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Natural Disasters and Attachment Quality: The Mediating Role of Coping

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NATURAL DISASTERS AND ATTACHMENT QUALITY: THE MEDIATING ROLE
OF COPING

by

Alexandra Virginia Teller

A Thesis
Submitted to the Graduate School
and the Department of Psychology
at The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Master of Arts

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ABSTRACT

Research shows a strong relationship between children's exposure to a natural disaster, parental distress, and development of mental health problems. It is theorized that trauma-related parental distress is associated with maladaptive parenting behaviors, which negatively impact the psychological development of children. The long-term impact of trauma exposure from a natural disaster on parent-child relationship quality and mental health outcomes for emerging adults has only been minimally investigated. The use of adaptive coping strategies has been found to be helpful for preventing mental health problems, while maladaptive coping has been associated with the development of psychopathology. The present study examined the role of coping strategies as a mediator in the relationship between parent-child attachment quality and mental health symptoms in both a sample of emerging adult survivors of Hurricane Katrina ($N = 136$) and a typical sample of emerging adults ($N = 156$). All participants were college students (aged 18-23) and reported on perceived parent-child attachment quality, use of adaptive and maladaptive coping strategies, demographic information, and depression, anxiety, and stress symptoms. Hurricane Katrina survivor participants additionally reported on hurricane exposure severity and posttraumatic stress symptoms. As hypothesized, parent-child attachment quality was predictive of the utilization of maladaptive coping strategies in emerging adult survivors of Hurricane Katrina as well as a comparison sample of emerging adults. Also, as predicted, maladaptive coping was found to be a significant partial mediator of the relationship between attachment quality and both emotional distress and posttraumatic stress symptoms. Contradictory to hypotheses, adaptive coping was not associated with attachment quality and did not mediate the relationship

between attachment quality and emotional distress or posttraumatic stress symptoms in either sample. These findings suggest the negative relationship between attachment quality and maladaptive coping may be one mechanism by which the relationship between attachment quality and mental health is explained. The significance of the maladaptive coping mediation in comparison to the non-significance of the adaptive coping mediation may indicate parent-child attachment quality has a more pronounced effect on children's development and utilization of maladaptive coping strategies than adaptive coping.

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CHAPTER I - INTRODUCTION

The trauma experienced by survivors of natural disasters can be severe and may be accompanied by long-lasting psychological distress (King, Polatin, Hogan, Downs, & North, 2015). Hurricane Katrina has been identified as one of the most catastrophic natural disasters to occur in the United States (U.S. Department of Commerce, 2007). The destruction caused by the storm was exacerbated by inadequate preparedness and insufficient rescue response (Pina, Villalta, Ortiz, Gottschall, Costa, & Weems, 2008). Most at risk for poor outcomes following a natural disaster are the youth who experienced the disaster (Norris, Friedman, Watson, Byrne, Diaz, & Kaniasty, 2002). Children and adolescents exposed to natural disasters may develop mental health problems including Posttraumatic Stress Disorder (PTSD), mood disorders, and anxiety disorders (Deuchet & Felfe, 2015). Although the exposure to traumatic events elevates the risk for psychological disorders, not every child exposed develops mental health problems (McGloin & Widom, 2001). Also, there is variability in the severity and longevity these children experience negative psychological symptoms (Kelley, Self-Brown, Le, Bosson, Hernandez, & Gordon, 2010). In the past few decades, evidence has been building that these symptoms persist for many children long after experiencing a traumatic event (Silverman & La Greca, 2002). Little is currently known as to why some youth appear more resilient than others following exposure to a natural disaster (Proctor, Fauchier, Oliver, Ramos, & Margolin, 2007). Additionally, little is known about the longer-term impact of exposure to trauma on the coping strategies of young adults and the impact that the parent-child relationship may have to bear on these effects.

Following a natural disaster, families are transported to different areas for shelter which disrupts social support networks, and the family unit becomes the most stable component of the survivors' lives (Baggerly & Exum, 2008). Since children have fewer life experiences to draw from, they look to their parents for guidance with understanding what has occurred (Mohay & Forbes, 2009; Osofsky, Osofsky, Kronenberg, Brennan, & Hansel, 2009). Parents' behaviors throughout and following a trauma influence how the children are psychologically impacted by the trauma (Valentino, Berkowitz, & Stover, 2010). Overall, studies have shown that following a traumatic event, negative parenting behaviors (hostile and coercive) are associated with an increased occurrence of PTSD symptoms in children, while positive parenting (supportive and engaged) has been associated with better adjustment (Valentino, Berkowitz, & Stover, 2010). Further, several studies have found that the children who experience the most trauma-related mental health issues following a natural disaster also had parents who reported numerous trauma-related mental problems and distress (Scheeringa & Zeanah, 2001; Scheeringa & Zeanah, 2008). Adaptive coping has been found to be independently associated with lower levels of mental health problems in adolescents (Hakim-Larson, 1999) and may be associated with coping with trauma experienced because of natural disasters. The relationships between parent-child attachment quality, coping strategies, and mental health have only been minimally investigated (Felix, Kaniasty, You, & Canino, 2016) and has not been fully explored in a sample of participants who have experienced a natural disaster. Therefore, the current study investigated coping as a mediator in the relationship between parental attachment quality and mental health in both a sample of typical emerging adults and a sample of emerging adult survivors of Hurricane Katrina.

Impact of Natural Disasters on Mental Health

Youth exposed to hurricanes often exhibit high levels of fear, survival guilt, physical complaints, depressive symptoms, and a decreased ability to concentrate (Barrett, Ausbrooks, & Martinez-Cosio, 2012; Vogel & Vernberg, 1993). Additionally, reductions in academic performance are reported (Barrett, Ausbrooks, & Martinez-Cosio, 2012). The children and adolescents with greater trauma exposure and perception of threat reported higher levels of post-traumatic stress disorders and psychopathology (McDermott et al., 2005). Youth who experience natural disasters may exhibit symptoms indicative of PTSD, including sleep difficulties, hyperarousal, aggressive behaviors, and fearful behaviors (Dugan, Snow, & Crowe, 2010). They also may become withdrawn and depressed (Dugan, Snow, & Crowe, 2010).

The individuals who experience posttraumatic stress symptoms often also report symptoms of anxiety disorders and depression (Davidson & Foa, 1991; Roberts, Mitchell, Witman, & Taffaro, 2010). Emerging adults exposed to natural disasters often experience symptoms of depression, including fatigue, depressed mood, feelings of worthlessness, and significant changes in weight (Roberts, Mitchell, Witman, & Taffaro, 2010). Frequent comorbid anxiety symptoms reported by disaster-exposed emerging adults include restlessness, excessive anxiety and worry, muscle tension, and difficulty concentrating (Vernburg & Varela, 2001). For example, 39% of emerging adults who experienced a super-cyclone in India were found to have anxiety and depression in conjunction with posttraumatic stress symptoms (Kar & Bastia, 2006).

Mental health symptoms may endure for years after the natural disaster, with emerging adult survivors often experiencing long-term behavioral, emotional, and

academic difficulties (Roberts, Mitchell, Witman, & Taffaro, 2010). Following exposure to a natural disaster, some youth have been found to regress developmentally or remain stagnant in the same developmental stage (Dugan, Snow, & Crowe, 2010). Children and adolescents are thought to be the most vulnerable to psychological distress following natural disasters because they are at an early developmental stage (Zhang et al., 2010). This developmental immaturity may leave them vulnerable to life-long consequences of this post-traumatic psychological distress (Schwartz & Perry, 1994).

In the years following a natural disaster, youth have been found to be at a higher risk for developing comorbid PTSD and persistent treatment resistant secondary depression (Goenjian et al., 1995; Goenjian et al., 1997). Following Hurricane Andrew in 1992, several researchers began investigating the enduring posttraumatic responses of children and adolescents to hurricane exposure. A study conducted by LaGreca et al. (1996) found that three months after the hurricane, 30% of the child and adolescent participants reported PTSD symptoms ranging from severe to very severe. At ten-months post-hurricane, 13% of the participants continued to experience these symptoms (LaGreca et al., 1996). Also investigating the impact of Hurricane Andrew on youth, Shaw, Applegate, and Schorr (1996) found that 38% of the children and adolescents reported severe or very severe levels of posttraumatic symptoms and 51% exhibited moderate levels 32 weeks following the hurricane. Furthermore, 21 months after the hurricane 70% of the youth continued to report moderate to severe levels of posttraumatic symptoms (Shaw et al., 1996). Little is known about the longer-term impact this natural disaster had on these youth as they developed into emerging adulthood.

There are few studies which have examined adolescent survivors of Hurricane Katrina. In comparison to the time prior to Hurricane Katrina, the prevalence of youth who experienced mental health symptoms increased by 44% in the two years following the hurricane (Roberts, Mitchell, Witman, & Taffaro, 2010). An estimated 79% of these children and adolescents reported the onset of their symptoms occurred in the year following the hurricane, and 56% of these youths continued to have mental health problems at 2 years later (Roberts, Mitchell, Witman, & Taffaro, 2010). Many of these children are now emerging adults and the stability of mental health concerns in this population has not been examined. This long-term continuation of mental health symptoms has been found for emerging adults exposed to several other types of natural disasters, including earthquakes (Zhang et al., 2010; Derivois, Mersier, Cenat, & Castelot, 2014; Pynoos et al., 1998; Hizil, Taskintuna, Isikli, Kilic, and Zileli, 2009), floods (Martin, Felton, & Cole, 2015; Felton, Cole, & Martin, 2012), tornadoes (Adams et al., 2016; Paul et al., 2015; Price, Yuen, Davidson, Hubel, & Ruggiero, 2015; Adams et al., 2014), tsunamis (Pityaratstian, Piyasil, Ketumarn, & Sitdhiraksa, 2015; Vastfjall, Peters, & Slovic, 2014; Wu, 2014), rain storms (Zhen, Quan, Yao, & Zhou, 2016), and fires (Braun-Lewensohn, 2014).

The chaotic nature of the events that follow a natural disaster may impact the ability to regulate, identify, and express emotions and to relate to others (Tural et al., 2004). Furthermore, the overall experience may negatively impact the individual's core identity (Zhang et al., 2010). Some specific factors have been found to be associated with an increased risk of emerging adults developing mental health problems, including trait anxiety (Lonigan et al., 1994), negative affect (Weems et al., 2007), gender

(Shannon et al., 1994; Weems et al., 2007), severity of trauma exposure (Weems et al., 2007), and coping (Tural et al., 2004). Parenting and parental attachment quality are thought to also impact the development and persistence of mental health outcomes associated with trauma (Andretta et al., 2015; Hoeve et al., 2012). Therefore, the current study hypothesized that parental attachment quality would impact the mental health symptoms of emerging adult survivor of Hurricane Katrina.

Effects of Trauma on Parenting

Researchers have theorized that the psychological distress experienced by parents following a natural disaster may interfere with or reduce positive parenting behaviors, which may then increase the likelihood of children developing negative psychological symptoms (Costa, Weems, & Pina, 2009; Cobham & McDermott, 2014). It has been consistently found that the children who experience the most trauma-related mental health issues following a natural disaster had parents with trauma-related mental health problems (Scheeringa & Zeanah, 2001; Scheeringa & Zeanah, 2008). It is theorized that parents who develop PTSD experience an increase in sensitivity and reactivity, which could lead to an increased risk of aggression and other negative behaviors towards children (Sherman et al., 2016). Parents diagnosed with PTSD have reported experiencing poorer and more disengaged parent-child relationships than those without PTSD (Sherman et al., 2016).

One study (Kelley, Self-Brown, Le, Bosson, Hernandez, & Gordon, 2010) found that exposure to Hurricane Katrina predicted children's PTSD symptoms, and that parental distress and use of negative parenting practices also predicted child posttraumatic stress symptoms for this population. Also following Hurricane Katrina,

mothers who reported a depressed mood, in addition to psychological distress, reported lower parent efficacy and higher levels of mental health problems in their children (Scaramella, Sohr-Preston, Callahan, & Mirabile, 2008). Following trauma exposure, parents have reported feelings of fear and helplessness, which have been associated with a lower sense of trust and security in children (Osofsky, 1995).

Attachment

The attachment between a parent and child has been found to influence child personality and behavior (Duchesne & Larose, 2007). From infancy, humans display attachment towards their parents through proximity-seeking behavior. Bowlby theorized that this behavior is driven by desire for protection and survival in young children (Bowlby, 1969; Jones, Cassidy, & Shaver, 2015). While these evolutionarily-guided behaviors are most visible with children, Bowlby believed that the attachment behavioral system actively influences behaviors throughout the lifespan (Bowlby, 1969). The child and parent both possess their own system. Parents are thought to possess a caregiving behavioral system which influences parenting behaviors and beliefs to align with the goal of protecting offspring (Jones, Cassidy, & Shaver, 2015). Ideally, these behaviors would also serve to prevent and reduce child distress and encourage socioemotional and physical growth. The caregiving behavioral system of the parent and the attachment behavioral system of the child are thought to work in unison creating a dynamic parent-child relationship (Van Rosmalen, Van der Horst, & Van der Veer, 2016). Together the two systems work to maintain the protection, survival, and close proximity of the child. However, a parent's attachment system may interfere with, and cause harm to, the parent-child relationship by overpowering their caregiving system in response to situational

factors, such as the death of a loved one, or potentially due to a natural disaster or other trauma. This change may hinder the parent's ability to effectively respond to their child's needs (Jones, Cassidy, & Shaver, 2015).

According to attachment theory, infants create personalized internal working models (IWMs) of themselves, their parents, and both current and future relationships (Simmons, Gooty, Nelson, & Little, 2009). The IWMs are based on the information from and quality of the caregiving of the parents (Bannick et al., 2013). These templates of the initial experiences of parental caretaking behaviors impact the development of the child's attachment style into either secure or insecure. Secure attachment style represents a child whose parents provide responsive care and as a result internalize a self-perception of being deserving of loving care and a view of the parents as dependable in times of hardship and need (Duchesne & Larose, 2007). In contrast to those with insecure attachment styles, secure individuals are more capable of building an effective support system and develop effective coping mechanisms (Jones, Cassidy, & Shaver, 2015). An insecure attachment style can be categorized as either avoidant or anxious-ambivalent. Those with the avoidant style are distrusting of others' intentions and attempt to remain emotionally distant (Duchesne & Larose, 2007). The anxious-ambivalent style is characterized by uncertainty of the responses of others and a strong desire for intimacy along with an intense fear of being rejected (Duchesne & Larose, 2007). The chosen alterations in parenting behavior in response to threats may influence the attachment style of the child. Parental display of more positive caretaking behaviors has been associated with secure attachment, while negative parental behaviors (e.g. severe punishment) has been associated with insecure attachment (Jones, Cassidy, & Shaver, 2015).

Attachment Quality

Attachment styles (secure, anxious, avoidant) are readily used to understand attachment relationships in young children. Attachment quality is sometimes examined as a descriptor of the attachment relationship in adolescents (O'Connor, & Elklit, 2008) and emerging adults (Einav, 2014). Three dimensions that have been examined when investigating attachment quality are trust, communication, and alienation (Armsden & Greenberg, 1987; Andretta et al., 2015). Interrelation trust incorporates the degree to which respect is perceived by the child as being mutual and associated with autonomy. Communication includes the amount of involvement with parents and level of comfort with discussing personal life with parents. The alienation dimension assesses feelings of detachment from, and anger towards parents. High quality attachment is typified by high levels of interrelation trust, effective communication, and low reports of alienation (Hale et al., 2006). In contrast, poorer quality attachment with parents, is characterized by low levels of trust, poor communication, and marked feelings of alienation (Hale et al., 2006). High levels of attachment quality have been associated with better mental health outcomes for youth, while low levels of attachment quality are associated with depression and anxiety (Bannink, Broeren, van de Looij-Jansen, & Raat, 2013; Darling & Steinberg, 1993).

One indicator of parent-child relationship quality is emotional availability, which is the parent's ability to be emotionally attuned and communicate (Philbrook & Teti, 2016). High attachment quality is characterized by parents demonstrating emotional availability and closeness towards their children (Philbrook & Teti, 2016; Karavasilis, Doyle, & Markiewicz, 2003). Low attachment quality is characterized by emotionally-distant

parents who are mistrusting of their children (Karavasilis, Doyle, & Markiewicz, 2003). It has been theorized that the emotional quality of the interactions between the parent and child influences the impact of parenting practices on children's developmental outcomes (Darling & Steinberg, 1993). Therefore, attachment with high emotional quality in which the parent is perceived as responsive and loving toward their child, may work to increase the effectiveness of parenting practices in promoting prosocial behavior (Philbrook & Teti, 2016). In support of this theory, the disciplinary techniques used by more emotionally-responsive mothers were associated with increased child competence, while those used by emotionally unsupportive mothers were linked with lesser child outcomes (Towe-Goodman & Teti, 2008; McLoyd & Smith, 2002). It has been found that parents who utilize positive reinforcement (e.g., encouragement and praise) to promote prosocial behaviors generally have higher quality attachment with their children than those who use punishment (Coombs & Landsverk, 1988).

As an adolescent, attachment quality is thought to impact both current mental health and the probability of future development of psychopathology (Bannink, Broeren, van de Looij-Jansen, & Raat, 2013). Poorer quality attachment with parents has been found to be associated with greater severity of anxiety symptoms (Hale et al., 2006). Andretta et al. (2015) found that fewer depression and anxiety symptoms were reported by adolescents and emerging adults with better attachment quality when compared with those with lower quality.

Attachment quality impacts the functioning of emerging adults in numerous life domains. For example, it has been found to affect how they relate to others, perceive and process social information, and experience empathy (Dykas & Cassidy, 2011; Labile et

al., 2004). In comparison to emerging adults with low attachment quality, those with high attachment quality have been found to report increased satisfaction with life, seek out social support more frequently, and experience less distress in response to life events (Armsden & Greenberg, 1987). Furthermore, better attachment quality has been associated with improved emotional and academic adjustment (Rice, Fitzgerald, Whaley, & Gibbs, 1995; Vivona, 2000). Diamond and Siqueland (1995) theorized that adolescents who perceive their relationship with their parents to be of lower quality have an increased likelihood of internalizing behaviors. For adolescents and emerging adults, moderate to high attachment quality has been linked to increased amounts of and tendency toward prosocial behavior (Andretta et al., 2015), while poorer quality has been associated with increases in defiant behavior and aggression. Specifically, poor attachment quality has been found to be positively correlated with oppositional defiance and delinquency (Andretta et al., 2015; Hoeve et al., 2012). One study found that over a three-year period, poorer quality attachment was predictive of increases of externalizing behavior and higher severity of depression symptoms in adolescents (Allen, Porter, McFarland, McElhaney, & Marsh, 2007; Besharat et al, 2013).

It has been theorized that more favorable and positive attachment relationship quality with parents may act as a protective factor against children and adolescents developing mental health problems (Philbrook & Teti, 2016). Furthermore, attachment quality has been found to remain important during adolescence and emerging adulthood (Coombs & Landsverk, 1988). During the transition to emerging adulthood, individuals begin to develop autonomy; however, attachment security with their primary caregivers is still needed for optimal development (Andretta et al., 2015; Armsden & Greenberg,

1987). Studies conducted thus far have found that the dimensions of attachment quality profoundly affect the social-emotional functioning and mental health of emerging adults (Andretta et al., 2015; Milan & Acker, 2014; Bannink, Broeren, van de Looij–Jansen, & Raat, 2013; Hovee et al., 2012). There is ample evidence to suggest that attachment quality is related to mental health outcomes in emerging adults; however, the mechanism by which this occurs has not been fully explored. Furthermore, this relationship has not been explored within the context of trauma related to natural disasters. One such mechanism may be the development of coping strategies. Therefore, the current study examined coping as a mediator in the relationship between attachment quality and mental health outcomes in a sample of emerging adult survivors of Hurricane Katrina. Past studies investigating the effects of trauma on attachment quality have typically focused on sexual trauma (Stubenbort, Greeno, Mannarino, & Cohen, 2002) or trauma experienced as a result of war (Okello, Nakimuli-Mpungu, Musisi, & Broekaert, 2014). Findings from these studies suggest poorer attachment quality is predictive of child and adolescent development of psychopathology following the traumatic experience (Stubenbort, Greeno, Mannarino, & Cohen, 2002; Okello, Nakimuli-Mpungu, Musisi, & Broekaert, 2014), and it is plausible that these same findings may apply to the trauma experienced from a natural disaster.

Coping

Following exposure to a disaster, individuals often develop posttraumatic stress symptoms that vary in severity and duration (Fu & Gil-Rivas, 2010). While some individuals recover quickly with minimal impact on their normal functioning, others are debilitated by their symptoms and never fully recover (Lang, Goulet, & Amsel, 2004).

These variations in the reactions of people to traumatic experiences have been found to be related to psychological resilience factors demonstrated through coping behaviors (Peterson & Toler, 1986; Weisz, McCabe, & Dennig, 1994). Those who possess a high level of resilience factors have been found to have a positive outlook and better ability to cope with negative life events (Bradley et al., 2013).

Coping is defined as the cognitive and behavioral efforts used to manage demands (Lazarus & Folkman, 1984). In order for an individual to efficiently navigate and adapt to their environment, and reduce possible negative impacts on mental health, they must utilize effective coping mechanisms (Nielson, 2003; McEwen, 1999). The numerous coping strategies that have been identified can generally be categorized into two styles, which are the problem-focused coping style or emotion-focused coping style (Lazarus & Folkman, 1984). The problem-focused coping style consists of strategies that directly attend to the source of distress through logical reasoning (Lazarus & Folkman, 1984). In comparison, the emotion-focused coping style includes strategies that affectively address the source of distress (Lazarus & Folkman, 1984).

Coping styles were thought by Lazarus and Folkman (1984) to affect how individuals react to traumatic experiences, with emotional coping being less effective than problem-focused coping. Several studies have supported this theory, with findings that those who were evaluated to have low levels of problem-focused coping and high levels of emotional coping prior to experiencing trauma were at a higher risk for developing PTSD symptoms (Gil, 2005; Nielson, 2003). Problem-focused strategies have been found to facilitate problem solving, thus these strategies are considered adaptive and more beneficial (Matheson et al., 2005). Emotion-focused strategies have

been found to facilitate unnecessary ruminative focus on emotions and are viewed as maladaptive (Matheson et al., 2005). Maladaptive coping, or emotion-focused, strategies have also been linked to the development of multiple other mental health problems and disorders (Valiente, Fabes, Eisenberg, & Spinrad, 2004).

Bowlby (1969) proposed that the development of an individual's coping strategies is influenced by attachment style, such that securely attached individuals utilize different coping strategies than those who are insecurely attached (Prinstein, La Greca, Vernberg, & Silverman, 1996). Seiffge-Krenke and Beyers (2005) also theorized that aspects of attachment continue to shape coping well into adulthood. In children and adults, secure attachment has been repeatedly associated with healthy and effective coping strategies, whereas the insecure attachment styles have been found to be predictive of the use of maladaptive and ineffective coping strategies (Salloum & Lewis, 2010). It has been hypothesized that a parent's positive response to their child's negative emotions facilitates learning about coping, while a negative parental response may discourage emotional expression and impede the child's learning about coping and adaptation abilities (Valiente, Lemery-Chalfant, & Swanson, 2008). The emotional availability characteristic of parents with high attachment quality may assist in children developing adaptive coping strategies, while the emotional distance often exhibited by parents with low attachment quality may hinder use of adaptive coping and instead encourage children to utilize maladaptive coping (Karavasilis, Doyle, & Markiewicz, 2003).

Positive emotion, support, and decreased levels of negativity displayed by mothers have been associated with children's use of adaptive coping strategies (Valiente, Lemery-Chalfant, & Swanson, 2008). Adaptive coping strategies are thought to

neutralize the negative effects of stress, while also fostering psychological well-being (Lazarus & Folkman, 1996). In response to natural disasters, children have been shown to utilize wishful thinking, blame and anger, and social withdrawal as coping strategies (Proctor et al., 2007). One study found that in the weeks following Hurricane Katrina, younger teenagers' use of avoidant coping behaviors was associated with development of PTSD and anxiety (Pina et al., 2008). However, this relationship has only been minimally examined in adolescents transitioning to emerging adulthood. Additionally, the long-term impacts of coping strategies on mental health for survivors of a natural disaster has yet to be evaluated. To date, the interactions between natural disaster exposure, attachment quality, coping style, and mental health have yet to be investigated. Therefore, the present study investigated the possible mediating role of coping style in the relationship between attachment quality and mental health for emerging adult survivors of Hurricane Katrina.

Statement of Purpose

The research investigating natural disasters has shown a consistent relationship between disaster exposure, parent's reported distress, and child psychopathology (Spell et al., 2008; Scheeringa & Zeenah, 2008). The reasons for these relationships have been theorized about, but only minimally researched thus far. Higher parental attachment quality has been associated with improved mental health outcomes in youth ((Bannink, Broeren, van de Looij-Jansen, & Raat, 2013), but has not been studied in a sample of trauma survivors. Further, adaptive coping has been associated with improved mental health outcomes. Both high parental attachment quality and adaptive coping strategies have been found to be independently associated with a decreased risk of children

developing mental health issues (Matheson et al., 2005); however, it is unclear whether these continue to affect mental health beyond adolescence. Additionally, it is also unclear the extent to which coping may mediate this relationship. The present study hypothesized that a high-quality parent-child attachment may promote the use of adaptive coping strategies by the child, which would act as a buffer against developing mental health problems. As the role of coping as a mediator in the relationship between attachment quality and mental health outcomes has not yet been explored, the current study will examine this model in both a sample of typically developing emerging adults as well as a sample of emerging adult survivors of Hurricane Katrina.

Research Questions and Hypotheses

Question 1: Does the quality of parent-child attachment affect adaptive coping strategies in emerging adults?

Hypothesis 1a: It is hypothesized that parent-child attachment quality is positively associated with adaptive coping strategies in emerging adults.

Hypothesis 1b: It is hypothesized that parent-child attachment quality is positively associated with adaptive coping strategies in emerging adult survivors of Hurricane Katrina.

Question 2: Does the quality of parent-child attachment affect maladaptive coping strategies in emerging adults?

Hypothesis 2a: It is hypothesized that higher parent-child attachment quality is negatively associated with the use of maladaptive coping strategies in emerging adults.

Hypothesis 2b: It is hypothesized that parent-child attachment quality is negatively associated with maladaptive coping strategies in emerging adult survivors of Hurricane Katrina.

Question 3: Do coping strategies partially mediate the relationship between parent-child attachment quality and emotional distress in emerging adults?

Hypothesis 3a: It is hypothesized that adaptive coping strategies will partially mediate the relationship between parent-child attachment quality and emotional distress in emerging adults, such that better parent-child attachment quality will be positively associated with adaptive coping strategies, which will in turn be negatively associated with emotional distress.

Hypothesis 3b: It is hypothesized that maladaptive coping strategies will partially mediate the relationship between parent-child attachment quality and emotional distress in emerging adults, such that poorer parent-child attachment quality will be positively associated with maladaptive coping strategies, which will in turn be positively associated with emotional distress.

Question 4: After accounting for hurricane exposure severity, do coping strategies partially mediate the relationship between parent-child attachment quality and emotional distress in emerging adulthood for survivors of Hurricane Katrina?

Hypothesis 4a: It is hypothesized that when accounting for hurricane exposure severity, adaptive coping strategies will partially mediate the relationship between parent-child attachment quality and emotional distress in emerging adult survivors of Hurricane Katrina, such that better parent-child attachment quality will be

positively associated with adaptive coping strategies, which will in turn be negatively associated with emotional distress.

Hypothesis 4b: It is hypothesized that when accounting for hurricane exposure severity, maladaptive coping strategies will partially mediate the relationship between parent-child attachment quality and emotional distress in emerging adulthood for survivors of Hurricane Katrina, such that poorer parent-child attachment quality will be positively associated with maladaptive coping strategies, which will in turn be positively associated with emotional distress.

Question 5: After accounting for hurricane exposure severity, do coping strategies partially mediate the relationship between parent-child attachment quality and posttraumatic stress symptoms in emerging adulthood for survivors of Hurricane Katrina?

Hypothesis 5a: It is hypothesized that when accounting for hurricane exposure severity, adaptive coping strategies will partially mediate the relationship between parent-child attachment quality and posttraumatic stress symptoms in emerging adulthood for survivors of Hurricane Katrina, such that better parent-child attachment quality will be positively associated with adaptive coping strategies, which will in turn be negatively associated with posttraumatic stress symptoms.

Hypothesis 5b: It is hypothesized that when accounting for hurricane exposure severity, maladaptive coping strategies will partially mediate the relationship between parent-child attachment quality and posttraumatic stress symptoms in emerging adulthood for survivors of Hurricane Katrina, such that poorer parent-child attachment quality will be positively associated with maladaptive coping

strategies, which will in turn be positively associated with posttraumatic stress symptoms.

CHAPTER II – METHODOLOGY

Participants and Procedures

To examine the model in both a typical sample of emerging adults as well as in a sample of Hurricane Katrina survivors, two separate surveys were administered.

Four hundred and sixty-eight undergraduate students at a university in the southeastern United States completed the current study in exchange for class credit. The University of Southern Mississippi's Institutional Review Board approved the current study (approval letter located in Appendix B). Participants were recruited through the Department of Psychology's web-based research participation program (Sona Systems Ltd.) at a midsize southeastern university. A link was made available for participants to the Qualtrics secured website where the study's informed consent form and questionnaires were located. Once the participants reached the Qualtrics survey, they were prompted to read and electronically sign an online informed consent form for the study (Appendix A). After signing the consent form the participants were asked to fill out the demographic questionnaire. For the Hurricane Katrina survivor sample, the demographic questionnaire included two additional items inquiring about the participants' exposure to Hurricane Katrina. Following the demographic questionnaire, the Hurricane Katrina Survivor sample was instructed to answer the questions associated with hurricane severity and the study measures as well as a measure of posttraumatic stress symptoms. Measures were counterbalanced to control for order effects. The non-hurricane Katrina sample completed the demographic questionnaire, and study measures. The instructions prior to each measure indicated that all participants should answer the items as they relate to themselves or in reference to their primary caregiver. For both

samples two validity indicators that require a specified answer (e.g. Answer “Definitely Not”) were also included in the survey. Additionally, survey response times were recorded as this technique has been found to assist in identifying participants who may have been responding randomly or carelessly (Meade & Craig, 2012). The data of participants who answered one or both of the validity indicators incorrectly and/or completed the survey too quickly was removed from analyses.

A total of 245 participants responded to the non-hurricane relevant online questionnaire. Sixty participants did not complete the entire questionnaire, 7 participants did not meet the age requirements, and an additional 17 participants failed validity checks, so their data was excluded from analyses. Preliminary data analysis utilizing standardized values of all dependent variables and Mahalanobis Distances identified 5 participants as outliers, thus their data was removed from further analyses. Thus, the data from the remaining 156 participants was included in final analyses.

A total of 233 participants responded to the hurricane relevant online questionnaire. Fifty-five participants did not complete the entire questionnaire, 11 participants did not meet the age requirements, and an additional 31 participants failed validity checks, so their data was excluded from analyses. Thus, the data from the remaining 136 participants were included in the Hurricane Katrina survivor sample analyses.

Typical Sample of Emerging Adults

The typical sample of emerging adults included 33 male and 123 female emerging adult college students, ranging in age from 18 to 23 years old ($M = 19.56$, $SD = 1.48$). A little over half of participants in the sample identified their race as White/non-Hispanic

(51.3%), 46.2% identified as Black/African-American, 0.6% identified as Asian-American, and 1.9% identified as Native American. At the time of the survey, most of the subjects in the typical sample of emerging adults identified as a freshman in college (44.9%), with the remaining participants identifying as a sophomore (17.9%), junior (20.5%), or senior (16.7%) in college. The majority of the subjects in the sample indicated their mother as their primary caregiver (74.4%) and that their primary caregiver was in a committed relationship during the subject's childhood (64.1%). Furthermore, over half of the subjects in the sample indicated their primary family structure included their married, biological parents (55.8%). All demographic information reported by the subjects in the typical sample of emerging adults is presented in Table 1.

Hurricane Katrina Survivor Sample

The Hurricane Katrina survivor sample included 39 male and 97 female emerging adult college students, ranging in age from 18 to 23 years old ($M = 19.24$, $SD = 1.47$). Over half of the participants in the sample identified their race as White/non-Hispanic (63.2%), 33.8% identified as Black/African-American, and 2.9% identified as Asian-American. At the time of the survey, over half of the subjects in the Hurricane Katrina survivor sample identified as a freshman in college (59.6%), with the remaining participants identifying as a sophomore (11.8%), junior (17.6%), or senior (11%) in college. Majority of the subjects in the sample indicated their mother as their primary caregiver (77.9%) and that their primary caregiver was in a committed relationship during the subject's childhood (72.1%). Furthermore, over half of the subjects in the sample indicated their primary family structure included their married, biological parents (64%). All demographic information reported by the subjects in the Hurricane Katrina

survivor sample is presented in Table 1. Prior to conducting the current study, G*Power software calculated that 100 would be the appropriate number of participants for the hurricane survivor sample based on the following input: an effect size of .15, alpha error probability of .05, power of .80, and 6 predictors.

Table 1 *Demographic Characteristics of the Typical Sample of Emerging Adults and Hurricane Katrina Survivor Sample*

Characteristic (Range)	Typical Sample (N = 156)		Hurricane Survivor Sample (N = 136)	
	M	SD	M	SD
Participant age (18-23)	19.56	1.48	19.24	1.47
Characteristic	N	%	N	%
Participant Sex				
Male	33	21.2	39	28.7
Female	123	78.8	97	71.3
Participant Race				
White/non-Hispanic	80	51.3	86	63.2
Black/African-American	72	46.2	46	33.8
Asian-American	1	.6	4	2.9
Native American	3	1.9	-	-

Table 1 (Continued). Characteristic	Typical Sample		Hurricane Sample	
	N	%	N	%
Year in School				
Freshman	70	44.9	81	59.6
Sophomore	28	17.9	16	11.8
Junior	32	20.5	24	17.6
Senior	26	16.7	15	11.0
Immediate Family's Income				
\$0-\$24,999	22	14.1	15	11.0
\$25,000-\$49,000	44	28.2	25	18.4
\$50,000-74,999	31	19.9	35	25.7
\$75,000-\$99,999	19	12.2	27	19.9
\$100,000-\$124,999	15	9.6	17	12.5
\$125,000-\$149,999	10	6.4	7	5.1
\$150,000+	15	9.6	10	7.4
Participants' Primary Caregiver				
Mother	116	74.4	106	77.9
Father	33	21.2	24	17.6
Grandfather or other male family member (e.g. Uncle)	1	.6	1	.9
Grandmother or other female family member (e.g. Aunt)	5	3.2	2	1.5
Other	1	.6	3	2.2

Table 1 (Continued). Characteristic	Typical Sample		Hurricane Sample	
	N	%	N	%
Participants' Primary Caregiver Relationship				
Single	56	35.9	38	27.9
Committed Relationship	100	64.1	98	72.1
Participants' Primary Family Structure				
Married, biological parents	87	55.8	87	64.0
Biological parent and step parent	13	8.3	17	12.5
Other unmarried two-parent household	3	1.9	3	2.2
Single parent only	27	17.3	20	14.7
Single parent with significant support from family	21	13.5	9	6.6
Other caregiver	5	3.2	-	-

Measures

Demographic Questionnaire

The researcher created a self-report demographic form to be utilized for the present study that gathered basic demographic information about the participants as well as their current living situation, family income, and basic demographic information about their family.

Hurricane-related Traumatic Experiences

Since there has been found to be some variability regarding the amount and type of trauma exposure that was experienced by survivors of Hurricane Katrina, and because trauma exposure can be related to mental health outcomes (Jones, Cassidy, & Shaver, 2015), the Hurricane-related Traumatic Experiences-Revised (HURTE; Vernberg et al., 1996) questionnaire will be utilized to assess the amount and content of hurricane-related traumatic experiences. An experience is described in each of the items and participants indicate if they had the experience by answering “Yes” or “No”. The HURTE consists of three sections, including life threat, immediate loss and disruption, and ongoing loss and life disruption. The life threat section includes 8-items, which contain content related to life-threatening events that occurred during the hurricane (e.g. “Did you get hit by anything falling or flying during the hurricane?”). This section yields an Actual Life Threat score calculated from responses to six of the items and ranging from 0 to 6. The life threat section also yields a Perceived Life Threat score, ranging from 0 to 1, from the item “At any time during the hurricane, did you think you might die?”. The immediate loss and disruption section includes 9-items, which assess exposure to hurricane-related loss and disruption following the hurricane (e.g. “Was your home damaged badly or destroyed by the hurricane?”) and yields an Immediate Loss/Disruption total score ranging from 0 to 9. The ongoing loss and life disruption section contains 6-items, which inquire about loss of disruption caused by the hurricane (e.g. “Is there any damage to your house or property from the hurricane that still needs to be fixed?”), and yields an Ongoing Loss/Disruption total score ranging from 0 to 6. Internal consistency for the measure was found to be adequate in a recent study, with alpha coefficients ranging from .63 to .77 (Yelland et al., 2010). The HURTE has been used in multiple studies involving

samples exposed to hurricanes (La Greca, Lai, Llabre, Silverman, Vernberg, & Prinstein, 2013; Weems et al., 2010). For the present study, the internal consistency coefficient for the Hurricane Katrina survivor sample was .727. For the current study, the HURTE was used as a descriptive measure and the total score was included in analyses to account for variance related to severity of hurricane experiences.

Inventory of Parent and Peer Attachment

Parent-child attachment quality was assessed using the Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987). For the purposes of the current study, the IPPA original items which referenced the participant's "mother", or "mother figure", were changed to read "primary caretaker" in an effort to remain gender neutral. While the IPPA includes a peer attachment section and a parent attachment section, participants only responded to the parent attachment section, which evaluates the trust, communication, and alienation of the attachment to their primary caretaker. This method of administering only the parent part of the assessment of the IPPA has been used in several studies of parent-child relationships (Otis, Huebner, & Hills, 2016; Eijck, Branje, Hale, & Meeus, 2012). Items are rated on a 5-point Likert scale ranging from 1 (almost never true) to 5 (almost always true). The measure contains three subscales, including communication, trust, and alienation. The measure yields a total score and three subscale scores. Only the total score was utilized for the present study. The quality of the attachment is based on the total score with higher scores indicating a more favorable and secure attachment. The IPPA has been found to be reliable and valid in several studies, with one study finding reliability coefficients ranging from .83 to .87 (Eijck, Branje, Hale, & Meeus, 2012; Vivona, 2000). For the present study, internal consistency

coefficients for the typical sample and Hurricane Katrina survivor sample were .936 and .930 respectively.

Brief COPE

Utilization of coping strategies will be assessed using the Brief COPE (Carver, 1997), which includes 28-items assessing coping strategies rated on a 4-point Likert scale ranging from 1 (I haven't been doing this at all) to 4 (I've been doing this a lot), based on how often in the previous months that they have utilized the coping mechanism described by the item. The measure contains 14 scales, with each containing two items related to a specific coping strategy. Eight of the scales are considered adaptive coping strategies, including active coping, planning, positive reframing, acceptance, humor, religion, use of emotional support, and use of instrumental support. The remaining six scales are considered maladaptive coping strategies, which includes self-distraction, denial, venting, substance use, behavioral disengagement, and self-blame. Responses are calculated into a score for each of the two categories of coping (adaptive and maladaptive) and a score for each of the 14 strategies. The adaptive coping scale and maladaptive scale total scores and individual scale scores were included in the analyses. A recent study involving college students conducted by Mahmoud et al. (2012) found adequate internal consistency for the Brief COPE, with the two scales' alpha coefficients ranging from .81 to .88. For the present study, the Maladaptive scale internal consistency coefficients for the typical sample and Hurricane Katrina survivor sample were .821 and .874 respectively. For the present study, the Adaptive scale internal consistency coefficients for the typical sample and Hurricane Katrina survivor sample were .863 and .894 respectively.

Posttraumatic Stress Disorder Checklist

The Posttraumatic Stress Disorder Checklist (PCL-5; Weathers et al., 2013), includes 20-items that assess Post-Traumatic Stress Disorder symptoms corresponding to the PTSD criteria specified in the DSM-5. Participants indicated the degree they have been bothered by a symptom over the past month using a 5-point Likert scale ranging from 0 (Not at all) to 4 (Extremely). Responses to all items are summed into a total severity score and four subscale severity scores, including intrusion, avoidance, cognition and mood alternations, and arousal and reactivity. Only the total severity score was included in the analyses. Recent PCL-5 norms for college student participants were derived from a study conducted by Blevins, Weathers, Davis, Witte, and Domino in 2015, which found adequate internal consistency ($\alpha = .94$), test-retest reliability ($r = .82$), discriminant validity (r 's ranging from .31 to .60), and convergent validity (r 's ranging from .74 to .85). For the present study, internal consistency coefficient for the Hurricane Katrina survivor sample was .946.

Depression Anxiety Stress Scales-21

Mental health will be assessed using the Depression Anxiety Stress Scale-21 (DASS-21; Lovibond & Lovibond, 1995), which measures levels of depression, anxiety, and stress. Participants rate the severity of symptoms experienced in the previous week on a 4-point Likert scale ranging from 0 (Did not apply to me at all) to 3 (Applied to me very much, or most of the time). Each of the three subscale scores are calculated by adding the scores from the seven individual items designated for each subscale. Subscale scores range from 0 to 21, with higher scores indicating increased severity of symptoms for the respective subscale. Items include "I felt that life was meaningless" for

depression, “I felt I was close to panic” for anxiety, and “I found myself getting agitated” for stress. Recent DASS-21 norms for college student participants were derived from a study conducted by Osman, Wong, Bagge, Freedenthal, Gutierrez, and Lozano in 2012, which found adequate internal consistency, with subscale alpha coefficients ranging from .81 to .88. Concurrent validity was examined through comparisons to related scores from instruments including the Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996), the Beck Anxiety Inventory (BAI; Beck & Steer, 1990), and the Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983), with reliability coefficients of .80, .69, and .73, respectively. For the Hurricane Katrina survivor sample in the present study, internal consistency coefficients for the Depression, Anxiety, and Stress subscales were .859, .808, and .839, respectively. For the typical sample of emerging adults in the present study, internal consistency coefficients for the Depression, Anxiety, and Stress subscales were .883, .812, and .811, respectively. Several studies of the psychometric properties of the DASS-21 have found that combining the three scales creates one total score for the measure that accurately represents overall emotional distress (Osman, Wong, Bagge, Freedenthal, Gutierrez, & Lozano, 2012). For the present study, total score internal consistency coefficients for the typical sample and Hurricane Katrina survivor sample were .929 and .924 respectively. All scores were included in the analyses.

CHAPTER III – RESULTS

The means and standard deviations for all measures are provided in Table 2. A series of statistical analyses were performed to determine if the assumptions of regression were met. Regressions were conducted, and scatterplots were examined, all of which determined there was no violation of the linearity assumption. To investigate whether the assumption of homoscedasticity was met, the unstandardized residual and predicted values were plotted for all dependent measures and visual inspection of the graphs did not indicate heteroscedasticity. Additionally, the collinearity statistics were all within the acceptable range. Therefore, the assumptions of regression do not appear to have been violated for either sample.

Independent samples t-tests were conducted to compare the measure scores for the typical sample and Hurricane Katrina survivor sample. No significant differences were found between the two samples for the IPPA total score, DASS-21 total score, DASS-21 Anxiety scale score, DASS-21 Stress scale score, Brief COPE Adaptive scale score, or Brief COPE Maladaptive scale score ($p > .05$). It should be noted, the difference in DASS-21 Depression scale score between the Hurricane Katrina survivor sample ($M = 3.88, SD = 3.55$) and typical sample ($M = 4.66, SD = 4.04$) was approaching significance ($F(1, 290) = 3.01, p = .084$).

Table 2 Means and Standard Deviations of Measures

	Hurricane Sample (N = 136)		Non-Hurricane Sample (N = 156)	
	M	SD	M	SD
IPPA	99.58	15.48	98.94	16.04
Brief COPE Adaptive	39.25	9.95	40.29	8.94
Brief COPE Maladaptive	21.73	6.87	22.94	6.38
PCL-5	15.51	14.27	-	-
DASS-21	13.31	9.94	15.22	10.47
DASS-21 Depression	3.88	3.55	4.66	4.04
DASS-21 Anxiety	3.75	3.67	4.26	3.90
DASS-21 Stress	5.68	3.93	6.30	3.81
HURTE	5.81	3.42	-	-

Note. IPPA = Inventory of Parent and Peer Attachment; PCL-5 = Posttraumatic Stress Disorder Checklist; DASS-21 = Depression Anxiety Stress Scales- 21-item version; HURTE = Hurricane-Related Traumatic Experiences.

Bivariate correlations were conducted to assess the relationships between each variable of interest for both samples. The bivariate correlations for the study measures completed by the Hurricane Katrina survivor sample and those for the typical sample of emerging adults are presented in Table 3. For both samples, the IPPA was significantly negatively correlated with all measure scales, with the exception of the Brief COPE Adaptive Coping Scale. Furthermore, the Brief COPE Adaptive Scale was found to be positively correlated with the Brief COPE Maladaptive scale, DASS-21 total score, and DASS-21 Anxiety and Stress scale scores. Also, for both samples, the Brief COPE

Maladaptive Scale was positively correlated with the DASS-21 total score and three DASS-21 scale scores, and the DASS-21 total and three scale scores were all significantly positively correlated.

The HURTE, completed by only the Hurricane Katrina survivor sample, was negatively correlated with the IPPA. Additionally, the HURTE was positively correlated with the Brief COPE Maladaptive Scale, the DASS-21 total score, DASS-21 Anxiety Scale, and DASS-21 Depression Scale. The PCL-5, completed by only the Hurricane Katrina survivor sample, was negatively correlated with the IPPA and positively correlated with all other measures except for the HURTE.

Table 3 *Bivariate Correlations for Study Measures*

Measure	1	2	3	4	5	6	7	8	9
1. IPPA	-	.050	-.291**	-.442**	-.457**	-.352**	-.374**	-.294**	-.255**
2. Brief COPE Adaptive	.004	-	.478**	.230**	.104	.293**	.215*	.241**	.040
3. Brief COPE Maladaptive	-.344**	.488**	-	.567**	.514**	.552**	.453**	.513**	.264**
4. DASS-21 Total	-.441**	.269**	.643**	-	.876**	.867**	.928**	.680**	.244**
5. DASS-21 Depression	-.465**	.152	.636**	.898**	-	.600**	.750**	.578**	.174*
6. DASS-21 Anxiety	-.312**	.292**	.517**	.887**	.691**	-	.714**	.574**	.314**
7. DASS-21 Stress	-.399**	.280**	.565**	.888**	.700**	.683**	-	.662**	.165
8. PCL-5	-	-	-	-	-.094	-	-	-	
9. HURTE	-	-	-	-	-	-	-	-	-

Note. IPPA = Inventory of Parent and Peer Attachment; PCL-5 = Posttraumatic Stress Disorder Checklist; DASS-21 = Depression Anxiety Stress Scales- 21-item version; HURTE = Hurricane-Related Traumatic Experiences; Above the diagonal are the Hurricane Katrina survivor sample correlations, and below the diagonal are the typical sample of emerging adult sample correlations; * $p < .05$, ** $p < .01$

Hypothesis 1

To test the first hypothesis, that the quality of parent-child attachment would be positively associated with the use of adaptive coping strategies by emerging adults, bivariate correlations were conducted for each sample between the quality of parent-child attachment as measured by the IPPA total score and use of adaptive coping strategies as measured by the Brief COPE Adaptive Coping Scale score. The IPPA total score was not significantly correlated with the Brief COPE Adaptive Coping Scale for either the typical sample ($r = .004, p > .05$) or Hurricane Katrina survivor sample ($r = .05, p > .05$). Hypothesis 1 was not supported.

Hypothesis 2

To test the second hypothesis, that the quality of parent-child attachment would be negatively associated with the use of maladaptive coping strategies by emerging adults, bivariate correlations were conducted between the quality of parent-child attachment as measured by the IPPA total score and use of maladaptive coping strategies as measured by the Brief COPE Maladaptive Coping Scale score. The IPPA total score was significantly negatively correlated with the Brief COPE Maladaptive Coping Scale for both the typical sample ($r = -.344, p < .001$) and Hurricane Katrina survivor sample ($r = -.291, p < .001$); therefore, Hypothesis 2 was supported for both samples.

Additionally, to investigate if the quality of parent-child attachment is predictive of the use of maladaptive coping strategies a linear regression was conducted for each sample, with the IPPA total score entered as the predictor and the Brief COPE Maladaptive Scale score entered as the dependent variable. For the typical sample, the model was significant and explained 11.8% of the variance of the Brief COPE

Maladaptive Scale score ($R^2 = .118$, $F(1, 154) = 20.699$, $p < .001$), with the IPPA total score being a significant predictor of maladaptive coping ($\beta = -.344$, $p < .001$). For the Hurricane Katrina survivor sample, the model was significant and explained 8.5% of the variance of the Brief COPE Maladaptive Scale score ($R^2 = .085$, $F(1, 134) = 12.416$, $p = .001$), with the IPPA total score being a significant predictor of maladaptive coping ($\beta = -.291$, $p = .001$) after accounting for hurricane severity as measured by the HURTE.

Hypothesis 3a

To investigate the remaining hypotheses, several mediation analyses were conducted utilizing PROCESS Macro for SPSS. There are three assumptions that must be met for a partial mediation to exist, which are as follows (Hayes, 2009): First, the independent variable, or predictor, must be found to significantly predict the mediator variable (path *a*); second, the mediator must be found to significantly predict the dependent variable (path *b*); third, the previously significant relationship found between the predictor and outcome variable, or total effect (path *c*) is then reduced following the insertion of the mediator (direct effect, path *c'*). The significance of these mediations was determined using Shrout and Bolger's (2002) bootstrapping design consisting of the random sampling of 10,000 cases (i.e., bootstraps) derived from the original sample. Bootstrapping also provided confidence intervals related to the population parameters within the current study. The distribution of estimates were examined within these results, and were determined as significant if $p < .05$. Additionally, the confidence intervals for total effects, direct effects, and indirect effects could not include zero between the lower-limit confidence intervals (LLCI) and upper-limit confidence intervals (ULCI) in order for significance to be achieved.

Hypothesis 3a stated adaptive coping strategies will partially mediate the relationship between parent-child attachment quality and mental health in emerging adults, such that better parent-child attachment quality will be positively associated with adaptive coping strategies, which will in turn be positively associated with mental health. Using PROCESS Macro for SPSS, this test of mediation required conducting a series of multiple regressions as follows: (1) the predictor variable (i.e. IPPA total score) must significantly predict the outcome variable (i.e., DASS-21 total score), (2) the predictor variable (i.e. IPPA total score) must significantly predict the mediator (i.e., Brief COPE adaptive total score), and lastly, (3) the mediator (i.e., Brief COPE adaptive total score) must significantly predict the outcome variable (i.e., DASS-21 total score) while accounting for the predictor variable (i.e., IPPA total score). Prior to adding the Brief COPE Adaptive Scale score as the possible mediator, parent-child attachment quality as measured by the IPPA significantly predicted DASS-21 total score (*path c*; $\beta = -.44, p < .001$). Following the addition of the Brief COPE Adaptive Scale score as a possible mediator, IPPA did not significantly predict Brief COPE Adaptive Scale score (*path a*; $\beta = -.004, p > .05$), Brief COPE Adaptive Scale score significantly predicted DASS-21 total score (*path b*; $\beta = -.27, p < .001$), and the relationship between IPPA and DASS-21 total score was not reduced (*path c'*; $\beta = -.44, p < .001$). Therefore, the assumptions of partial mediation were not met.

Figure 1. Typical sample of emerging adults: Pathways between attachment quality, adaptive coping, and emotional distress.

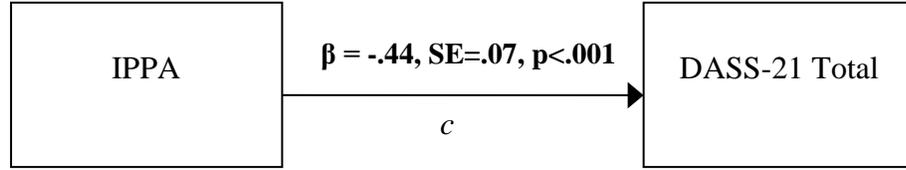


Figure 1a). Direct (unmediated) effects of IPPA on DASS-21 Total.

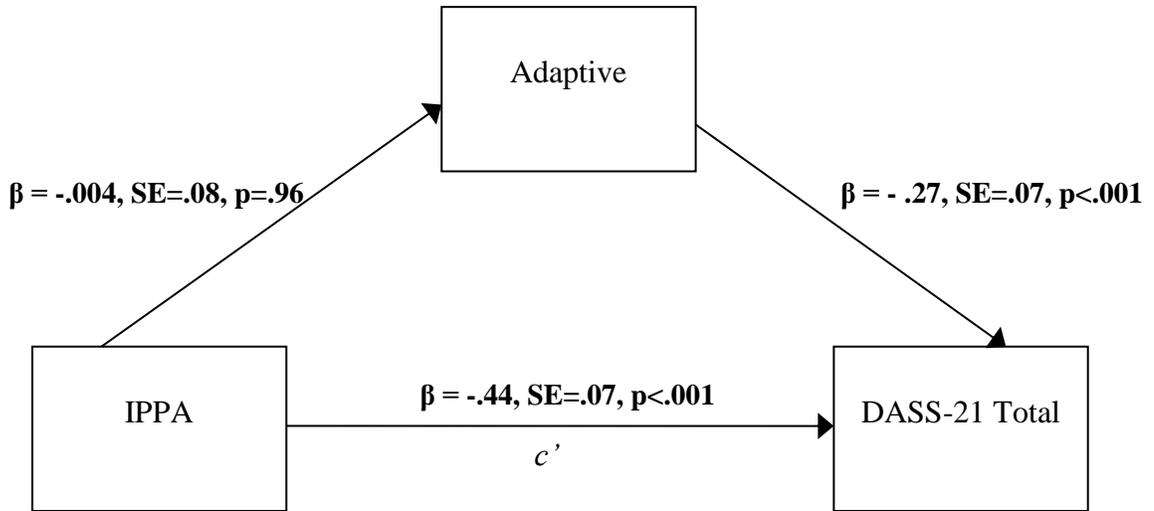


Figure 1b). Mediated Pathway effect of Brief COPE Adaptive Scale score on IPPA and DASS-21 total score.

Note: IPPA = Inventory of Parent and Peer Attachment; Adaptive = Brief COPE Adaptive Scale score; DASS-21 = Depression Anxiety Stress Scales- 21-item version; * $p < .05$, ** $p < .01$

Hypothesis 3b

Hypothesis 3b stated maladaptive coping strategies will partially mediate the relationship between parent-child attachment quality and mental health in emerging adults, such that poorer parent-child attachment quality will positively associated with

maladaptive coping strategies, which will in turn be negatively associated with mental health. Prior to adding the Brief COPE Maladaptive Scale score as the possible mediator, parent-child attachment quality as measured by the IPPA significantly predicted DASS-21 total score (*path c*; $\beta = -.44, p < .001$). Following the addition of the Brief COPE Maladaptive Scale score as a possible mediator, IPPA significantly predicted Brief COPE Maladaptive Scale score (*path a*; $\beta = -.34, p < .001$), Brief COPE Maladaptive Scale score significantly predicted DASS-21 total score (*path b*; $\beta = .56, p < .001$), and the relationship between IPPA and DASS-21 total score was reduced (*path c'*; $\beta = -.25, p < .001$). All assumptions of partial mediation were met, thus Brief COPE Maladaptive Scale significantly partially mediated the relationship between IPPA and DASS-21 total score for the typical sample of emerging adults.

Figure 2. Typical sample of emerging adults: Pathways between attachment quality, maladaptive coping, and emotional distress.

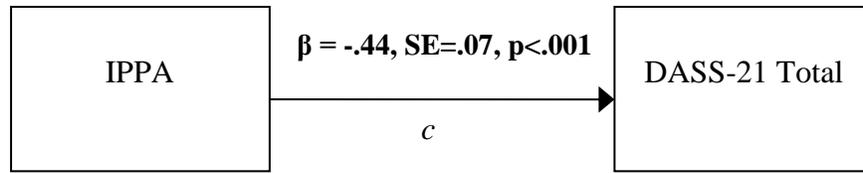


Figure 2a). Direct (unmediated) effects of IPPA on DASS-21 Total.

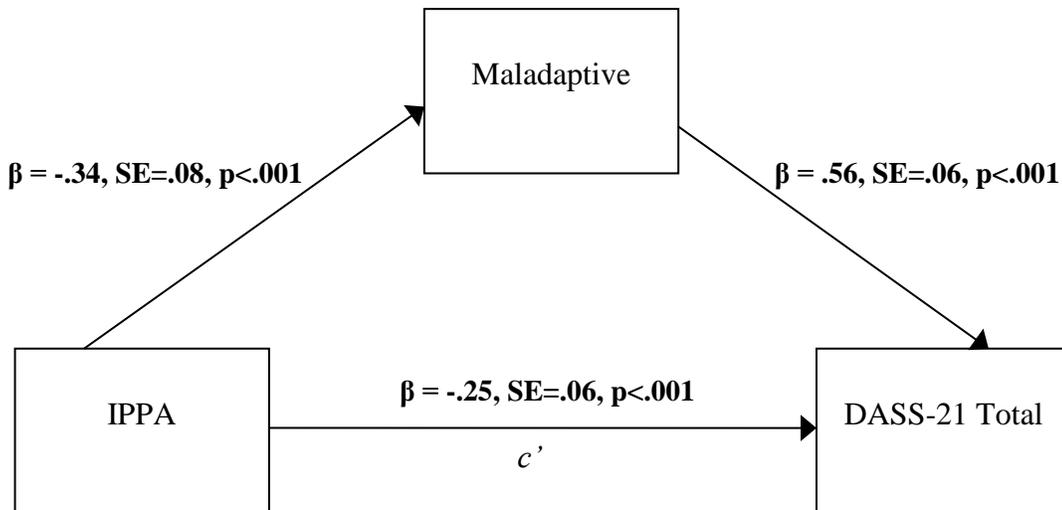


Figure 2b). Mediated pathway demonstrates the role of maladaptive coping as a significant partial mediator of the relationship between IPPA and DASS-21 total score.

Note: IPPA = Inventory of Parent and Peer Attachment; Maladaptive = Brief COPE Maladaptive Scale score; DASS-21 = Depression Anxiety Stress Scales- 21-item version; * $p < .05$, ** $p < .01$

Hypothesis 4a

Hypothesis 4a stated, after accounting for hurricane exposure severity, adaptive coping strategies will partially mediate the relationship between parent-child attachment quality and mental health in emerging adult survivors of Hurricane Katrina, such that

better parent-child attachment quality will be positively associated with adaptive coping strategies, which will in turn be positively associated with mental health. The HURTE total score was included as a covariate to account for hurricane exposure severity. Prior to adding the Brief COPE Adaptive Scale score as the possible mediator, parent-child attachment quality as measured by the IPPA significantly predicted DASS-21 total score (*path c*; $\beta = -.41, p < .001$). Following the addition of the Brief COPE Adaptive Scale score as a possible mediator, IPPA did not significantly predict Brief COPE Adaptive Scale score (*path a*; $\beta = .06, p > .05$), Brief COPE Adaptive Scale score significantly predicted DASS-21 total score (*path b*; $\beta = .25, p = .001$), and the relationship between IPPA and DASS-21 total score was not reduced (*path c'*; $\beta = -.42, p < .001$). Therefore, the assumptions of partial mediation were not met.

Figure 3. Hurricane Katrina survivor sample: Pathways between attachment quality, adaptive coping, and emotional distress.

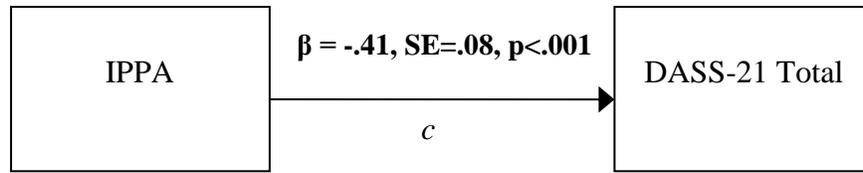


Figure 3a). Direct (unmediated) effects of IPPA on DASS-21 Total.

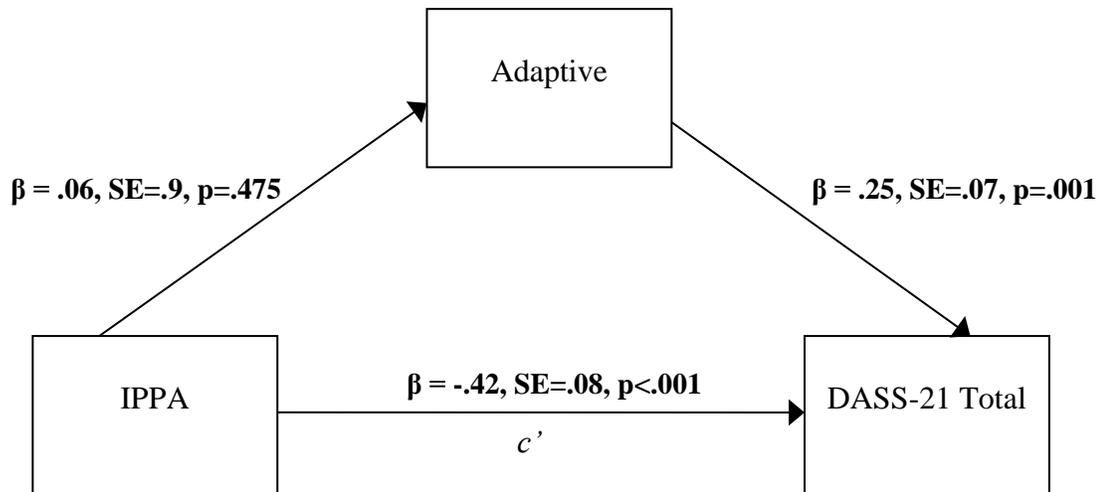


Figure 3b). Mediated Pathway effect of Brief COPE Adaptive Scale score on IPPA and DASS-21 total score.

Note: IPPA = Inventory of Parent and Peer Attachment; Adaptive = Brief COPE Adaptive Scale score; DASS-21 = Depression Anxiety Stress Scales- 21-item version; * $p < .05$, ** $p < .01$

Hypothesis 4b

Hypothesis 4b stated, after accounting for hurricane exposure severity, maladaptive coping strategies will partially mediate the relationship between parent-child attachment quality and mental health in emerging adult survivors of Hurricane Katrina,

such that poorer parent-child attachment quality will positively associated with maladaptive coping strategies, which will in turn be negatively associated with mental health. The HURTE total score was included as a covariate to account for hurricane exposure severity. Prior to adding the Brief COPE Maladaptive Scale score as the possible mediator, parent-child attachment quality as measured by the IPPA significantly predicted DASS-21 total score (*path c*; $\beta = -.41, p < .001$). Following the addition of the Brief COPE Maladaptive Scale score as a possible mediator, IPPA significantly predicted Brief COPE Maladaptive Scale score (*path a*; $\beta = -.13, p < .001$), Brief COPE Maladaptive Scale score significantly predicted DASS-21 total score (*path b*; $\beta = .47, p < .001$), and the relationship between IPPA and DASS-21 total score was reduced (*path c'*; $\beta = -.29, p < .001$). All assumptions of partial mediation were met, thus Brief COPE Maladaptive Scale significantly partially mediated the relationship between IPPA and DASS-21 total score for emerging adult survivors of Hurricane Katrina.

Figure 4. Hurricane Katrina survivor sample: Pathways between attachment quality, maladaptive coping, and emotional distress.

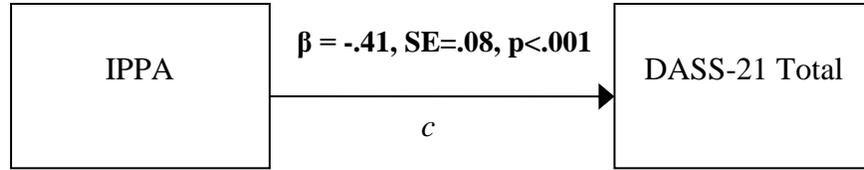


Figure 4a). Direct (unmediated) effects of IPPA on DASS-21 Total.

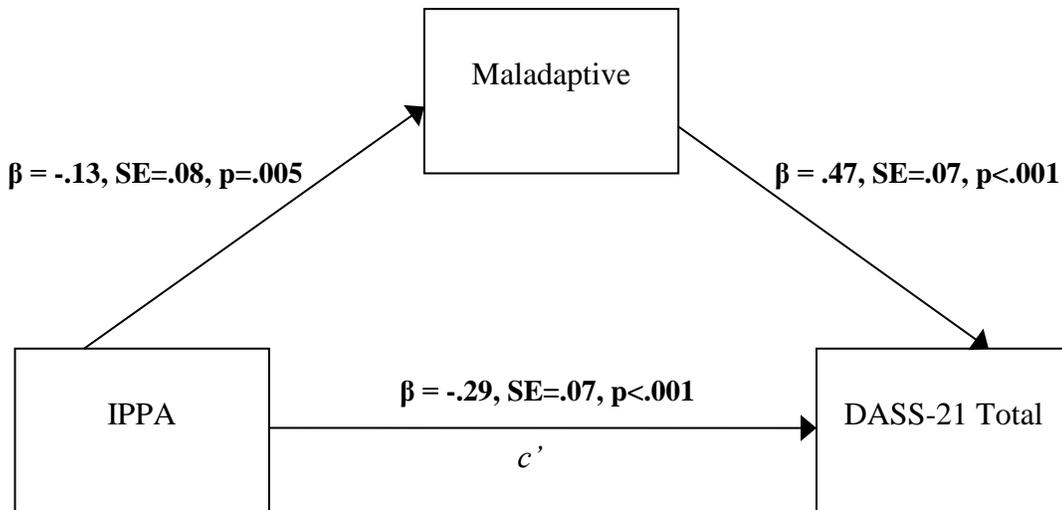


Figure 4b). Mediated pathway demonstrates the role of maladaptive coping as a significant partial mediator of the relationship between IPPA and DASS-21 total score.

Note: IPPA = Inventory of Parent and Peer Attachment; Maladaptive = Brief COPE Maladaptive Scale score; DASS-21 = Depression Anxiety Stress Scales- 21-item version; * $p < .05$, ** $p < .01$

Hypothesis 5a

Hypothesis 5a stated, after accounting for hurricane exposure severity, adaptive coping strategies will partially mediate the relationship between parent-child attachment quality and posttraumatic stress symptoms in emerging adult survivors of Hurricane

Katrina, such that better parent-child attachment quality will be positively associated with adaptive coping strategies, which will in turn be negatively associated with posttraumatic stress symptoms. The HURTE total score was included as a covariate to account for hurricane exposure severity. Prior to adding the Brief COPE Adaptive Scale score as the possible mediator, parent-child attachment quality as measured by the IPPA significantly predicted the PCL-5 total score (*path c*; $\beta = -.29, p = .001$). Following the addition of the Brief COPE Adaptive Scale score as a possible mediator, IPPA did not significantly predict Brief COPE Adaptive Scale score (*path a*; $\beta = .06, p > .05$), Brief COPE Adaptive Scale score significantly predicted PCL-5 (*path b*; $\beta = .26, p = .002$), and the relationship between IPPA and PCL-5 was not reduced (*path c'*; $\beta = -.30, p < .001$). Therefore, the assumptions of partial mediation were not met.

Figure 5. Hurricane Katrina survivor sample: Pathways between attachment quality, adaptive coping, and posttraumatic stress symptoms.

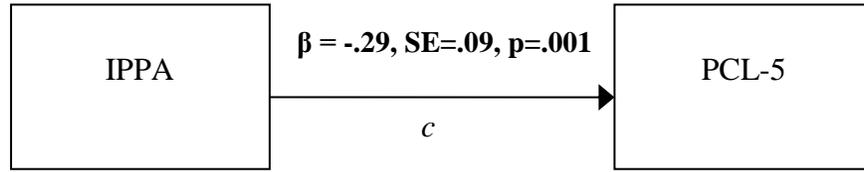


Figure 5a). Direct (unmediated) effects of IPPA on PCL-5.

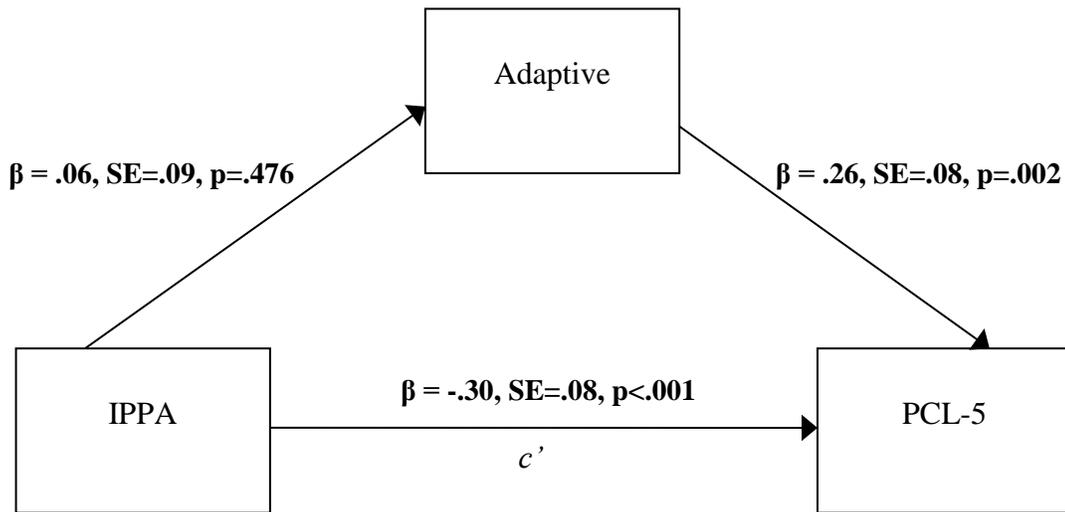


Figure 5b). Mediated Pathway effect of Brief COPE Adaptive Scale score on IPPA and PCL-5.

Note: IPPA = Inventory of Parent and Peer Attachment; Adaptive = Brief COPE Adaptive Scale score; PCL-5 = Posttraumatic Stress Disorder Checklist; * $p < .05$, ** $p < .01$

Hypothesis 5b

Hypothesis 5b stated, after accounting for hurricane exposure severity, maladaptive coping strategies will partially mediate the relationship between parent-child attachment quality and posttraumatic stress symptoms in emerging adult survivors of Hurricane Katrina, such that better parent-child attachment quality will be negatively

associated with maladaptive coping strategies, which will in turn be positively associated with posttraumatic stress symptoms. The HURTE total score was included as a covariate to account for hurricane exposure severity. Prior to adding the Brief COPE Maladaptive Scale score as the possible mediator, parent-child attachment quality as measured by the IPPA significantly predicted the PCL-5 total score (*path c*; $\beta = -.29, p = .001$).

Following the addition of the Brief COPE Maladaptive Scale score as a possible mediator, IPPA significantly predicted Brief COPE Maladaptive Scale score (*path a*; $\beta = -.24, p = .005$), Brief COPE Maladaptive Scale score significantly predicted PCL-5 (*path b*; $\beta = .48, p < .001$), and the relationship between IPPA and PCL-5 was reduced (*path c'*; $\beta = -.17, p = .029$). All assumptions of partial mediation were met, thus Brief COPE Maladaptive Scale significantly partially mediated the relationship between IPPA and PCL-5 total score for emerging adult survivors of Hurricane Katrina.

Figure 6. Hurricane Katrina survivor sample: Pathways between attachment quality, maladaptive coping, and posttraumatic stress symptoms.

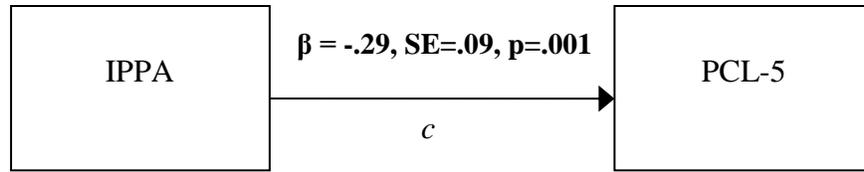


Figure 6a). Direct (unmediated) effects of IPPA on PCL-5.

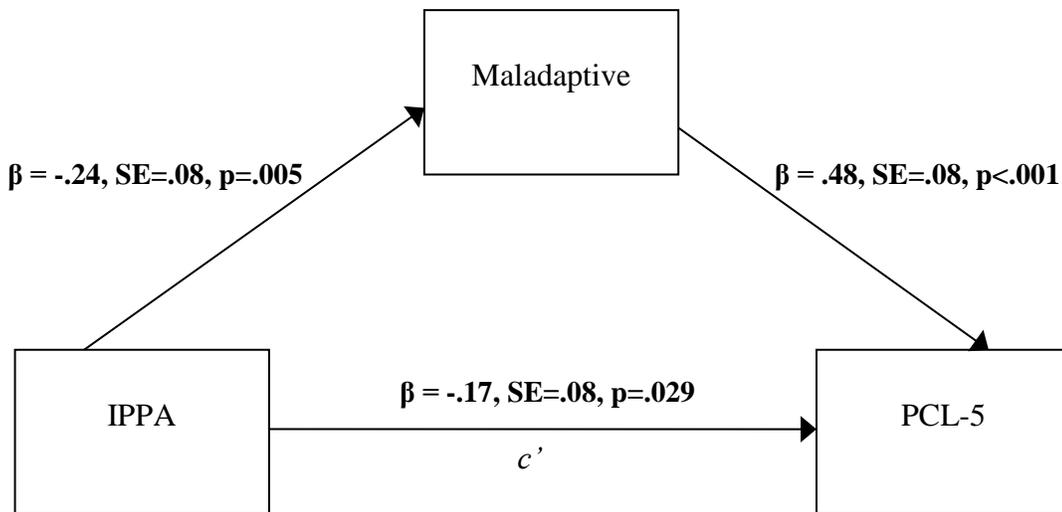


Figure 6b). Mediated pathway demonstrates the role of maladaptive coping as a significant partial mediator of the relationship between IPPA and PCL-5 total score.

Note: IPPA = Inventory of Parent and Peer Attachment; Maladaptive = Brief COPE Maladaptive Scale score; PCL-5 = Posttraumatic Stress Disorder Checklist; * $p < .05$, ** $p < .01$

CHAPTER IV – DISCUSSION

Hurricane Katrina, considered to be one of the worst natural disasters to occur in the United States, had severe long-term psychological impacts on some, but not all of the children exposed to disaster-related trauma (McGloin & Widom, 2001). In an effort to increase understanding about the impact of Hurricane Katrina-related trauma, the current study sought to examine the relationship between mental health, parent-child attachment quality, and coping strategies for emerging adult survivors of Hurricane Katrina. Furthermore, the partial mediating role of coping strategies between parent-child attachment quality and mental health for emerging adult survivors of Hurricane Katrina and typically-developing emerging adults was examined. To the researcher's knowledge, prior to the current study, these variables had not yet been investigated for emerging adults who had not experienced Hurricane Katrina; therefore, data was collected for a sample of such individuals to form a normative sample for comparison.

Adaptive coping was not associated with parent-child attachment quality; however, maladaptive coping was found to be significantly negatively correlated with attachment quality for both samples. Also, as expected, adaptive coping was negatively associated with emotional distress and PTSS, while maladaptive coping was positively associated with both mental health variables. Adaptive coping was not found to be a partial mediator of the relationship between parent-child attachment quality and emotional distress or PTSS for either sample. In contrast, maladaptive coping *was* found to be a significant partial mediator of the relationship between parent-child attachment quality and emotional distress for both the Hurricane Katrina survivor sample and typical sample. As predicted for the Hurricane Katrina survivor sample, maladaptive coping was

found to be a significant partial mediator of the relationship between parent-child attachment quality and PTSS after accounting for hurricane exposure severity.

Hypothesis 1

The first hypothesis focused on the impact of parent-child attachment quality on the use of adaptive coping strategies. In contrast to the hypothesis and previous research, there was no association found between attachment quality and adaptive coping for either sample.

The non-significance of these findings may be due to the varied conceptualization of the adaptive coping construct in the Brief COPE measure. The Brief COPE included several scales which ranged from self-distraction to religion and included the strategy of humor in the Adaptive Scale, which was comprised of the items “I’ve been making jokes about it” and “I’ve been making fun of the situation”. It is unclear the extent to which use of humor in certain circumstances can be construed as adaptive. Maladaptive humor includes aggressive or self-defeating jokes and has been found to be associated with an increase in expression of anger towards others and anger suppression (Torres-Marin, Navarro-Carretero-Dios, 2018). Several studies which utilized the Brief COPE measure found similar results as the current study, with the Adaptive Scale not having significant associations with other variables (Blomgren, Syahn, Astrom, & Ronnlund, 2016).

Hypothesis 2

The aim of the second hypothesis was to examine the effect of parent-child attachment quality on maladaptive coping in both samples of emerging adults. Diamond and Siqueland (1995) theorized that adolescents who perceive their relationship with their parents to be of lower quality have an increased likelihood of internalizing behaviors.

For adolescents and emerging adults, poorer attachment quality has been associated with increases in oppositional defiance, aggression, and delinquency (Andretta et al., 2015; Hoeve et al., 2012). In the current study, maladaptive coping was found to be significantly negatively correlated with attachment quality for the Hurricane Katrina survivor sample as well as the typical sample. Furthermore, attachment quality was found to be predictive of maladaptive coping for both samples.

The items in the IPPA measure assess attachment quality through the three dimensions of trust, communication, and alienation. The present study's findings indicate the less trust and communication and more alienation that exists between the caregiver and their emerging adult child, the more frequently the emerging adult will use maladaptive coping. The most frequently utilized maladaptive coping strategies reported by both samples were self-distraction and self-blame. Bowlby (1969) proposed that the development of an individual's coping strategies is influenced by attachment style and Seiffge-Krenke and Beyers (2005) also theorized that aspects of attachment continue to shape coping well into adulthood (Prinstein, La Greca, Vernberg, & Silverman, 1996). The decreased trust and communication characteristic of poor attachment quality may potentially lead to the child developing the maladaptive coping skills of self-distraction and self-blame and reinforce their continued use of the strategies into emerging adulthood.

Attachment quality is influenced by the behaviors of both the parent and child, so this relationship found between attachment quality and maladaptive coping may be similar to the reciprocal relationship frequently found between child temperament and attachment quality. A child with negative temperament traits can cause feelings of

frustration, rejection, and failure in parents, which could hinder and diminish the quality of attachment between parent and child (Johnson, 2013). The finding that there is relationship between attachment quality and maladaptive coping could potentially be similarly reciprocal, such that just as poorer attachment quality is predictive of maladaptive coping, an emerging adult frequently utilizing maladaptive coping may negatively impact the quality of attachment with their caregiver.

Hypothesis 3a

Hypothesis 3a concerned the potential mediating role of adaptive coping in the relationship between attachment quality and emotional distress in the emerging adults in the typical sample. Studies conducted thus far have found that the dimensions of attachment quality profoundly affect the social-emotional functioning and mental health of emerging adults (Andretta et al., 2015). In comparison to emerging adults with low attachment quality, those with high attachment quality have been found to report increased satisfaction with life, seek out social support more frequently, and experience less distress in response to life events (Armsden & Greenberg, 1987). Furthermore, better attachment quality has been associated with improved emotional and academic adjustment (Rice, Fitzgerald, Whaley, & Gibbs, 1995; Vivona, 2000). There is ample evidence to suggest that attachment quality is related to mental health outcomes in emerging adults; however, the mechanism by which this occurs has not been fully explored. Adaptive coping was found to be predictive of emotional distress; however, contrary to the hypothesis attachment quality was not predictive of adaptive coping and thus did not mediate the relationship. As thought with the non-significant result related to adaptive coping in hypothesis 1, the Brief Cope measure's conceptualization of

adaptive coping seems to include coping strategies that could be used adaptively or maladaptively and may therefore not be an accurate representation of adaptive coping (Mahmoud et al., 2012). Also, it may be possible for a parent-child attachment perceived as being higher quality to potentially have negative impacts on the child's development of adaptive coping strategies. For example, parents high in warmth may also be overprotective, which may lead to strong parent-child relationships while the overprotection hinders children's development of adaptive coping (Sergin, Woszildo, Givertz, Bauer, & Murphy, 2012). The most frequently used adaptive coping strategies reported by the sample were active coping, positive reframing, planning, and acceptance.

Hypothesis 3b

Maladaptive coping was hypothesized to partially mediate the relationship between parent-child attachment quality and emotional distress in the emerging adults in the typical sample of emerging adults. Previous research has found maladaptive, or emotion-focused, coping to be predictive of several types of psychopathology, including depression and anxiety (Valiente, Fabes, Eisenberg, & Spinrad, 2004). The current study found maladaptive coping to be a significant partial mediator in the relationship between attachment quality and emotional distress, thus confirming the hypothesis. These findings suggest the negative relationship between attachment quality and maladaptive coping may be one mechanism by which the relationship between attachment quality and emotional distress is explained. The significance of the maladaptive coping mediation in comparison to the non-significance of the adaptive coping mediation may indicate parent-child attachment quality has a more pronounced effect on children's development and utilization of maladaptive coping strategies than adaptive coping.

Hypothesis 4a

In light of Lazarus and Folkman's (1984) theory that adaptive coping strategies neutralize the negative effects of stress, while also fostering psychological well-being, adaptive coping was hypothesized to partially mediate the relationship between parent-child attachment quality and emotional distress in the emerging adults in the Hurricane Katrina survivor sample. Contrary to the hypothesis, after accounting for hurricane exposure severity as a covariate, adaptive coping was not significantly predicted by attachment quality and therefore not a mediator in the relationship. This non-significant association between attachment quality and adaptive coping was also found for the typical sample of emerging adults in the present study, which suggests there may be other aspects of the parent-child relationship that are more influential on adaptive coping development than the factors of trust, communication, and alienation comprising the attachment quality construct. Also, these findings may indicate there are other factors outside of the parent-child attachment with stronger influences on emerging adults' utilization of adaptive coping, such as peers (Sergin, Woszildo, Givertz, Bauer, & Murphy, 2012). The most frequently used adaptive coping strategies reported by the sample were active coping, positive reframing, acceptance, and religion.

Hypothesis 4b

Maladaptive coping was hypothesized to partially mediate the relationship between parent-child attachment quality and emotional distress in the emerging adults in the Hurricane Katrina survivor sample. Results indicated maladaptive coping was a significant mediator of the relationship. In the weeks following Hurricane Katrina, teenage survivors were previously found to use avoidant coping behaviors, which was

associated with development of psychopathology (Pina et al., 2008). However, this relationship had previously only been minimally examined in adolescents transitioning to emerging adulthood. In the present study, the maladaptive coping mechanism reported to be most frequently used by the Hurricane Katrina survivor sample was self-distraction. These findings indicate the survivors are utilizing avoidant coping behaviors as emerging adults, and the use of these strategies is positively associated with emotional distress.

Hypothesis 5a

Hypothesis 5a concerned the potential mediating role of adaptive coping in the relationship between attachment quality and PTSS in the emerging adults in the Hurricane Katrina survivor sample. In children and adults, secure attachment has been repeatedly associated with healthy and effective coping strategies, whereas the insecure attachment styles have been found to be predictive of the use of maladaptive and ineffective coping strategies (Salloum & Lewis, 2010). After accounting for hurricane exposure severity as a covariate, adaptive coping did not partially mediate the relationship, contradicting the hypothesis. As with the current study's other non-significant findings involving the relationship between adaptive coping and attachment quality, this result may be related to the Brief COPE measure's conceptualization of adaptive coping or indicative of other parent-child attachment factors playing a more influential role in the development of adaptive coping.

Hypothesis 5b

Maladaptive coping was hypothesized to partially mediate the relationship between parent-child attachment quality and PTSS in the emerging adults in the Hurricane Katrina survivor sample. Coping styles were thought by Lazarus and Folkman

(1984) to affect how individuals react to traumatic experiences. Several studies have supported this theory, with findings that those who were evaluated to have high levels of maladaptive coping prior to experiencing trauma were at a higher risk for developing PTSD symptoms (Gil, 2005; Nielson, 2003). The present study found maladaptive coping to be a partial mediator of the relationship between attachment quality and PTSS, supporting the hypothesis and previous research.

These findings support previous research where parents with PTSS have been found to report their symptoms significantly interfere with their parenting behaviors, which harms attachment quality. A parent's positive response to their child's negative emotions are thought to facilitate learning about coping, while a negative parental response may discourage emotional expression and impede the child's learning about coping and adaptation abilities (Valiente, Lemery-Chalfant, & Swanson, 2008). Considering attachment involves a reciprocal relationship between parent and child, it is possible the PTSS reported by emerging adults in the current study has negatively impacted the attachment quality with their caregiver making the relationship between attachment quality and PTSS reciprocal. The maladaptive coping reported in the present study by the emerging adult Hurricane Katrina survivors may also have potentially harmed their parent-child attachment quality.

Limitations

The present study found significant results which both support and build upon previous research; however, the study has several limitations. The retrospective nature of the parent-child attachment quality and hurricane exposure measures must be taken into account when considering the validity of the results. Retrospective self-reports involving

parenting have previously been found to have questionable validity (Alloy, Abramson, Smith, Gibb, & Neeren, 2006). While a longitudinal study design would be preferable, it should be noted that the participants' retrospective reports were representative of their perceptions and clinically the perception of experience tends to have a more significant impact on mental health in comparison to memory accuracy (Maxwell & Huprich, 2014).

The generalizability of the results is another potential limitation. While the current study included two samples differing in Hurricane Katrina exposure, all of the participants were undergraduate students enrolled at a university in the southeastern United States. Most undergraduate students would be considered to be generally higher functioning with potentially fewer or less severe mental health issues, along with having a higher socioeconomic status. The samples utilized in the current study may not be representative of other emerging adults with different demographics. Additionally, over half of both samples were comprised of female participants, making generalizability of the results to emerging adult males a concern.

The findings between the two samples were much more similar than anticipated. There are several unknown factors about the participants of both samples that makes the similar results found for the mediation analyses for the Hurricane Katrina survivor sample and typical sample of emerging adults difficult to explain. Questions about the amount of trauma experienced by the typical sample would have been beneficial to include in the questionnaire, as a similar amount of trauma experienced as the Hurricane Katrina survivor sample may be related to the similarly high DASS-21 scores between the samples. Additionally, the similarity in the samples' results may be reflective of the stress and anxiety frequently reported by emerging adults enrolled in college at this

developmental stage (Mahmoud et al., 2015). For the Hurricane Katrina survivor sample, questions about previous mental health issues experienced prior to Hurricane Katrina and any mental health treatment received following the hurricane would have been beneficial information to include in the questionnaire and analyses. While the HURTE measure was included to assess hurricane exposure severity and the PCL-5 assessed PTSS specific to the Hurricane, because of the study's design the extent to which the Hurricane-related trauma still impacts the participants is unclear.

Areas for Future Research

Future research should continue to examine parent-child attachment quality, as significant associations have been found between the construct and numerous child outcome variables. More specifically, additional research needs to be conducted investigating attachment quality within the context of trauma. Few studies have investigated the impact of various traumas on attachment quality and the potential long-term impact this may have on child mental health outcomes. While the IPPA is widely accepted and used as a measure of attachment quality, development of additional measures for examining attachment quality would also be beneficial.

Further investigation into the relationships between attachment quality, coping, and mental health is needed. Given the significant findings of the present study for both samples, it is clear that the role of these variables in emerging adulthood is an important avenue for continued research. The dynamic and potentially reciprocal relationships that exist between these variables need to continue to be examined, because information gained from this research could aid in the development of interventions designed to identify youth at risk of developing and using primarily maladaptive coping strategies

and being at an increased risk of psychopathology (Gil, 2005; Nielson, 2003).

Additionally, future information gained about attachment quality could help guide parenting interventions for improving parent-child attachment quality (Valiente, Lemery-Chalfant, & Swanson, 2008).

The relationship between attachment quality, mental health, and adaptive coping remains unclear. The Brief COPE measure utilized in the present study to examine adaptive coping included the scale of humor which could also be used maladaptively. Future comparison of use of a different coping measure in examining the relationship could be beneficial. Additionally, exploration into the possible reasons behind the finding of attachment quality not being predictive of adaptive coping is needed.

The hurricane exposure measure utilized in the present study was very helpful and has been used in several other studies involving hurricane trauma; however, the HURTE measure is not as comprehensive as what might be desired for use in statistical analyses. Natural disasters are occurring more frequently and impact millions of people. Comprehensive disaster specific measures should continue to be developed in the near future as they would provide crucial information on the trauma experienced during the disaster.

Conclusions

The present study found parent-child attachment quality to be predictive of the utilization of maladaptive coping strategies in emerging adult survivors of Hurricane Katrina and also emerging adults with no exposure to the hurricane. As predicted, maladaptive coping was found to be a significant partial mediator of the relationship between attachment quality and both emotional stress and PTSS. Contradictory to

hypotheses, adaptive coping as measured by the Brief COPE was not associated with attachment quality and did not mediate the relationship between attachment quality and emotional distress or PTSS. The non-significant findings involving adaptive coping may be attributable to the Brief COPE measure's conceptualization of the construct. Future research should address the limitations of the current study, along with continuing to investigate the dynamic relationship between attachment quality, coping, and mental health in the context of natural disaster related trauma.

APPENDIX A — Electronic Informed Consent

PURPOSE: The present study seeks to better understand the relationship between parenting and mental health outcomes in emerging adulthood.

DESCRIPTION OF STUDY: The present study will consist of completing several brief questionnaires through a secure web portal via the internet. Completion of the study should take approximately 30 minutes, and participants will receive .5 points of SONA credit. SONA points will only be given to participants who have completed the survey in its entirety, and have answered honestly.

BENEFITS: There are no direct benefits expected for participants within the current study. However, the researchers intend for this study to expand the knowledge related to parental behavior and mental health outcomes in emerging adulthood survivors of Hurricane Katrina.

RISKS: There are no foreseeable risks associated with the current study, beyond those already present in routine daily life. If any questionnaire material evokes distress during the completion of this study, participants should contact the researcher with concerns immediately.

CONFIDENTIALITY: You will state your name on the informed consent form. All data collected from the study will be stored in aggregate form with no identifying information to ensure confidentiality. Data will be stored in a secure location for six (6) years, after which time it will be destroyed.

PARTICIPANT'S ASSURANCE: This project has been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research participant should be directed to the Chair of the Institutional Review Board, The University of Southern Mississippi, Box 5147, Hattiesburg, MS 39406, (601) 266-6820. Participation in this project is completely voluntary, and participants may withdraw from this study at any time without penalty, prejudice, or loss of benefits. Questions concerning the research should be directed to the primary researcher Alexandra Teller (Alexandra.teller@usm.edu) or the research supervisor, Dr. Bonnie Nicholson (Bonnie.nicholson@usm.edu).

If you experience distress as a result of your participation in this study, please notify the primary researcher Alexandra Teller (Alexandra.teller@usm.edu) or the research supervisor, Dr. Bonnie Nicholson (Bonnie.nicholson@usm.edu). A list of available agencies that may be able to provide services for you are provided below:

Community Counseling and Assessment Clinic (601) 266-4601
Student Counseling Services (601) 266-4829
Pine Belt Mental Healthcare (601) 544-4641

Forrest General Psychology Service Incorporated (601) 268-3159

Consent is hereby given to participate in this study.

APPENDIX B – IRB Approval Letter



INSTITUTIONAL REVIEW BOARD

118 College Drive #5147 | Hattiesburg, MS 39406-0001

Phone: 601.266.5997 | Fax: 601.266.4377 | www.usm.edu/research/institutional.review.board

NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months.
Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 17101711

PROJECT TITLE: Natural Disasters and Attachment Quality: The Mediating Role of Coping

PROJECT TYPE: New Project

RESEARCHER(S): Alexandra Teller

COLLEGE/DIVISION: College of Education and Psychology

DEPARTMENT: Psychology

FUNDING AGENCY/SPONSOR: N/A

IRB COMMITTEE ACTION: Expedited Review Approval PERIOD

OF APPROVAL: 10/23/2017 to 10/22/2018

Lawrence A. Hosman, Ph.D.

Institutional Review Board

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