to report having a primary male caregiver and be an undergraduate student. Data were collected via Qualtrics. After consent procedures, participants were first asked to identify their “primary male caregiver.” Caregiver was defined as a primary figure who is responsive to the individual’s needs and who engages in social interactions (adapted from Schaffer & Emerson, 1964). Participants were asked to whom they were referring to as their “primary male caregiver,” (i.e., they filled in a box stating if the male is a biological father, stepfather, an uncle, a friend, etcetera). Participants were then asked questions regarding their attachment to their father, followed by questions about their current mental health (consisting of depressive and anxiety symptoms as well as their ability to interpersonally communicate and risk-taking behaviors), current temperament, and then basic demographic questions (e.g., gender, race/ethnicity, class standing, and age). The participants were directed to the Ball State University Counseling Center if answering any questions on the survey caused discomfort. Each research session took approximately one-half hour to complete. At the end, students in the Introduction to Psychological Science 100 courses were given ½ research credit upon completion of the survey after providing their names and email addresses. The names and email addresses of the participants were kept in a separate survey following completion of the self-report questionnaires to ensure data were anonymous.

The original dataset included 357 participants. Thirty-four participants were manually deleted because they did not fill out any of the survey. If participants completed at least 80% of the items for a scale, the survey score was calculated. If not, the scale score was set to missing. A total of 73 participants were dropped from the original dataset because they had missing data in one of the main study variables, e.g., attachment avoidance to fathers, attachment anxiety to fathers, depression, anxiety, interpersonal communication, risk-taking behaviors, negative affect, and effortful control. Because analyses were run separately by gender, five participants were excluded because they reported gender as “other.” Therefore, the final sample included 245 undergraduate students from a Midwestern university, aged 18 to 25 years, who reported having a primary male caregiver in their lives (see Table 1 for demographics). Over 75% of the participants ( $N = 219$ , 89.4%) identified as having a biological father as their primary male caregiver.

**Adulthood attachment patterns.** The Experiences in Close Relationships-Relationship Structures (ECR-RS) questionnaire (Fraley et al., 2006) is a 9-item measure designed to assess attachment orientation in a variety of current intimate relationships: relationships with mother, father, romantic partner, and best friend. This measure is designed to assess anxiety and avoidance—the two underlying dimensions to attachment patterns—in these relationships. The anxiety dimension (3 items) represents the extent to which people tend to worry about attachment-related concerns, such as the availability and responsiveness of an attachment figure (e.g., “I often worry that this person doesn’t really care for me.”). The avoidance dimension (6 items) represents the extent to which people are uncomfortable opening up to the individual and depending on him/her (e.g., “I usually discuss my problems and concerns with this person.”). Four items were reverse-coded so that higher scores on the avoidance dimension indicated more

insecurity in attachment patterns. Participants rated each item on a 7-point scale (1 = *strongly disagree* and 7 = *strongly agree*). An attachment-related avoidance score and an attachment-related anxiety score were separately computed by averaging the items for each scale. Past research has found that the scores on the ECR-RS are psychometrically sound: The test-retest reliability of the individual scales is approximately .80 in the parental domain and there is evidence of construct validity in that the scales are meaningfully related to various relational outcomes such as relationship satisfaction, likelihood of experiencing a breakup, and the perception of emotional expressions, as well as to one another (Fraley et al., 2006). In addition, scores on the scale have shown evidence of convergent validity, meaning that the ECR-RS measures of romantic attachment are associated with basic aspects of relationship functioning (e.g., satisfaction, commitment, investment) (Fraley, Heffernan, Vicary, & Brumbaugh, 2011). Scores on the scale have also shown evidence of discriminant validity when examining correlations with the Big-Five Factor scale. Scores from the anxiety portion of the ECR-RS were not found to correlate with openness and scores from the avoidance portion of the ECR-RS were not found to correlate with neuroticism; Fraley et al., 2011). For the current study, the items were found to be internally consistent (Cronbach's alpha = .93).

**Depressive and anxiety symptoms.** Lovibond and Lovibond's (1995) Depression, Anxiety, and Stress Scale-21 (DASS-21) was used to assess depressive (e.g., "I couldn't seem to experience any positive feeling at all.") and anxiety (e.g., "I was worried about situations in which I might panic and make a fool of myself.") symptoms, with 7 items per category. For the current study, only the depression and anxiety scales were used. The depression scale assesses dysphoria, hopelessness, and devaluation of life, self-deprecation, lack of interest/involvement, anhedonia and inertia. The anxiety scale measures autonomic arousal, skeletal muscle effects,

situational anxiety, and subjective experience of anxious affect. Participants answered the items based on the severity of symptoms from the last week, using a 4-point scale where 0 = *Did not apply to me at all* to 3 = *Applied to me very much, or most of the time*. Scores for depression and anxiety were calculated by summing the scores for the relevant items.

In older adults, aged 60 or older, scores on the depressive and anxiety symptoms scales have been demonstrated to have excellent reliability and validity. Each scale measures the features it is intended to measure, compared across diagnostic groups that demonstrate depressive, anxiety, and stress-related symptoms (Antony, Bieling, Cox, Enns, & Swinson, 1998). In addition, scores on the depressive and anxiety symptoms scales have been demonstrated to have excellent convergent validity, when compared with other validated measures of depression and anxiety (Henry & Crawford, 2005). For the current study, the items were found to be internally consistent for depressive symptoms (Cronbach's alpha = .93) and anxiety symptoms (Cronbach's alpha = .86).

**Interpersonal communication.** The Interpersonal Communication Inventory (ICI) was used to measure general tendencies in interpersonal communication in a wide variety of situations (Bienvenu, 1969). Within the Interpersonal Communication Inventory, there is a 54-item scale that measures the process of communication as an element of social interaction. It is designed to not measure content, but to identify patterns, characteristics, and styles of communication. The ICI items are designed to measure the dimensions of self-disclosure ("Is it difficult for you to confide in people?"), awareness ("In conversation, do you try to put yourself in the other person's shoes?"), evaluation and acceptance of feedback ("Does it upset you a *great deal* when someone disagrees with you?"), self-expression ("Do your words come out the way you would like them to in conversation?"), attention ("Do you find yourself not paying attention

while in conversation with others?”), coping with feelings (“Do you deliberately try to conceal your faults from others?”), clarity (“When you are asked a question that is not clear, do you ask the person to explain what he means?”), avoidance (“Do you later apologize to someone whose feelings *you* may have hurt?”), dominance (“In conversation, do you have a tendency to do more talking than the other person?”), handling differences (“Are you satisfied with the way you settle your differences with others?”), and perceived acceptance (“Do you feel that other people wished you were a different kind of person?”) (Bienvenu & Stewart, 1976). The ICI is applicable generally to social interaction in a wide variety of situations. Participants answered items based on persons other than their family members or relatives, to better understand how they present and use themselves in communicating with others in daily contacts and activities. Participants used a scale in which there is “Yes,” “No,” and “Sometimes.” Scores were calculated by using the ICI Scoring Key and Norms to alternative-code specific items then adding up the total score. The higher the scores, the better interpersonal communication participants reported. In undergraduate college students, scores in the Interpersonal Communication Inventory have been demonstrated to have excellent reliability (Armstrong, 1981). Past research has also found the scores on the ICI to have excellent convergent validity, meaning that the items discriminate between good and poor communicators (Bienvenu, 1971). For the current study, the items were found to be internally consistent (Cronbach’s  $\alpha = .85$ ).

**Risk-taking behaviors.** The Risk-Taking Questionnaire-18 (RT-18; Haan et al., 2011) assesses risk-taking among young adults with known different levels of risk-taking behavior (social drinkers and recreational drug users). This measure integrates sensation seeking, venturesomeness, and impulsivity but views them as different expressions of risk-taking behaviors. Specifically, it is a questionnaire that differentiates level of risk-taking behavior from



level of risk assessment. Although risk-taking behaviors can occur in multiple dimensions (e.g., socially, physically, psychologically), this specific measure includes general items that do not relate to specific dimensions (e.g., “I often do things on impulse.”). Participants rated each of the eighteen items with a “yes” or “no,” which then received either zero points or one point that then was added up to a total score ranging from 0 (no risk-taking) to 18 (extreme risk-taking). In college students, scores in the risk-taking behavior questionnaire have been demonstrated to have excellent reliability and convergent validity (e.g., level of risk-taking behavior scores were correlated with stimulating risk-taking and instrumental risk-taking behaviors from the Stimulating-Instrumental Risk Inventory (SIRI)) (Haan et al., 2011). For the current study, the items were found to be internally consistent (Cronbach’s alpha = .72).

**Temperament.** The Adult Temperament Questionnaire (ATQ) Short Form (Evans & Rothbart, 2007) was used to assess temperament dimensions. This measure includes 4 general constructs and associated scales adapted from the original ATQ, which are effortful control, negative affect, extraversion/surgency, and orienting sensitivity. For the current study, only the negative affect and effortful control constructs were used. Negative affect is defined as a general factor of subjective distress, and subsumes a broad range of negative mood states, including fear, anxiety, hostility, scorn, and disgust (Watson, Clark, & Carey, 1988). Effortful control is defined as the ability to inhibit a dominant response to perform a subdominant response and/or to activate a subdominant response, to plan, and to detect errors (Eisenberg, 2012).

The short form, which was used for the purpose of considering temperament conjointly in the current study, consists of 77 items. Each dimension consists of 6 to 8 items each. The measure uses a 5-point Likert-scale where 1 = *Extremely untrue of you* to 7 = *Extremely true of you*. Participants could also indicate whether an item was applicable to them or not. Fifteen items

were reversed coded so higher scores indicated higher levels of emotionality and reactivity. For each temperament dimension, items were averaged together. In college students, scores on the temperament dimension scales have been demonstrated to have excellent reliability and validity. For example, Rothbart, Evans, and Ahadi (2000) found there is a definite relationship between the temperament dimensions and measures of adult personality. Temperament factors and the Big Five scales were correlated, which demonstrated extraversion being related across the two domains, effortful attention being related to conscientiousness, and negative affectivity related to neuroticism. In addition, scores on the temperament dimensions have demonstrated excellent convergent validity, in which a five factor temperament model was extracted to show considerable convergence with the Big Five Mini-Marker scales (Evans & Rothbart, 2007). Scores on the temperament dimensions have also demonstrated divergent validity, in which negative valence from the Multi-Language Seven (ML7) was not related to temperament factors of the ATQ (Evans & Rothbart, 2007). For the current study, the items were found to be internally consistent for negative affect (Cronbach's alpha = .84) and effortful control (Cronbach's alpha = .79).

### **Analyses**

Prior to analyses, independent samples t-test were conducted to examine gender differences and differences by type of father (biological v. non-biological). For the preliminary analyses, Cohen's d (the effect size) was calculated by dividing the mean difference between men and women by the pooled standard deviation.

To answer the research questions, separate regression models were conducted for each mental health outcome. The variables entered into the regression models were attachment avoidance and attachment anxiety to fathers, negative affect, and effortful control. We ran the

models separately by gender, based on research indicating that females and males may differ in their reports of avoidance and anxiety in their relationships with their fathers (Gross & John, 2003), levels of negative affect and effortful control (Gross & John, 2003), and mental health (Joiner & Blalock, 1995). We used the Bonferroni correction to reduce the likelihood of Type I error because there were a total of 8 analyses conducted. Therefore, the  $p$ -value of .05 was divided by 8. Results were considered statistically significant if  $p < .006$ .

## Results

### Preliminary Analyses

Independent sample  $t$ -tests comparing individuals reporting about biological fathers to individuals reporting about non-biological fathers indicated that, for men only, those reporting about biological fathers reported less negative affect,  $t(63) = -2.77, p < .05, d = .55$ . Independent sample  $t$ -tests comparing individuals reporting biological fathers to individuals reporting about non-biological fathers indicated that, for both men and women, those reporting about biological fathers did not significantly differ from those reporting about non-biological fathers, for any of the other study variables, such as depressive and anxiety symptoms, interpersonal communication skills, risk-taking behaviors, and effortful control. Compared to men, women reported significantly higher levels of depressive,  $t(242) = -2.91, p < .05, d = .42$ , and anxiety symptoms,  $t(242) = -3.72, p < .001, d = .58$  (Table 2). Males and females, however, did not significantly differ in interpersonal communication and risk-taking behaviors. Men and women also did not significantly differ in terms of negative affect, effortful control, or the amount of father attachment avoidance and anxiety.

Correlations among study variables can be seen in Table 3. Higher levels of paternal-child attachment avoidance were associated with higher levels of paternal-child attachment

anxiety. As evidenced in Table 3, many of the mental health outcomes were significantly correlated. For example, depressive symptoms were positively associated with anxiety and negatively associated with interpersonal communication. Risk-taking behaviors, however, were not significantly associated with the other mental health variables.

### **Attachment to Fathers, Temperament, and Mental Health Outcomes**

Results of all regression models can be seen in Table 4 (for men) and Table 5 (for women). Because results differed by gender, analyses were only conducted separately by gender (and not for the total sample).

**Depression.** For men, higher avoidance dimensions of paternal-child adulthood attachment did significantly predict depressive symptom scores,  $\beta = .33, p < .006$ , but anxiety dimensions did not significantly predict depressive symptom scores. For women, avoidance and anxiety dimensions of paternal-child adulthood attachment did not significantly predict depressive symptom scores.

For men, higher levels of negative affect did significantly predict depressive symptoms,  $\beta = .23, p < .006$ , but effortful control did not significantly predict depressive symptoms. For women, higher levels of negative affect,  $\beta = .44, p < .006$ , and lower levels of effortful control,  $\beta = -.28, p < .006$ , significantly predicted higher levels of depressive symptoms. For both men and women, attachment to fathers and temperament explained a significant proportion of variance in depressive symptom scores, Men:  $R^2 = .28, F(4, 63) = 6.06, p < .001$ , Women:  $R^2 = .45, F(4, 172) = 35.64, p < .001$ .

**Anxiety.** For men, avoidance dimensions of paternal-child adulthood attachment did not significantly predict anxiety scores, but higher attachment anxiety dimensions significantly predicted higher anxiety scores,  $\beta = .42, p < .006$ . For women, avoidance dimensions of paternal-

child adulthood attachment did not significantly predict anxiety scores, but higher attachment anxiety dimensions significantly predicted higher anxiety scores,  $\beta = .16, p < .006$ .

For men, higher levels of negative affect did significantly predict anxiety scores,  $\beta = .27, p < .006$ , but effortful control did not significantly predict anxiety scores. For women, higher levels of negative affect and lower levels of effortful control significantly predicted higher levels of anxiety,  $\beta = .51, p < .006$ , and  $\beta = -.22, p < .006$ . For both men and women, attachment to fathers and temperament explained a significant proportion of variance in anxiety scores, Men:  $R^2 = .37, F(4, 63) = 9.10, p < .001$ , Women:  $R^2 = .47, F(4, 172) = 38.82, p < .001$ .

**Interpersonal Communication.** For men, avoidance dimensions of paternal-child adulthood attachment did not significantly predict interpersonal communication scores, but lower levels of anxiety dimensions of paternal-child adulthood attachment significantly predicted higher interpersonal communication scores,  $\beta = -.26, p < .006$ . For women, lower avoidance dimensions of paternal-child adulthood attachment significantly predicted higher interpersonal communication scores,  $\beta = -.23, p < .006$ , but attachment anxiety dimensions did not significantly predict interpersonal communication scores.

For men, negative affect did not significantly predict interpersonal communication scores, but higher levels of effortful control significantly predicted higher interpersonal communication scores,  $\beta = .32, p < .006$ . For women, lower levels of negative affect,  $\beta = -.24, p < .006$ , and higher levels of effortful control,  $\beta = .38, p < .006$ , significantly predicted higher interpersonal communication scores. For men and women, anxiety and avoidance to fathers and temperament explained a significant proportion of variation in interpersonal communication scores, Men:  $R^2 = .42, F(4, 63) = 11.54, p < .001$ ; Women:  $R^2 = .41, F(4, 172) = 30.16, p < .001$ .

**Risk-Taking Behaviors.** For both men and women, avoidance and anxiety dimensions of

paternal-child adulthood attachment did not significantly predict risk-taking behavior scores.

For men, effortful control did not significantly predict risk-taking behavior scores, but higher levels of negative affect significantly predicted higher risk-taking behavior scores,  $\beta = .28, p < .006$ . For women, higher levels of negative affect,  $\beta = .31, p < .006$ , and effortful control,  $\beta = .29, p < .006$ , significantly predicted higher risk-taking behavior scores. For women, attachment to fathers and temperament explained a significant proportion of variance in risk-taking behaviors,  $R^2 = .13, F(4, 172) = 6.18, p < .001$ . For men, attachment to fathers and temperament did not explain a significant proportion of risk-taking behaviors.

### **Discussion**

Therapists, educators, and researchers have called for a better understanding of the importance of fathers for their children's mental health outcomes—specifically, whether father-child attachment in young adulthood is associated with the mental health of their young adult children. The present study, which was grounded in attachment theory (Fraley, 2002), found evidence that attachment avoidance and anxiety to fathers in young adulthood may play a role in the mental health of individuals in young adulthood. The results, however, differed depending on the gender of participants.

#### **Attachment and Mental Health**

Preliminary analyses found that men reported significantly lower anxiety and depressive symptoms, compared to women. The effect size for the reports of depressive ( $d = .42$ ) was considered to be medium according to Cohen (1992) and the effect size for the reports of anxiety ( $d = .58$ ) symptoms in men and women was considered to be medium to large for the current study (Cohen, 1992). However, it is commonly demonstrated that women tend to report more depressive and anxiety symptoms when compared to men, and our effect sizes are similar to

effect sizes found in past research (Hankin, 2009). Therefore, we do not think the results necessarily impacted whether the current study sample was representative for men.

Most research on attachment avoidance and anxiety and mental health outcomes has examined associations between the mother-child attachment and the children's mental health. This study sheds light on the link between *current* adulthood *father*-child attachment patterns and the mental health symptoms young adults report, while considering the role of temperament. The results indicated that for men, attachment avoidance predicted depressive symptoms, but attachment anxiety did not. For women, neither attachment avoidance nor attachment anxiety to fathers predicted depressive symptoms. For men and women, attachment avoidance to fathers did not predict anxiety, however, attachment anxiety did predict levels of anxiety. The current study partially supported past research findings that mother-child secure attachment predicted better emotional well-being of children (Mikulincer & Shaver, 2012), and research indicating that children who have a greater involvement with their fathers are more likely to have better socioemotional functioning (Howard et al., 2006). However, not all components of attachment were associated with depressive and anxiety symptoms. The previous study examined adolescents, aged 8 to 10 years, with primarily mothers. Therefore, the present study provided support for the idea that fathers matter for young adults' depression and anxiety, but more research is needed to determine whether age of the child or gender of the parent may reduce the association.

The results indicated that for men, attachment anxiety predicted interpersonal communication, but attachment avoidance did not. By contrast, in females, attachment avoidance predicted interpersonal communication but attachment anxiety did not. Lieberman, Doyle, and Markiewicz (1999) found that children's reports of positive friendship qualities and lack of

conflict in their best friendships were both related to attachment to mothers and fathers, supporting the association between lower anxiety to fathers and higher interpersonal communication scores within the present study. Furthermore, the results of the present study were supported by Horowitz, Rosenberg, and Bartholomew (1993), in which they found that individuals who develop less anxiety and avoidance towards their caregivers during their childhood were less likely to avoid intimate contact with others in adulthood. Individuals who have a secure attachment to their fathers (e.g., low avoidance and anxiety attachment to fathers) may be less likely to withdraw from others as adults because they may have learned to socially interact with others at a young age by interacting with their parents and using them as role models for interpersonal skills. Ultimately, this may allow for better interpersonal communication as adults. As demonstrated, the current findings for the association between attachment avoidance and anxiety and levels of interpersonal communication are the opposite for men and women (e.g., one is significant for men and the other is significant for women). This gender difference could be because women and men communicate with each other differently. The way in which men and women communicate could potentially play a role in how they approach new individuals, meaning they either feel comfortable approaching new individuals (e.g., low in anxiety and avoidance to others) or they could feel anxious and avoidant towards others, which would affect their levels of interpersonal communication. Past research has not considered the gender of children when examining the association between attachment patterns and interpersonal communication. Therefore, the current study provides evidence that the gender of the child matters when considering attachment patterns and the outcome of interpersonal communication.

For men and women, neither attachment avoidance or attachment anxiety predicted risk-



taking behaviors. As previously noted, there is little research against which to directly compare these results, given the scarcity of father-child attachment in young adulthood studies. Previous studies found that secure attachment, which is composed of little to no avoidance and anxiety, between children and their fathers, was associated with fewer behavioral problems later in the lifespan and a decreased chance of engaging in multiple, first-time risky behaviors (Verschueren & Marcoen, 1999; Allen & Daly, 2007; Howard, Lefever, Borkowski, & Whitman, 2006). Prior research has demonstrated risk-taking behaviors as issues in school, not necessarily the same behaviors measured in the current study. The current study used a measure in which participants were asked their likelihood in engaging in risk-taking behaviors, however, the risk-taking behaviors may not have been found to be associated with attachment, based on the idea that not all risk-taking behaviors are problematic. For example, while cutting classes or engaging in aggressive behaviors with others may be problematic, bungee jumping may not be problematic in that it does not have negative consequences for individuals. Future research should consider using a measure of risk-taking behaviors that focuses on problematic risk-taking behaviors and impulsivity, such as skipping classes, problems with professors, or aggressive behavioral issues with parents in a college-aged population.

Furthermore, Feeney, Peterson, Gallois, and Terry (2007) found that an increased use of alcohol and drugs reported by insecurely attached individuals was consistent with prior literature in that individuals who report higher levels of avoidance and anxiety to mothers and fathers drink more in order to cope with worries and with negative moods. By contrast, the current study did not find an association between attachment avoidance and anxiety to fathers and risk-taking behaviors. This might be attributed to previous studies examining the association between attachment and risk-taking behaviors and having been focused on early childhood through

adolescence, in which children may not have the ability to regulate their own behaviors, e.g., less freedom in choice of activities. Young adults in college tend to have more freedom, as they can choose what they want to do, without parents overlooking their behaviors. Therefore, it is possible that the role of parents in risk-taking behaviors may weaken, as individuals grow older.

### **Temperament and Mental Health**

The temperament dimensions of negative affect and effortful control were added to the regression models in order to examine the associations between father-child attachment avoidance and anxiety and mental health outcomes while jointly considering temperament. Overall, the associations between negative affect and effortful control found in the current study are consistent with previous findings that negative affect is associated with poorer mental health (Rothbart, Ahadi, Hershey, & Fisher, 2001; Clements & Bailey, 2010) and effortful control is associated with better mental health (Oldehinkel, Hartman, Ferdinand, Verhulst, & Ormel, 2007). For women in the current study, the results indicated that negative affect was associated with poorer mental health outcomes, e.g., depression, anxiety, decreased interpersonal communication levels, and risk-taking behaviors. For men, negative affect was only associated with three of the four mental health outcomes examined in the current study, e.g., depression, anxiety, and risk-taking behaviors. The gender difference in reports of negative affect in association with the mental health outcomes in the current study though could be due to the sample size, e.g., more females than males, which could have led the analyses to have more power that detected small effects for women.

There was one interesting finding in the current study in which higher levels of effortful control were associated with higher levels of risk-taking behaviors, for women only. This is in contrast to prior findings, where higher levels of effortful control were associated with fewer

risk-taking behaviors (Eisenberg et al., 2009). Contemporary researchers have proposed that risk-taking behaviors are the product of impulsivity (Boyer, 2006). This particular approach emphasizes the relationship between impulsivity and emotional regulation, proposing that impulsivity might be construed as an inability to inhibit dominant responses while attempting to enact secondary responses. Individuals who lack regulation skills hastily engage in more risky behaviors, especially in frustrating or anger provoking situations (Boyer, 2006). Increased impulsivity is related to increases in a variety of prototypical risk-taking behaviors, such as alcohol use, cigarette smoking, gambling, and unsafe sex (Donohew et al., 2000). One potential explanation for the interesting finding is that the measure used in the current study did not necessarily capture impulsivity or problematic behaviors. For example, one item states “Would you enjoy parachute jumping?”. It is also possible that females may choose to take more risks than males, but could be more thoughtful about what risks to engage in, which would not indicate they are more impulsive or that they engage in more problematic risk-taking behaviors.

Compared to attachment, temperament was found to be a more consistent predictor of mental health outcomes in the current study, particularly for women. This is in contrast with prior research in which both attachment *and* temperament were equally related to mental health (Pierrehumbert, Miljkovitch, Plancherel, Halfon, & Ansermet, 2000). Specifically, temperament and attachment *both* were found to have an effect on behavioral problems, which suggested that the two dimensions (e.g., biological and cognitive and social) interact with one another. Though, Pierrehumbert et al. (2000) found that attachment refers to the environmental and social predictors of mental health, while temperament refers to individual characteristics of the child (e.g., biological and cognitive dimensions) as predictors of mental health. As demonstrated by the current study findings alongside previous literature, temperament and attachment both predict

mental health outcomes but should be considered separately in order to better understand the biological, cognitive, and social dimensions of an individual's mental health.

### **Strengths and Limitations**

This study contributed to the literature on attachment between fathers and their children during young adulthood in several ways. A primary strength was the use of temperament when considered conjointly with attachment in order to understand the contribution of attachment. Second, the present study moved beyond the past focus on the attachment patterns between young children and their mothers to include the attachment patterns between young adults and their fathers. Finally, the associations between attachment avoidance and attachment anxiety to fathers and mental health outcomes extended past the typical categories of depression and anxiety to also include interpersonal communication and risk-taking behaviors, to better understand how attachment can influence emotional well-being, social well-being, *and* psychological well-being.

In the face of these strengths, limitations of this study provide future directions for the field of attachment theory research. First, the methodology used involved an online survey, in which not all participants completed the entirety of the survey. This resulted in a reduced sample size, specifically in the size of the male sample. The male sample was small, which reduced statistical power to detect significant results. Second, the methodology treated adulthood attachment as a static construct. There was no knowledge if the attachment patterns had changed over time, or whether there were factors, such as a passing of a caregiver, that played a role in the mental health outcomes. In addition, undergraduate students may potentially be “finding themselves.” Longitudinal research would allow for a better understanding of how undergraduate students' attachments with their fathers change when they have the freedom to make their own

decisions away from home. Future studies should examine longitudinal trajectories of attachment from childhood to young adulthood, with consideration of various factors, such as temperament, traumatic events (e.g., death of a caregiver), and transitional stages (e.g., the transition to college) that may be associated with the mental health of young adults. Third, future research is needed with diverse samples that vary in race/ethnicity to determine the generalizability of the results. The sample in the present study was almost exclusively White, not of Hispanic descent. Fourth, when an independent samples t-test was ran to compare and contrast the associations between attachment avoidance and anxiety to biological and non-biological male caregivers with mental health outcomes and temperament dimensions, there were differences in the amount of depressive and anxiety symptoms as well as interpersonal communication skills and risk-taking behaviors reported. Future research should examine the role of biological fathers compared to the role of non-biological fathers plays in the amount of attachment avoidance and anxiety individuals report in association with mental health outcomes, such as those examined in the current study. Lastly, even though temperament was used conjointly with attachment to better understand the unique contribution of attachment, it was impossible to distinguish whether attachment had an influence on temperament or temperament had an influence on attachment avoidance and/or anxiety to fathers that individuals reported. It is, though, important to consider this bidirectional relationship to better understand the role of the interconnections between attachment and temperament on mental health outcomes.

### **Conclusions**

The results of this study suggest that young adulthood attachment to fathers contribute to the mental health outcomes of young college students, providing support for attachment theory. By using a short-term online survey containing information from college students on their

current attachments with their fathers and the symptoms of mental health, we found that attachment to fathers alongside negative affect and effortful control predicted levels of depression, anxiety, and interpersonal communication for both men and women. The findings suggest that efforts to decrease the mental health symptomology reported by college-aged students may require interventions prior to young adulthood in the involvement of fathers and increasing the relationships between fathers and their young adult children, and that the interventions should consider child gender.

### References

- Allen, S., & Daly, K. (2007). The effects of father involvement: An updated research summary of the evidence. Guelph, Ontario: Centre for Families, Work & Well-Being, University of Guelph. Retrieved from <http://www.fira.ca/cms/documents/29/Effec>.
- Antony, M. M., Bieling, P. J., Cox, B. J., Enns, M. W., & Swinson, R. P. (1998). Psychometric properties of the 42-item and 21-item versions of the Depression Anxiety Stress Scales in clinical groups and a community sample. *Psychological Assessment, 10*, 176-181. doi:10.1037/1040-3590.10.2.176.
- Armstrong, B. K. (1981). The interpersonal communication inventory : A measure of social skills (Master's Thesis). Retrieved from UNT Digital Library.
- Bandura, A. (1977). Social learning theory. Englewood Cliffs, NJ : Prentice-Hall.
- Bienvenu, M. J., Sr. (1969). Interpersonal communication inventory. In J. William Pfeiffer and John E. Jones (Eds.), *The 1974 Annual Handbook for Group Facilitators*. San Diego: University Associates.
- Bienvenu, M. J., Sr. (1971). An interpersonal communication inventory. *The Journal of Communication, 21*, 381-388. doi: 10.1111/j.1460-2466.1971.tb02937.x.
- Bienvenu, M. J., & Stewart, D. W. (1976). Dimensions of interpersonal communication. *The Journal of Psychology, 93*, 105-111. doi: 10.1080/00223980.1976.9921380.
- Blatt, S. J., & Levy, K. N. (2003). Attachment theory, psychoanalysis, personality development, and psychopathology. *Psychoanalytic Inquiry, 23*, 102-150. doi: 10.1080/07351692309349028.

- Bowlby, J. (1977). The making and breaking of affectional bonds: II. Some principles of psychotherapy (The Fiftieth Maudsley Lecture: expanded version). *British Journal of Psychiatry*, *130*, 421-431. doi: 10.1192/bjp.130.5.421.
- Boyer, T. W. (2006). The development of risk-taking: A multi-perspective review. *Developmental Review*, *26*, 291-345. doi: 10.1016/j.dr.2006.05.002.
- Brennan, K. A., & Shaver, P. R. (1998). Attachment styles and personality disorders: Their connections to each other and to parental divorce, parental death, and perceptions of parental caregiving. *Journal of Personality*, *66*, 835-878. doi: 10.1111/1467-6494.00034.
- Clements, A. D., & Bailey, B. A. (2010). The relationships between temperament and anxiety: Phase I in the development of a risk screening model to predict stress-related health problems. *Journal of Health Psychology*, *15*, 515-525. doi: 10.1177/1359105309355340.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, *112*, 155-159. doi: 10.1037//0033-2909.112.1.155.
- Cooper, L. M., Shaver, P. R., & Collins, N. L. (1998). Attachment styles, emotion regulation, and adjustment in adolescence. *Journal of Personality and Social Psychology*, *74*, 1380-1397. doi: 10.1037//0022-3514.74.5.1380.
- Donohew, L., Zimmerman, R., Cupp, P. S., Novak, S., Colon, S., & Abell, R. (2000). Sensation seeking, impulsive decision-making, and risky sex: Implications for risk-taking and design of interventions. *Personality and Individual Differences*, *28*, 1079-1091. doi: 10.1016/s0191-8869(99)00158-0.
- Eisenberg, N., Valiente, C., Spinrad, T. L., Cumberland, A., Liew, J., Reiser, M., Zhou, Q., Losoya, S. H. (2009). Longitudinal relations of children's effortful control, impulsivity,



- and negative emotionality to their externalizing, internalizing, and co-occurring behavior problems. *Developmental Psychology*, *45*, 988-1008. doi: 10.1037/a0016213.
- Eisenberg, N. (2012). Temperamental effortful control (self-regulation). *Encyclopedia on Early Childhood Development*.
- Evans, D. E., & Rothbart, M. K. (2007). Developing a model for adult temperament. *Journal of Research in Personality*, *41*, 868-888. doi: 10.1016/j.jrp.2006.11.002.
- Feeney, J. A., Peterson, C., Gallois, C., & Terry, D. J. (2007). Attachment style as a predictor of sexual attitudes and behavior in late adolescence. *Psychology & Health*, *6*, 1105-1122. doi: 10.1080/08870440008407370.
- Fraley, R. C. (2002). Attachment stability from infancy to adulthood: Meta-analysis and dynamic modeling of developmental mechanisms. *Personality and Social Psychology Review*, *6*, 123-151. doi: 10.1207/S15327957PSPR0602\_03.
- Fraley, R. C., Heffernan, M. E., Vicary, A. M., & Brumbaugh, C. C. (2011). The experiences in close relationships—relationship structures questionnaire: A method for assessing attachment orientations across relationships. *Psychological Assessment*, *23*, 615-625. doi: 10.1037/a0022898.
- Gonzalez-Mena, J. (2009). Temperament and attachment. In J. Gonzalez-Mena (Eds.), *Child, Family, and Community: Family-Centered Early Care* (pp. 34-35). Upper Saddle River, NJ: Pearson Education, Inc.
- Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, *85*, 348-362. doi: 10.1037/0022-3514.85.2.348.

- Hamilton, C. E. (2000). Continuity and discontinuity of attachment from infancy through adolescence. *Child Development, 71*, 690-694. doi: 10.1111/1467-8624.00177.
- Haan, L. D., Kuipers, E., Kuerten, Y., Laar, M. V., Olivier, B., & Verster, J. C. (2011). The RT-18: A new screening tool to assess young adult risk-taking behavior. *International Journal of General Medicine, 4*, 575-584. doi: 10.2147/IJGM.S23603.
- Henry, J. D., & Crawford, J. R. (2005). The short-form version of the Depression Anxiety Stress Scales (DASS-21): Construct validity and normative data in a large non-clinical sample. *British Journal of Clinical Psychology, 44*, 227-239. doi: 10.1348/014466505X29657.
- Horowitz, L. M., Rosenberg, S. E., & Bartholomew, K. (1993). Interpersonal problems, attachment styles, and outcome in brief dynamic psychotherapy. *Journal of Consulting and Clinical Psychology, 61*, 549-560. doi: 10.1037//0022-006X.61.4.549.
- Howard, K. S., Lefever, J. E., Borkowski, J. G., & Whitman, T. L. (2006). Fathers' influence in the lives of children with adolescent mothers. *Journal of Family Psychology, 20*, 468-476. doi: 10.1037/0893-3200.20.3.468.
- Joiner, T. E., Jr., & Blalock, J. A. (1995). Gender differences in depression: The role of anxiety and generalized negative affect. *Sex Roles, 33*, 91-108. doi: 10.1007/BF01547937.
- Keyes, C. L. M. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of Health and Social Research, 43*, 207-222. doi: 10.2307/3090197.
- Levy, K. N., Meehan, K. B., Weber, M., Reynoso, J., & Clarkin, J. F. (2005). Attachment and borderline personality disorder: Implications for psychotherapy. *Psychopathology, 38*, 64-74. doi: 10.1159/000084813.

Lieberman, M., Doyle, A.B., & Markiewicz, D. (1999). Developmental patterns in security of attachment to mother and father in late childhood and early adolescence: Associations with peer relations. *Child Development, 70*, 202-213. doi: 10.1111/1467-8624.00015.

Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the depression anxiety stress scales (DASS) with the Beck Depression and Anxiety Inventories. *Behavior Research and Therapy, 33*, 335-343. doi: 10.1016/0005-7967(94)00075-U.

Meyer, B., & Pilkonis, P. A. (2001). Attachment style. *Psychotherapy: Theory, Research Practice, Training, 38*, 466-472. doi: 10.1037/0033-3204.38.4.466.

Mikulincer, M., & Shaver, P. R. (2012). An attachment perspective on psychopathology. *World Psychiatry, 11*, 11-15. doi: 10.1016/j.wpsyc.2012.01.003.

Morsünbül, U. (2009). Attachment and risk taking: Are they interrelated? *International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering, 3*, 1366-1370.

Oldehinkel, A. J., Hartman, C. A., Ferdinand, R. F., Verhulst, F. C., & Ormel, J. (2007). Effortful control as modifier of the association between negative emotionality and adolescents' mental health problems. *Development and Psychopathology, 19*, 523-539. doi: 10.1017/S0954579407070253.

Parker, K., & Livingston, G. (2016, June 16). *6 facts about American fathers*. Retrieved from <http://www.pewresearch.org/fact-tank/2016/06/16/fathers-day-facts/>.

Pierrehumbert, B., Miljkovitch, R., Plancherel, B., Halfon, O., & Ansermet, F. (2000). Attachment and temperament in early childhood; Implications for later behavior

- problems. *Infant and Child Development*, 9, 17-32. doi: 10.1002/(sici)1522-7219(200003)9:1<17::aid-icd212>3.0.co;2-#.
- Rothbart, M. K., & Ahadi, S. A. (1994). Temperament and the development of personality. *Journal of Abnormal Psychology*, 103, 55-66. doi: 10.1037/0021-843x.103.1.55.
- Rothbart, M. K., Ahadi, S. A., & Evans, D. E. (2000). Temperament and personality: Origins and outcomes. *Journal of Personality and Social Psychology*, 78, 122-135. doi: 10.1037/0022-3514.78.1.122.
- Rothbart, M. K., Ahadi, S. A., Hershey, K. L., & Fisher, P. (2001). Investigations of temperament at three to seven years: The children's behavior questionnaire. *Child Development*, 72, 1394-1408. doi: 10.1111/1467-8624.00355.
- Rothbart, M. K., & Hwang, J. (2005). Temperament and the development of competence and motivation. In A. J. Elliot & A. C. Dweck (Eds.), *Handbook of competence and motivation* (pp. 167-184). New York: Guilford Press.
- Rothbart, M. K., & Posner, M. I. (2006). Temperament, attention, and developmental psychopathology. In D. Cicchetti & D. J. Cohen (Eds.), *Developmental Psychopathology: Theory and Method* (pp. 465-501). Hoboken, NJ: John Wiley & Sons, Inc.
- Rothbart, M. K. (2007). Temperament, development, and personality. *Current Directions in Psychological Science*, 16, 207-212. doi: 10.1111/j.1467-8721.2007.00505.x.
- Schaffer, H. R., & Emerson, P. E. (1964). The development of social attachments in infancy. In Schaffer & Emerson (Eds.), *Introduction* (pp. 5-11). Hoboken, NJ: John Wiley & Sons, Inc.

- Shorey, H.S., & Synder, C. R. (2006). The role of adult attachment styles in psychopathology and psychotherapy outcomes. *Review of General Psychology*, 10, 1-20. doi: 10.1037/1089-2680.10.1.1.
- Sroufe, L. A. (2005). Attachment and development: A prospective, longitudinal study from birth to adulthood. *Attachment & Human Development*, 7, 349-367. doi: 10.1080/14616730500365928.
- Stanton, G. T. (2004). The involved father. Retrieved from [www.focusonthefamily.com/parenting/parenting-roles/the-involved-father/fathers-matter](http://www.focusonthefamily.com/parenting/parenting-roles/the-involved-father/fathers-matter).
- Thornton, A., Orbuch, T. L., & Axinn, W. G. (1995). Parent-child relationships during the transition to adulthood. *Journal of Family Issues*, 16, 538-564. doi: 10.1177/019251395016005003.
- Tracy, J. L., Shaver, P. R., Albino, A. W., & Cooper, M. L. (2003). Adolescent romantic relations and sexual behavior: Theory, research, and practical implications. In P. Florsheim (Ed.), In P. F. (Ed), *Attachment styles and adolescent sexuality* (pp. 137-159). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.
- Verschueren, K., & Marcoen, A. (1999). Representation of self and socioemotional competence in kindergartners: Differential and combined effects of attachment to mother and to father. *Child Development*, 70, 183-201. doi: 10.1111/1467-8624.00014.
- Waters, E., Weinfield, N. S., & Hamiton, C. E. (2000). The stability of attachment security from infancy to adolescence and early adulthood: General discussion. *Child Development*, 71, 703-706. doi: 10.1111/1467-8624.00179.

Watson, D., Clark, L. A., & Carey, G. (1988). Positive and negative affectivity and their relation to anxiety and depressive disorders. *Journal of Abnormal Psychology, 97* 346-353. doi:

10.1037/0021-843x.97.3.346.

Yap, M. B. H., Allen, N. B., O'Shea, M., Di Parsia, P., Simmons, J. G., & Sheeber, L. (2011).

Early adolescents' temperament, emotion regulation during mother-child interactions, and depressive symptomatology. *Development and Psychopathology, 23*, 267-282. doi:

10.1017/S0954579410000787.

Table 1  
*Sample Demographics (N = 245)*

	Mean (SD) or N (%)
Age	19.93 (1.44)
Gender (% Female)	177 (72.2%)
Year in school	
Freshmen	80 (32.7%)
Sophomore	71 (29.0%)
Junior	55 (22.4%)
Senior	39 (15.9%)
Race/Ethnicity	
White, not of Hispanic descent	203 (82.9%)
Black, not of Hispanic descent	15 (6.1%)
Asian	2 (.8%)
Hispanic	8 (3.3%)
Biracial or Multiracial	15 (6.1%)
Prefer not to answer	2 (.8%)
Presence of a father-like figure	
Biological father	219 (89.4%)
Uncle	4 (1.6%)
Grandfather	4 (1.6%)
Stepfather	14 (5.7%)
Adopted father	3 (1.2%)
Other	1 (.4%)

Table 2

*Mean (SD) for Caregiver-Child Attachment, Mental Health Outcomes, and Temperament*

	Men ( <i>N</i> = 68)	Women ( <i>N</i> = 177)	Total ( <i>N</i> = 245)
<b><i>Caregiver-Child Attachment</i></b>			
Father Attachment-Avoidance	3.01 (1.63)	3.33 (1.68)	3.24 (1.67)
Father Attachment-Anxiety	1.90 (1.35)	2.04 (1.57)	2.00 (1.51)
<b><i>Mental Health Outcomes</i></b>			
Depression	11.22 (5.28)**	13.58 (5.83)**	12.93 (5.77)
Anxiety	10.22 (3.19)***	12.66 (5.03)***	11.98 (4.71)
Interpersonal Communication	80.75 (14.82)	77.24 (15.05)	78.21 (15.04)
Risk-Taking Behaviors	26.16 (3.43)	26.95 (3.50)	26.73 (3.49)
<b><i>Temperament</i></b>			
Negative Affect	3.88 (.75)	4.39 (.75)	4.25 (.79)
Effortful Control	4.29 (.79)	4.07 (.87)	4.13 (.85)

*Note.* \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ . *Note.* Cohen's  $d$  was calculated by dividing the mean difference between men and women by the pooled standard deviation. For depression, Cohen's  $d = .42$ . For anxiety symptoms, Cohen's  $d = .58$ .



Table 3

*Associations between Attachment to Fathers during Young Adulthood and Mental Health**Outcomes*

	1	2	3	4	5	6	7	8
1 Attachment Anxiety (Father)	1	--	--	--	--	--	--	--
2 Attachment Avoidance (Father)	.57**	1	--	--	--	--	--	--
3 Depression	.40**	.32**	1	--	--	--	--	--
4 Anxiety	.32**	.41**	.69**	1	--	--	--	--
5 Interpersonal Communication	-.41**	-.36**	-.52**	-.50**	1	--	--	--
6 Risk-Taking Behaviors	.06	.07	.07	.07	.09	1	--	--
7 Negative Affect	.34**	.32**	.55**	.61**	-.44**	.25**	1	--
8 Effortful Control	-.27**	-.27**	-.45**	-.44**	.53**	.13*	-.33**	1

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