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# The Roles of Stress Appraisal and Self-Efficacy in Fostering Resilience to Improve Psychosocial Outcomes Following Negative Life Events Among College Students: A Multiple Mediation Analysis

Jennifer Anne Cody

*University of Tennessee - Knoxville, jbecker4@utk.edu*

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Sherry K. Bain, Major Professor

We have read this dissertation and recommend its acceptance:

Christopher H. Skinner, Jeannine R. Studer, John W. Lounsbury

Accepted for the Council:

Dixie L. Thompson

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

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The Roles of Stress Appraisal and Self-Efficacy in Fostering Resilience to Improve Psychosocial  
Outcomes Following Negative Life Events Among College Students:  
A Multiple Mediation Analysis

A Dissertation Presented for the  
Doctor of Philosophy  
Degree  
The University of Tennessee, Knoxville

Jennifer Anne Cody  
August 2013

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## **Dedication**

This dissertation is dedicated to my wonderful husband Michael and our little princess Addisyn  
for all of your unconditional love, strength, and motivation.

“I can do all things through Him who strengthens me.”

– Philippians 4:13

## **Acknowledgements**

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## Abstract

The purpose of this dissertation study was to explore the interrelationships between stress appraisal, self-efficacy, and psychosocial outcomes (i.e., resilience and self-concept) within the context of negative life events among college students. Participants (n = 220) were undergraduate students enrolled at a large southeastern university. Study participants completed the *Life Experiences Survey* (Sarason et al., 1978), the *General Self-Efficacy Scale* (Sherer et al., 1982), the *Connor-Davidson Resilience Scale* (Connor & Davidson, 2003), the *Multidimensional Self-Concept Scale* (Fleming & Courtney, 1984), and the *Perceived Stress Scale* (Cohen et al., 1983). Two hypothesized models of multiple mediation were proposed to explain the relationships between these variables. Model 1 examined the relationship between negative life change and resilience as mediated by stress appraisal and self-efficacy. Model 2 examined the mediating relationship between negative life change and self-concept through stress appraisal and self-efficacy. The path coefficients for the models were estimated through Ordinary Least Squares regression using the INDIRECT SPSS macro with bootstrapping procedures (Preacher & Hayes, 2008). Significant indirect effects were found for stress appraisal and self-efficacy in both models. Results support a mediating relationship between negative life change and psychosocial outcomes through stress appraisal and self-efficacy. Future research recommendations and implications including potential interventions are discussed.

**Key words:** Stress appraisal, self-efficacy, life events, resilience, self-concept, coping

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## **Chapter 1**

### **Introduction**

Most people are exposed to at least one violent or life-threatening situation during the course of their lives, while others experience a multitude of traumatic events (Ozer, Best, Lipsey, & Weiss, 2003). Several large-scale studies have found high rates of traumatization among college students and adults, most commonly the unexpected death of a close friend or loved one and natural disasters (Brown et al., 2012; Frazier et al., 2009; Sandberg, Suess, & Heaton, 2010). Traumatic events may lead to the deterioration of psychological functioning, resulting in depression, anxiety, anger, aggressive behavior, suicidal ideation, poor academic performance, and maladaptive coping skills (Bosworth, Espelage, & Simon, 1999; Kaltiala-Heino, Rimpela, Rantanen, & Rimpela, 2000; Kochenderfer-Ladd & Skinner, 2002; Neary & Joseph, 1994; Olweus, 1994; Turner, Finkelhor, & Ormrod, 2010b). Risk factors that may render an individual more vulnerable to these negative outcomes are a central focus in existing literature. However, only recently have researchers begun to emphasize the need to understand the pathways and processes that lead to recovery following trauma. From infancy through adulthood, everyone experiences life-changing events. Why then are some individuals able to successfully adapt during stressful periods, while others are subject to deleterious effects as a result of adversity?

Researchers have suggested that the key to maintaining equilibrium following traumatic experiences is resilience (Bonanno, 2004; Compas, Hinden, & Gerhardt, 2005; Masten et al., 1999). According to Bonanno (2004), resilience is the ability to adapt positively to adverse events and involves the capability to maintain a stable equilibrium, despite external chaos. Similarly, Luthar (1991) describes resilience as a process of developing competence and positively adapting to situations despite significant adversity and threats. According to Lazarus

(1966), events themselves are not threatening or stressful, instead he proposed that it is one's appraisal of the experience that creates stress. These stress appraisals are self-evaluations of the degree of threat in one's environment (Lazarus, 1966). Individuals with higher levels of perceived stress generally find their lives unpredictable, uncontrollable, and overburdened (Cohen, Kamarck, & Mermelstein, 1983).

Rutter (1985) described resilient individuals as possessing high self-confidence and self-efficacy, a positive self-concept, and prosocial coping strategies. Self-efficacy regulates functioning across and within domains (e.g., academic or social) through cognitive, motivational, affective, and decisional processes (Bandura, Barbaranelli, Caprara, & Pastorelli, 1999; Benight & Bandura, 2004). Self-efficacy promotes perseverance in the face of adversity through the perception of control; we perceive ourselves as capable of success in certain situations, which leads to envisioning and achieving desired outcomes. Thus, self-efficacy conceivably provides the means of accessing advantageous coping mechanisms during times of stress (Bandura & Adams, 1977).

### **Purpose of the Current Study**

In order to develop effective interventions to promote psychosocial well-being following stressful life events, it is necessary to understand both the types and perceived severity of such experiences. We must also compile the coping skills and processes that seem to promote well-being and recovery following negative life events. The purpose of my dissertation study is to understand the pathways between stressful life events and psychosocial outcomes in college students. I am proposing that stress appraisal and self-efficacy will mediate the impact of negative life-changing events on psychosocial outcomes, such as resilience and self-concept. In other words, stress appraisal and self-efficacy are potential processes that may help us to

understand how experiencing negative life events are connected to changes in resilience and self-concept.

According to Kumpfer (1999) prevention programs for at-risk youth could be improved by including a focus on increasing resilience; however, designing prevention programs to increase resilience is difficult due to issues surrounding the construct of resilience. One impediment to designing programs to strengthen resilience is that there is a lack of consensus in the literature regarding how to define and measure the construct of resilience. Until we reach a consensus, implementing successful interventions to improve resilience will remain problematic. Due to this difficulty in operationalizing resilience, psychosocial functioning in the current study is constructed to include both a measure of resilience and a measure of self-concept. Self-concept is regarded as a contributing factor to social competence and resilience (Rutter, 1979, 1985).

An alternative to developing interventions directly aimed at improving psychosocial resilience is to develop strategies aimed at strengthening the coping processes and factors that mediate the pathway between traumatization and later psychosocial functioning. In fact, researchers have proposed that stress appraisal following traumatic events may be more predictive of poor psychological functioning than the experiences themselves (Cohen, et al., 1983; Lazarus & Folkman, 1984; Lazarus, 1991). Therefore, if results of the current study were to show that stress appraisal is a mediates process in the relationship between negative life events and psychosocial outcomes, interventions could be developed to decrease stress appraisal as a means of strengthening resilience.

Hamill (2003) suggested that self-efficacy is another possible mediating process related to resilience. Researchers have implemented effective interventions aimed at improving self-

efficacy in both children and adults (Hyde, Hankins, Deale, & Marteau, 2008; Kvarme et al., 2010). For this reason, if results of this study were to reveal that self-efficacy does in fact mediate the relationship between life-events and resilience, then interventions geared to increase self-efficacy could be used to help individuals of all ages to become more resilient.

The following sections will provide an overview of the constructs of self-efficacy and stress appraisal in relation to life events, traumatization, resilience, and self-concept. A broad history of the literature on stress, coping, trauma, and life events will be presented; followed by a discussion of the impact of stressful life events on psychosocial outcomes throughout the course of development. The coping processes thought to play a role in the relationship between stress appraisal, self-efficacy, and adjustment will be discussed, including an overview of the theoretical models proposed to explain the relationship between self-efficacy, stress, and coping. The concepts of psychosocial outcome and competence will be discussed including resilience and self-concept in relation to coping and recovery processes.



## **Chapter 2**

### **Literature Review**

Childhood and adolescence are transitional periods, often involving significant stressors, crises, and developmental changes. Therefore, early research on life events and stress once largely focused around child and adolescent populations (Fox, Halpern, Ryan, & Lowe, 2010). Emphasis was predominantly placed on problematic outcomes and the factors responsible for predicting these outcomes (Garmezy, 1985; Sugland, Zaslow, & Nord, 1993). Similarly, the prevailing models of resilience in the 1980's and 1990's centered on the interactions between protective mechanisms (e.g., family cohesion), risk factors (e.g., socioeconomic status), and stressors (parental divorce), and how these interactions function to increase or decrease vulnerability to negative outcomes (Garmezy, Masten, & Tellegen, 1984; Rutter, 1987).

For several years, researchers continued to focus on identifying individual, family, demographic, economic, and social characteristics of “at-risk youth.” Sugland et al. (1993) defined “at-risk youth” as adolescents with a high likelihood of experiencing adverse life events due to having certain characteristics found to predict vulnerability. Around the same time, research and theories surrounding family stress were emerging independent of the literature on individual stress (McCubbin, et al., 1980). In both of these areas, the focus began to slowly shift away from risk and vulnerability factors to a focus on individual and family strengths, and the coping strategies involved in the process of resilience (McCubbin & Patterson, 1983; McCubbin & McCubbin, 1993). The following sections will discuss the current research related to life events, trauma, and stress.

## **Life Events and Traumatization**

Traumatization signifies the individual has been subjected to some type of psychological trauma or has experienced adverse emotions in response to negative life events. Life events are defined as any significant change in an individual's circumstances that are likely to affect the individual's subsequent behavior and functioning (Banyard & Cantor, 2004; de Meuse, 1985; Frazier et al., 2009). These changes include both positive experiences (e.g., marriage, beginning college, becoming closer with a family member) and negative experiences (e.g., death of a loved one, failing a course, financial difficulties); however, the impact of an event is largely subjective to the individual's perception of the experience (Sarason, Johnson, & Siegel, 1978; Updegraff & Taylor, 2000).

Whether an individual perceives an experience as having a positive or negative impact on his or her life may be based on a variety of factors such as relationship status, financial status, or age at the time of an event (Sarason et al., 1978). Another factor influencing one's perception of a life event is the predictability of the event. The perceived controllability of life events is important in coping with the experience. Unexpected events (e.g., natural disasters, sudden death of a loved one) are more commonly associated with higher levels of stress than common, anticipated events (Schwarzer & Schulz, 2002). Thus, the same type of event (e.g., having a baby) may impact individuals differently based on whether the event was expected by the individual.

Recently, research on effects of life events and stressors has split into separate domains in the literature. Studies have examined military traumatization, traumatization by natural disasters and terrorism attacks, spousal bereavement, interpersonal traumatization (i.e., criminal victimizations), and general life hassles and events (Benight & Bandura, 2004). One of the

larger domains of research has developed around interpersonal traumatization (i.e., victimization) and psychological maladjustment during childhood and adolescence.

**Interpersonal Traumatization Experiences.** Researchers have demonstrated through studies on interpersonal traumatization that victimized individuals are often recurrent targets of aggressive and violent behaviors (Kochenderfer-Ladd & Skinner, 2002). Victimization studies have largely focused on the types of victimization experienced (i.e., verbal, physical, sexual, and emotional assaults; neglect; witnessing violence), and the contexts in which they occur (i.e., school, home, community). In a recent study on victimization, Turner, Finkelhor, and Ormrod (2010a) found that the compounding effects of multiple-context victimizations were more detrimental to an individual's psychological functioning than chronic victimization of a single, even serious type (e.g., sexual assault or physical abuse). This study found that experiencing multiple traumatic events was associated with deficits in social and emotional coping processes. It suggests that coping strategies play an important role in recovery from victimization. The results of related studies substantiated the notion that individuals who experience multiple-context victimization are more vulnerable to subsequent adverse outcomes (Felix, Furlong, & Austin, 2009; Holt, Finkelhor, & Kantor, 2007).

Holt et al. (2007) found that adolescents who experienced multiple-context victimizations (e.g., verbal abuse at home and bullying at school) were at the highest risk of later psychological maladjustment problems as well as poor academic functioning when compared to several other groups of victimized adolescents. In this study, there were three main groups: a peer-victimized group (i.e., those primarily victimized by peers), a multiple-victimization group (i.e., those victimized by different aggressors across multiple settings), and a low-victimization group. Holt et al. found that the group of adolescents who experienced multiple-context victimizations was at

the highest risk of academic failure, more so than the primarily peer-victimized children. This study lends support for research exploring processes of recovery for child and adolescent victims, such as studies examining the variables that mediate the relationship between victimization and psychological maladjustment.

Researchers have found that trauma and stressful experiences play a role in a multitude of negative psychological outcomes including depression, anxiety, and PTSD (Schwarzer & Schulz, 2002; Smyth, Hockemeyer, Heron, Wonderlich, & Pennebaker, 2008; Updegraff & Taylor, 2000). Researchers investigating interpersonal trauma have linked victimization with later problems in psychological and academic functioning, which have significantly added to the overall body of literature. Even so, the factors and processes that mediate these relationships remain unclear, and research is needed to better understand and discriminate the pathways through which traumatic experiences lead to disruptions in normal functioning. (Espelage & Swearer, 2003; Finkelhor, Ormrod, & Turner, 2007; Kochenderfer-Ladd & Skinner, 2002). Researchers have proposed that stress appraisal and coping strategies play an important role in determining the outcome following stressful and traumatic life events (Hobfoll, 2002; Lazarus, 1991; Moreland & Dumas, 2008).

### **Stress Appraisal and Coping**

Stress appraisals are an important part of the coping process and mediate the relationship between a stressor and an individual's physiological stress response in threatening situations (Dobson & Neufeld, 1979; Lazarus, 1966). Stress appraisals (also referred to as cognitive appraisals) occur when an individual perceives and evaluates a situation as stressful or threatening (Delawalla, 2010). Lazarus and Folkman (1984) propose through their *Transactional Stress Model* that an individual's reaction to a stressor is determined by his or her

cognitive appraisal of the situation as threatening.

Two primary types of cognitive appraisals occur following stressors: primary and secondary appraisals (Lazarus, 1991; Schwarzer & Shulz, 2002). Primary appraisals relate to an individual's perception of the nature of the stressor and occur when an individual determines whether a situation will lead to a beneficial or harmful outcome. Secondary appraisals relate to an individual's perception of his or her coping capabilities and determination of available coping resources to deal with the stressor (Delawalla, 2010; Lazarus & Folkman 1984). According to this theory, when primary and secondary threat appraisals occur and an individual perceives an event as both stressful and exceeding his or her coping resources, he or she experiences an increase in physiological stress. Bandura (1997) suggested a similar hypothesis that stress reactions are dependent on the individual's self-appraisal of his or her coping abilities. Therefore, both the experience of a stressful event and an individual's cognitive appraisal of the event may affect the degree of physiological stress experienced (i.e., the outcome). This concept posits that stress appraisal may be an important mediator in the relationship between stressful life events and later psychological functioning.

Stress appraisals appear to be important in determining which behavioral responses and coping strategies an individual draws upon following stressful events (Lazarus, 1999). For example, an individual may turn to drugs and alcohol to cope with a perceived threatening situation if he or she appraises the event as overloading his or her current available coping resources. Subsequently, an individual with both a higher quality and quantity of coping skills would be more likely to appraise a potentially stressful situation as a challenge rather than a threat due to stronger and more accessible coping resources. Individuals who constantly feel unable to cope and draw upon maladaptive or unhealthy coping skills (e.g., aggressive behavior)

in response to stressors are at a greater risk of experiencing adverse outcomes in the future (Blechman, 1996).

### **Coping Competence**

The development of coping processes and skills during childhood plays an important role in determining whether individuals will follow adaptive or maladaptive developmental trajectories. *Coping Competence Theory* proposes that developmental trajectories and competence are determined through one's response to life challenges, including both everyday stressors and major life events (Blechman, Prinz, & Dumas, 1995). Most children cope with challenges in one of three ways: prosocial, antisocial, or asocial. Prosocial coping skills are healthy and constructive, while antisocial coping is often aggressive in nature, and asocial coping involves withdrawal or avoidance from a situation. Infants often exhibit signs of antisocial (e.g., crying) or asocial (e.g., avoiding strangers) coping skills early on in their development; however through consistency, caregiver support, and having their basic needs met, most children begin to display more prosocial ways of coping during typical development (Moreland & Dumas, 2008). Children who develop effective prosocial coping skills are better equipped to successfully deal with stressful life events and challenges. Children with underdeveloped coping skills often will continue to use antisocial or asocial ways of coping when faced with a challenging situation (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001; Compas, et al., 1995).

During typical development, children invest their energy into developing age-appropriate competencies. For example, during adolescence developmental competencies may include judgment, organization, impulse control, empathy, and decision-making (Blaustein & Kinniburgh, 2007). When children experience adversity and victimization, they are forced to focus their energy on survival, rather than on developing these necessary competencies.

According to Coping Competence Theory, there are three broad domains in which children need to develop competency: affective, social, and achievement (Moreland and Dumas, 2008).

Affective competence is developed through responding to emotional situations, while social competence is learned through interpersonal and social situations. Achievement competence is mastered through physical skills, goal-directed tasks, and academic or work demands. Individuals can exhibit high competence in one domain while displaying low competence in another; correspondingly their response (i.e., adaptive or maladaptive) following a traumatic event would depend upon competency development for the specific domain. For example, an individual with highly developed affective competence, but poor achievement competence would be more likely to respond resiliently to an emotionally demanding situation than a challenging academic situation.

Affective (i.e., emotional) competence is present through the typical developmental progression of resilient children, whereas children with maladaptive coping skills exhibit poor affective competence, including low self-efficacious beliefs (Hamill, 2003). Saarni (1999) discussed the importance of affective competence and self-efficacy beliefs in producing a wide-range of coping mechanisms, placing significance on self-efficacy as necessary in the development of an individual's ability to cope and persist during adverse situations. Self-efficacy appears to be a crucial component for increasing competence and resilience following adverse events (Cook, et al., 2005; Hamill, 2003; Gardner, Dishion, & Connell, 2008). In the following section, I will elaborate on self-efficacy beliefs, and the ways through which these beliefs may lead to increased competence and resilience following adverse events.

## **Self-Efficacy and Coping Processes**

Self-efficacious beliefs are individuals' beliefs about their competence and performance in a particular domain. Self-efficacy plays a role in individuals' capacity to persist during difficult situations, and purportedly helps to regulate adaptive functioning, playing an important role in coping and resilience following adverse events (Hamill, 2003; Schwarzer & Renner, 2000). According to Bandura (1997, 1999), self-efficacy refers to perceived control over a situation, or our perception that we are capable of performing behaviors required to successfully manage certain circumstances. Self-efficacy promotes perseverance in the face of adversity through this perception of control; we perceive ourselves as capable of success in certain situations, which leads to increased perseverance toward producing desired outcomes.

During stressful conditions, self-efficacy is thought to play a role in determining individuals' reactions to stress, as well as their quality of coping (Bandura, 1997). Self-efficacious beliefs have an impact on both the intensity and the continuity or resolution of an individual's reaction to stress. Benight and Bandura (2004) describe three main coping processes (a) Attentional and Construal Processes; (b) Transformative Action Processes; and (c) Thought Control Processes, through which self-efficacious beliefs function to improve socioemotional functioning during stressful and traumatic life events.

**Attentional and Construal Processes.** Attentional and construal processes play a role in subjective threat appraisal during intensely stressful situations and affect how threats are interpreted (Benight & Bandura, 2004). Whether or not an individual perceives a situation as threatening or benign is largely related to the individual's perception of danger in the environment and his or her coping capabilities. Control also plays an important role in determining potential threats in an individual's surroundings. Individuals who do not perceive



themselves in control of their environments are more likely to view their surroundings as perilous, exaggerate possible threats, distress themselves over minor risks, and impair their level of functioning. On the other hand, individuals who believe they can exert control over their environment, are less likely to worry over their coping deficiencies, display lower physiological arousal, and believe that they are capable of managing potential threats in their environment (Benight & Bandura, 2004; Jerusalem & Mittag, 1995; Lazarus & Folkman, 1984).

**Transformative Action Processes.** Transformative action processes affect how well people cope with threats in their environments. Benight and Bandura (2004) indicate that people with stronger coping efficacy will be bolder in their attempts to resolve stressful situations and more successful in transforming and shaping their environments. Individuals who have high self-efficacy for prosocial coping capabilities actively engage in coping strategies to transform aspects of their environment from threatening to benign. These individuals will persevere longer toward a desired outcome in a trying situation and use their acquired coping skills more efficiently, thus when presented with a threatening or stressful situation, these individuals will feel they are more equipped to manage the challenge through the use of various coping skills.

According to Schwarzer and Renner (2000), individuals with strong coping self-efficacy will respond more confidently, with more effort, and use better coping strategies when negative events occur than others who are not self-efficacious. On the other hand, individuals with weak self-efficacy for prosocial coping are more likely to respond to stressful situations with antisocial or asocial ways of coping (e.g., aggression or avoidance). Increased antisocial or aggressive ways of coping with life challenges can pose a significant problem for resolving interpersonal conflicts successfully in the future (Bandura, 2006; Okey 1992).

**Thought Control Processes.** Thought control processes are largely related to an individual's ability to self-regulate his or her thoughts. Self-regulation can be defined as the ability to discern and control emotions, cognitions, and behaviors (Kinniburgh, Blaustein, Spinazzola, & van der Kolk, 2005). Self-regulation is important for children to cope with intense situations and feelings, which involves the combination of active problem solving and emotional regulation for children to understand a situation (Saarni, 1999). According to Benight and Bandura (2004), the extent to which individuals can exert control over their cognitions and clear their minds of disturbing and upsetting thoughts is connected to recovery and well-being following traumatic experiences. Correspondingly, Jessor and Jessor (1977) suggest that individuals who are able to self-regulate their behavior, emotions, and cognitions, are less likely to engage in risky behavior or experience negative outcomes associated with risky behavior.

Social self-efficacy appears to play an important role in these types of coping processes. Bandura (2006) describes social self-efficacy as important to developing relationships with others, work collectively, and manage conflicts, regulate emotions and maintain healthy interactions in social settings. Overall, the connection between coping processes and self-efficacy appears to be crucial in the development of competence and resilience following adverse events (Cook et al., 2005; Kinniburgh et al., 2005; Saarni, 1999). This proposed link between self-efficacy, coping, and psychosocial outcomes (i.e., resilience and self-concept) will be explored in the next section.

### **Connecting Self-Efficacy to Psychosocial Functioning**

Bandura's (2006) explanations of efficacy and skill development are strongly related to current beliefs on the development of competence. Bandura depicts self-efficacy as varying among interpersonal and intrapersonal levels, in that people differ in efficacy levels in areas

where they perceive they have the highest capability and then choose to cultivate efficacy in the domains where mastery is perceived as attainable. Similar to the domains of competence (i.e., affective, social, and achievement), self-efficacy regulates functioning across and within domains through cognitive, motivational, affective, and selective processes (Bandura, 2006; Moreland & Dumas, 2008). Perceived self-efficacy is a mechanism to strengthen resilience because individuals with high self-efficacy maintain the belief in their capability to exert control over their thoughts (Ozer & Bandura, 1990). Individuals who perceive themselves as able to self-regulate will persevere longer in adverse situations, reject negative thoughts, and if successful, their efforts are displayed as competence in the face of extreme adversity.

Self-efficacious beliefs affect several coping processes, and it is through these processes that self-efficacy acts to strengthen resilience and improve psychosocial functioning following stressful periods. Resilience involves the ability to bounce back to a healthy level of functioning following a stressful situation (Bandura & Adams, 1977). Self-efficacy works to build resilience through a sense of control over the environment, and the ability to self-motivate and persevere in responding to stress and failure (Bandura, 1991; Bandura, 1997, 1999). As stated above, when people perceive that they are capable of succeeding, they persevere longer in their efforts toward producing desired outcomes.

Researchers' have theorized that perseverance and control are both complexly related to resilience, but only recently have they begun to explore the relationship between self-efficacy and resilience development in individuals (Bandura et al., 1999; Hamill, 2003). Hamill examined the effects of perceived self-efficacy beliefs within a population of adolescents. Hamill's study focused on the role of self-regulation and self-efficacy in the development of prosocial coping mechanisms in resilient individuals. The results of this study provide evidence

that self-efficacy is an important trait present among resilient adolescents. Self-efficacy levels distinguished the high competence with high adversity (resilient) group from both the maladaptive (low competence with high adversity) group and the low competence with low adversity group. Individuals in this study with low self-efficacy displayed little incentive to persevere in the face of negative experiences and low competence when faced with adverse events. The results of this study provide evidence that self-efficacy may be a significant mechanism in the interaction between adversity and psychosocial functioning, but limited research has examined how these variables interact to improve resilience following traumatic events.

### **Resilient Responding to Stressful Life Events**

Resilience is adaptable and occurs developmentally; strengthened or weakened through challenges and vulnerable periods occurring during childhood and adolescence. Turner, Finkelhor, and Ormrod (2010a) found that pervasive multiple-context victimization was associated with deficits in social and emotional processes that are generally used to help moderate the harmful effects following traumatic experiences. These findings suggest that coping processes, self-efficacy, and resilience may play an important role in recovery from traumatization.

Bonanno (2004) states researchers often confuse resilience with recovery, when they are distinctly different trajectories leading to later psychological adjustment. Recovery implies that an individual's level of functioning has temporarily fallen below typical threshold levels, and recovery designates the phase where functioning begins to return to normal levels. Conversely, resilience reflects the ability to maintain a stable equilibrium following stressful periods (Bonanno, 2004). Often, researchers have discussed resilience in terms of protective factors that

foster positive outcomes following traumatic events (Garmezy, 1991; Luthar, Cicchetti, & Becker, 2000; Rutter, 1999).

Bonanno (2004) suggests that viewing resilience as a protective factor implies that resilience may be faulty and that if resilience was a protective factor, it would not always result in adaptive functioning and adjustment following stress and trauma. Instead, Bonanno proposes that there are multiple pathways and protective factors that serve to promote resilient functioning. Bonanno reframes the concept of resilience as the outcome of successfully coping with stressors, rather than as a coping process. From this understanding, resilience pertains to an individual's ability to maintain relatively stable and healthy levels of psychological functioning following exposure to highly disruptive and stressful events. It is also important to note that resilience is more than the absence of psychopathology following stressors. Individuals recovering from trauma often experience symptom levels outside of normal functioning limits. Resilient individuals may experience transient agitation or disturbance of normal functioning, but generally bounce back to a stable path of adaptive functioning across time, and are able to grow and benefit from the experience.

Resilience was first conceptualized in relation to the impact of multiple risk factors and adversity, including socioeconomic disadvantage, parental mental illness, maltreatment, urban poverty, community violence, chronic illness, and catastrophic life events (Luthar, 1991). While past research on resilience focused on risk factors and negative outcomes, current resilience research examines positive outcomes following adversity, such as the interactions between adversity and competence (Compas et al., 1995). This body of research focuses on the interactions that strengthen resilience and lead to recovery in individuals who have experienced adverse events. Understanding the pathways through which resilience develops and interacts

with other mechanisms to lead individuals to develop healthy or maladaptive coping strategies is necessary to guide successful interventions for use with these individuals.

**Developing Resilience.** Currently resilience is thought to develop through the combination of the intrapersonal factors of the child (e.g., the child's personality traits), aspects of the child's family (e.g., mother's personality and mental health disorders), and environmental factors (e.g., schools and neighborhoods) (Luthar et al., 2000). Stressful experiences during childhood also affect the development of coping skills and resilience.

Individuals who display adaptive coping skills during stressful situations, possibly as a result of high coping efficacy and perceived control over the situation, have been shown to have better psychosocial adjustment than those with maladaptive coping strategies. Maladaptive coping behaviors may be viewed by the individual as advantageous in the moment (e.g., aggressive responding), and have been shown to benefit individual's short-term recovery, but this form of responding to stress often creates deficits in an individual's capacity to self-regulate and develop healthy social skills (Cook, et al., 2005). Rutter (1985) suggested that self-concept and self-esteem were among the characteristics of resilient individuals. Other researchers have provided evidence that self-concept is important to the development of social competence and resilience (Beardslee, 1989; Hobfoll, 2002; Markus & Wurf, 1987; Roberts, 2007).

### **Self-Concept, Competence, and Well-Being**

While definitions of self-concept often vary and self-concept is easily confused with self-esteem, within the literature on trauma and resilience, many researchers view self-concept as a relatively stable intrapersonal variable, which plays an important role in development and well-being (Baumeister 1998; Diehl & Hay, 2010; Harter, 1999; Higgins, 1996; Rader, 2011). Self-concept is viewed as a multidimensional construct, which is comprised of cognitions and feelings

about the self (Bong & Clark, 1999; Fleming & Courtney, 1984). According to Rader (2011), self-concept represents one's self-evaluations and beliefs about his or her individual attributes and characteristics.

Researchers have found that self-concept plays an important role in self-regulation and affects overall psychological well-being, happiness, and long-term emotional adjustment (Baumeister, Campbell, Krueger, & Vohs, 2003; Diehl, Hastings, & Stanton, 2001; Donahue, Robins, Roberts, & John, 1993; Garmezy, 1985). McCullough, Huebner, and Laughlin (2000) found that self-concept levels are important to understanding well-being in adolescents. Researchers have also suggested that self-concept relates to one's perceptions of his or her self-competence across various domains (i.e., physical, cognitive, and social competence) (Chappel, 2004; Harter, 1982; Richardson, 2002).

Social competence includes social skills, the ability to understand other's thoughts and points of view, and the ability to evoke positive behavioral responses from others; social competence is necessary to develop and maintain relationships (Masten et al., 1999; Werner, 1986). In a study on the effects of abuse on self-concept and social competence, Lopez and Heffer (1998) found that physical abuse was negatively correlated with self-concept. Overall, self-concept appears to be an important psychosocial resource, which affects well-being and adjustment.

### **Summary of Purpose**

The purpose of this study is to test two hypothesized theoretical multiple mediation models, in which the pathway between negative life events and psychosocial outcomes (i.e., resilience and self-concept) is mediated through stress appraisal and self-efficacy. Model 1 examines the relationship between negative life events and resilience through stress appraisal and

self-efficacy and is illustrated in Figure 1 (Appendix B). The second hypothesized model (Model 2) examines the relationship between negative life events and self-concept through stress appraisal and self-efficacy and can be viewed in Figure 2 (Appendix B).

Baron and Kenny (1986) stated that mediating relationships should only be examined in the case of a strong relationship between predictor and outcome variables. Numerous researchers have found significant main effects between life events and psychosocial outcomes, thus providing strong evidence in the literature of a relationship between these variables (Bouma, Ormel, Verhulst, & Oldehinkel, 2008; Dubow & Tisak, 1989; Hoffman, Levy-Shiff, & Ushpiz, 1993; Knapp & Maggee, 1979; Lewinsohn, Rohde, Seeley, Klein, & Gotlib, 2003; Russel & Davey, 1993). Despite evidence linking life events to a variety of psychosocial outcomes, the pathways leading from negative life events to deficits in psychosocial functioning is not fully understood. Therefore, in this study I will examine two possible coping processes: (1) stress appraisal and (2) self-efficacy, as possible mediators in the relationship between negative life events and psychosocial adjustment.

Mediation is a process that explains a causal sequence through which a predictor variable affects a second variable (i.e., the mediator variable) that consecutively affects a third variable (i.e., the outcome variable). According to Preacher and Hayes (2008), simple mediation occurs when an independent or predictor variable indirectly affects a dependent variable through an intervening or mediator variable. In this study, I will test two models of parallel multiple mediation with two mediator variables. Multiple mediation differs from simple mediation in that the indirect effect through a mediator within the context of multiple mediation represents the ability of that variable to mediate the effect of  $X$  on  $Y$ , conditional on the inclusion of another mediator variable (Preacher & Hayes, 2008).



## **Variables in the Current Study**

The predictor variable ( $X$ ) in this study is negative life change, as measured by the Negative Life Change score on the *Life Experiences Survey* (LES; Sarason, Johnson, & Siegel, 1978). The mediator variables are stress appraisal ( $M_1$ ), as measured by the *Perceived Stress Scale* (PSS; Cohen et al., 1983) and self-efficacy ( $M_2$ ), as measured by the *General Self-Efficacy Scale* (SGSES; Sherer et al., 1982). The outcome variables are resilience ( $Y_1$ ) and self-concept ( $Y_2$ ), as measured by the *Connor-Davidson Resilience Scale* (CD-RISC; Connor & Davidson, 2003) and the *Multidimensional Self-Concept Scale* (MSCS; Fleming & Courtney, 1984), respectively.

## **Research Questions and Hypotheses**

1. Are there significant relationships between negative life change, stress appraisal, self-efficacy, resilience, and self-concept?
  - a. Negative life change is hypothesized to be significantly negatively correlated with self-efficacy and both measures of psychosocial outcome (resilience and self-concept), and significantly positively correlated with stress appraisal.
  - b. Stress appraisal is hypothesized to be significantly negatively correlated with self-efficacy, resilience, and self-concept.
  - c. Self-efficacy is hypothesized to be significantly positively correlated with resilience and self-concept.
  - d. Resilience and self-concept are hypothesized to be significantly positively correlated.
2. Do stress appraisal and self-efficacy mediate the relationship between negative life change and psychosocial outcomes?

- a. Stress appraisal and self-efficacy are hypothesized to mediate the relationship between negative life change and resilience (Model 1).
- b. Stress appraisal and self-efficacy are hypothesized to mediate the relationship between negative life change and self-concept (Model 2).

## Chapter 3

### Method

#### Participants

Two hundred and twenty undergraduate students attending a large public southeastern university participated in this study. The participants were all enrolled in an introductory psychology course and volunteered to complete an online survey in exchange for research participation credit in the course. Of the 220 participants in the study, approximately half the students were male (49.5%) and half were female (50.5%). The participants ranged in age from 18 to 36 years ( $M=19.43$ ,  $SD=1.97$ ); however, most (94.5%) participants were between the ages of 18 to 21 years.

The majority (84.1%) of the participants in this study were Caucasian ( $n = 185$ ), 9.5 percent were African American ( $n = 21$ ), 3.6 percent were Asian/Pacific Islander ( $n=8$ ), 1.8 percent were biracial ( $n= 4$ ), and .9 percent were Hispanic ( $n = 2$ ). Over half the sample indicated they were Freshmen (59.5%;  $n = 131$ ); 25.9 percent were Sophomores ( $n = 57$ ); 12.3 percent were Juniors ( $n = 27$ ); and only 2.3 percent were Seniors ( $n = 5$ ). Demographic information is displayed in Table 1 (Appendix A).

#### Procedures

Participants for the study were recruited from the Psychology Department's Human Participation in Research (HPR) website. Students enrolled in psychology courses can use this website to find open research studies to be completed for research participation credit required for their course. The studies are listed on the website with titles and descriptions. Any student over the age of 18 was invited to participate in this study on the website. The title and description of the study listed on the HPR website can be found in Appendix C.

Study procedures were conducted using SPSS Data Collection Web Interviews, which is a software tool to develop online web surveys. This software allows for advanced survey collection methods in a secure manner that can be downloaded directly into SPSS. On the HPR website, following the consent form (Appendix D), the participants' completed a demographic information section before completing the main survey questionnaires (see Appendix E). The demographics page asked for information about the student's age, race/ethnicity, gender, college classification and major, relationship status, and his or her parent's relationship status and education. Following completion of the demographics section, participants were asked to fill out the main survey. Permission to use each scale was obtained by the researcher prior to the start of the study. The survey included five scales to measure stress appraisal, self-efficacy, life experiences, resilience, and self-concept. Participants completed the scales in the order listed below.

## **Measures**

**Life Events.** The *Life Experiences Survey* (LES; Sarason et al., 1978), a 60-item scale assessing recent life experiences and changes that are ranked on a seven-point Likert scale ranging from Extremely Negative to Extremely Positive in terms of the impact of the event. The *Life Experiences Survey* provides three measures of life events: Total Life Change, Positive Life Change, and Negative Life Change scores. Positive Life Change is measured as the total score of items marked as having a positive impact on the individual and Negative Life Change is measured as the absolute value of the total score of items marked by participants as having a negative impact. The Total Life Change score is the sum of the Positive Life Change and Negative Life Change scores. The analyses in this study only pertain to the Negative Life Change scale. Test-retest correlations on two separate studies were .19 and .53 for Positive Life

Change scores, .56 and .88 for Negative Life Change scores, and .63 and .64 for the Total Life Change scores (Sarason et al., 1978). Validity for the LES was assessed by correlating the scale with various related measures. The Negative Life Change scale was significantly correlated with measures of stress and depression (Sarason et al., 1978).

**Self-Efficacy.** The *General Self-Efficacy Scale* (SGSES; Sherer et al., 1982) is a 30-item scale, measuring individuals' beliefs concerning the relationship between their behaviors and outcomes. This scale has two subscales to measure general self-efficacy and social self-efficacy. The items on the SGSES aim to measure a broad and stable sense of personal competence to deal effectively with a variety of stressful situations. This scale examines individuals' beliefs that certain behaviors in situations lead to certain outcomes and they can successfully perform these behaviors. This survey uses the following scale: Disagree strongly (1) Disagree Moderately (2), Neither (3), Agree Moderately (4), Agree Strongly (5). Moderate convergent validity was found for the SGSES (.25 to .66). Test-retest reliability was .60 and Cronbach's alpha was 0.85 (Sherer et al., 1982).

**Resilience.** The *Connor-Davidson Resilience Scale* (CD-RISC; Connor & Davidson, 2003) is a 25-item self-rating scale that measures how well individuals are able to thrive during difficult times. This scale has good reliability and validity, and is able to distinguish between individuals with low and high resilience, thus this scale provided the measure of resilience in this study. Scoring of the scale is based on summing the total of each item, which are scored on a five-point Likert scale. The range of total scores on the CD-RISC is from 0 to 100, with higher scores reflecting greater resilience. Convergent validity was assessed for the CD-RISC against other resilience scales, as well as various measures related to aspects of resilience, such as hardiness, social support, stress-coping ability, and positive and negative affect. Connor and

Davidson (2003) showed acceptable test-retest reliability for the full CD-RISC ( $r=0.87$ ). Internal consistency was evaluated by using Cronbach's alpha for the total scale (0.89) and item-total correlations ranged from 0.30 to 0.70.

**Self-Concept.** The *Multidimensional Self-Concept Scale* (MSCS; Fleming & Courtney, 1984), a 36-item scale measuring five areas of self-concept: self-regard, social confidence, school abilities, physical appearance, and physical abilities. The items are rated on a seven-point Likert scale. Sample items on this measure include (a) How confident do you feel that someday people you know will look up to you and respect you? (b) How often do you worry whether other people like to be with you? (c) When you make an embarrassing mistake or have done something that makes you look foolish, how long does it take you to get over it? Test-retest reliability was .84 for the total scale and ranged from .79 to .83 for the subscales. Cronbach's alpha was .92 for the total scale and internal consistency reliability coefficients ranged from .77 to .88 for the subscales.

**Stress Appraisal.** The *Perceived Stress Scale* (PSS; Cohen et al., 1983) is a 14-item scale measuring the degree to which life events are perceived as stressful, the level of control respondents feel over their lives, and stress levels. Individuals are asked to respond to questions regarding their ability to overcome stress, feel in control of various situations, and cope with life's hassles and irritations. Item responses are rated on a five-point Likert scale from Never to Very Often. Higher total scores on this scale single scale indicate higher anxiety and stress levels. The PSS correlates positively with measures of life events, psychological symptoms, and physical symptoms. Test-retest reliabilities were .85 with two days between tests, and .55 following a six-week interval between tests. Internal consistency reliability coefficients range from .84 to .86 (Cohen, et al., 1983).

## Data Analysis

Demographic differences among study variables were examined and relevant results discussed in the following section. To address Hypothesis 1, bivariate correlations were examined between all variables in the study. Multiple mediation analyses for hypothesis 2 for both models were examined through multiple regression procedures conducted using the SPSS INDIRECT macro (Preacher & Hayes, 2008). All variables were centered prior to the regression procedures. The INDIRECT macro estimates the path coefficients using Ordinary Least Squares (OLS) regression in multiple mediator models and generates bootstrap confidence intervals (percentile, bias-corrected, and bias-corrected and accelerated) for total and specific indirect effects of the predictor variable on the outcome variable through mediator variables (Preacher & Hayes, 2008).

Modern approaches to testing indirect effects (i.e., mediation analysis) involve using bootstrapping methods, as opposed to the Sobel Test. Bootstrapping is a nonparametric resampling strategy used for estimation and hypothesis testing (Preacher & Hayes, 2004; Preacher, Rucker, & Hayes, 2007). Bootstrapping procedures provide a range of values (confidence intervals) by generating thousands of random samples with replacement from the sample data set. Bootstrapping methods are preferable when conducting mediation analyses because bootstrapping does not require direct effects between variables to be significant, does not assume normality of the sampling distribution, has more accurate Type I and II error control, and greater statistical power (Hayes, 2009; MacKinnon, Lockwood, & Williams, 2004; Preacher & Hayes, 2008; Preacher, Rucker, & Hayes, 2007).

The substantive research questions (a) Are there significant relationships between negative life change, stress appraisal, self-efficacy, resilience, and self-concept; (b) Do stress

appraisal and self-efficacy mediate the relationship between negative life change and psychosocial outcomes, are addressed with relevant data analyses and discussion presented below.



## Chapter 4

### Results

#### Descriptive Statistics

Descriptive statistics for demographic variables in the study are provided in Table 1. A series of one-way ANOVAs were used to test for demographic differences in study variables. Results revealed significant differences between males and females on stress appraisal [ $F(1,218) = 8.04, p = .005$ ]; self-concept [ $F(1,218) = 11.22, p = .001$ ]; and negative life change [ $F(1,218) = 6.89, p = .009$ ]. These tests indicated that females scored higher than males on measures of stress appraisal and negative life change, while males scored higher on the measure of self-concept. No significant differences were found for age or race among study variables.

#### Bivariate Correlations

Bivariate correlations among variables are reported in Table 2. It was predicted that negative life change as measured by scores on the *Life Experiences Survey* would be significantly negatively correlated with self-efficacy (*General Self-Efficacy Scale*), resilience (*Connor-Davidson Resilience Scale*), and self-concept (*Multidimensional Self-Concept Scale*), and significantly positively correlated with stress appraisal (*Perceived Stress Scale*). As predicted, negative life change was significantly negatively correlated with self-efficacy ( $r = -.18, p < .001$ ) and self-concept ( $r = -.31, p < .001$ ), and significantly positively correlated with stress appraisal ( $r = .36, p < .001$ ). These correlations indicate that experiencing more negative life events is associated with lower self-efficacy and self-concept, and higher levels of perceived stress related to the events.

It was hypothesized that negative life change would be significantly negatively correlated with resilience. My results indicate that the relationship between these two variables ( $r = -.07, p = .296$ ) was not significant.

Additional correlations between study variables indicate that stress appraisal was significantly negatively correlated with self-efficacy ( $r = -.45, p < .001$ ), resilience ( $r = -.40, p < .001$ ), and self-concept ( $r = -.52, p < .001$ ). Self-efficacy was positively correlated with resilience ( $r = .71, p < .001$ ) and self-concept ( $r = .55, p < .001$ ). Resilience and self-concept were positively correlated as well ( $r = .46, p < .001$ ).

Analyses of these correlational relationships indicate that overall the study variables are moderately related to each other; however, negative life change was not significantly correlated with resilience in this study. According to Baron and Kenny (1986) for mediation to occur there must be a significant relationship between the predictor variable ( $X$ ) and the outcome variable ( $Y$ ). Recently, researchers have indicated that this requirement is not always necessary for mediation to occur (Hayes, 2009; MacKinnon, Krull, & Lockwood, 2000; Preacher & Hayes, 2008). Preacher and Hayes (2008) pointed out that in models incorporating multiple mediators with opposite effects, it is possible that the direct effect from  $X$  and  $Y$  may be negligible both before and after adding mediating variables to the relationship. Rucker, Preacher, Tormala, and Petty (2011) discuss circumstances where a predictor variable may exert a stronger influence on a mediator variable than on an outcome variable, which in turn would lead the indirect effect to be stronger than the total effect. A significant indirect effect, despite lack of a direct or total effect provides evidence of mediation and has been termed “indirect-only mediation” (Zhao, Lynch, & Chen, 2010). Thus, despite lack of a correlational relationship between negative life

change and resilience, the overall relationships found between the study variables provide justification to test the hypothesized models of mediation.

### **Multiple Mediation Analyses**

Two mediation models were tested to examine the indirect effects of negative life change on resilience and self-concept through stress appraisal and self-efficacy. Model 1, which is illustrated in Figure 1 (Appendix B) hypothesized that negative life change would be a significant predictor of resilience when stress appraisal and self-efficacy were entered into the model as mediators. Based on the significant differences between males and females on several of the study variables, gender was entered into the model as a covariate. The path coefficients for the model were estimated through OLS regression using the INDIRECT SPSS macro for multiple mediation with bootstrapping procedures (Preacher & Hayes, 2008). This method generates 95% Bias-corrected and accelerated confidence intervals (BCa CIs). Indirect effects can be interpreted as significant if the 95% BCa CIs do not contain zero.

The results of the mediation analysis for Model 1 can be found in Table 3 and Table 4 (Appendix A). Figure 3 (Appendix B) shows the unstandardized path coefficients for the hypothesized model. As seen in Figure 3, negative life change predicted higher stress appraisal ( $a_1 = .35$ ) and lower self-efficacy ( $a_2 = -.28$ ). Stress appraisal predicted lower resilience ( $b = -.29$ ) and self-efficacy predicted higher resilience ( $b = .78$ ). The total effect of negative life change on resilience through both mediating variables ( $c = -.16$ ) was not significant, nor was the direct effect of negative life change on resilience ( $c' = .16$ ).

The total indirect effect of both mediating variables ( $-.32$ ) was significant (BCa CIs  $-.54$  to  $-.13$ ). The indirect effect of stress appraisal when controlling for self-efficacy was significant ( $-.10$ ; BCa CIs  $-.19$  to  $-.03$ ), as was the indirect effect of self-efficacy when controlling for stress

appraisal (-.22; BCa CIs -.39 to -.05). A contrast of the indirect effects revealed that the mediating effect of stress appraisal did not significantly differ from the mediating effect of self-efficacy (BCa CIs -.07 to .31). Overall, the model was significant [ $F(4,215) = 61.48, p < .001$ ] and predicted 53% of the variance in resilience from negative life change through stress appraisal and self-efficacy when controlling for gender.

Model 2, as seen in Figure 2 (Appendix B) hypothesized that negative life change would be a significant predictor of self-concept when stress appraisal and self-efficacy were entered into the model as mediators (controlling for gender). Direct standardized and unstandardized path coefficients for the model can be found in Table 5 (Appendix A) and bootstrapping results are shown in Table 6 (Appendix A). Figure 4 (Appendix B) illustrates the unstandardized path coefficients for the hypothesized model. Results of this mediation analysis indicated that negative life change predicted higher stress appraisal ( $a_1 = .35$ ) and lower self-efficacy ( $a_2 = -.28$ ). Stress appraisal predicted lower self-concept ( $b = -1.20$ ) and self-efficacy predicted higher self-concept ( $b = 1.08$ ). The total effect of negative life change on self-concept through stress appraisal and self-efficacy ( $c = -1.24$ ) was significant. When controlling for the mediator variables, the direct effect of negative life change on self-concept ( $c' = -.52$ ) was reduced, but remained significant.

The total indirect effect of stress appraisal and self-efficacy (-.72) was significant (BCa CIs -1.13 to -.30). The indirect effect of stress appraisal when controlling for self-efficacy was significant (-.41; BCa CIs -.70 to -.19), as was the indirect effect of self-efficacy when controlling for stress appraisal (-.30; BCa CIs -.57 to -.07). A contrast of the indirect effects revealed that the mediating effect of stress appraisal did not significantly differ from the mediating effect of self-efficacy (BCa CIs -.40 to .22). Overall, the model was significant [ $F$

(4,215) = 40.34,  $p < .001$ ] and predicted 43% of the variance in self-concept from negative life change through stress appraisal and self-efficacy when controlling for gender.

The results of these mediation analyses provide support for my second hypothesis. Significant indirect effects were found for both Model 1 and Model 2. Stress appraisal and self-efficacy fully mediated the relationship between negative life change and resilience for Model 1. For Model 2, while both mediators were found to be significant for the model, my results indicated that there are likely other variables that have indirect effects on the relationship between negative life change and self-concept.

## Chapter 5

### Discussion and Conclusions

The purpose of this study was to examine stress appraisal and self-efficacy as mediating variables in the relationship between negative life change, resilience, and self-concept among college students. Researchers have found that cognitive appraisals and self-efficacy are both important processes for developing and using healthy coping strategies (Fortier et al., 2009; Hamill, 2003; Hobfoll, 2002; Kinniburgh et al., 2005; Moreland & Dumas, 2008). This study added to these findings, indicating that appraised stressfulness and self-efficacy have significant indirect effects on resilience and self-concept in individuals who experienced multiple negative life events. Resilience and self-concept have both been found to be important aspects of positive mental health and well-being (Banyard & Cantor, 2004; McCullough et al., 2000). As hypothesized, the findings of this study indicate a significant negative relationship between negative life events and self-concept. This finding is consistent with past research, which has connected stressful life events to overall mental health (Hall & Webster, 2002; Turner, Finkelhor, & Ormrod, 2006). In this study, moderate to strong correlational relationships were found between stress appraisal, self-efficacy, resilience, and self-concept. Likewise, past research has indicated associations between these variables and suggested that appraised stressfulness and self-efficacious beliefs play a role in determining resiliency and self-concept (Lazarus & Folkman, 1984; Rutter, 1985). However, the current findings did not indicate a significant direct relationship between stressful life events and resilience.

Two multiple mediation models were proposed in this study to investigate potential pathways through which negative life experiences impact psychosocial functioning. Model 1 (Figure 1) explored the relation between negative life change and resilience as mediated by stress

appraisal and self-efficacy. Model 2 (Figure 2) examined the relationship between negative life change and self-concept through stress appraisal and self-efficacy. Results from correlational and OLS regression analyses revealed strong relationships between these variables and provided evidence to support a mediational relationship between negative life change and resilience through stress appraisal and self-efficacy, and additionally a mediational relationship between negative life change and self-concept through stress appraisal and self-efficacy.

The main finding of this study was that both stress appraisal and self-efficacy are significant mediators of the relationship between negative life events and psychosocial outcomes (i.e., resilience and self-concept). For the first model, there was no direct effect between negative life change and resilience; while in the second model both the direct and total effects were significant between negative life change and self-concept. This likely indicates that there are other potential mediators in the relationship between negative life change and self-concept that were not included in this model. This study provides evidence that a substantial portion of the variance in resilience (53%) and self-concept (43%) can be predicted by an individual's negative life experiences, the level of perceived stress in one's life, and one's perception of control and beliefs about his or her capabilities in various situations.

Gender differences in stress, anxiety, depression, and the frequency of certain traumatic events (e.g., sexual abuse) have been well documented in the literature by researchers (Altemus, 2006; Matt & Vazquez, 2009; Nolen-Hoeksema, 2001). Accordingly, this study provides further evidence that women tend to report more frequently experiencing negative life-changing events, appraise potentially stressful situations more negatively, feel more anxiety related to these events, and have lower self-concepts than their male counterparts. Males in this study reported

higher positive self-views related to their appearance as well as their social, academic, and physical abilities.

### **Limitations of the Current Study**

Past exposure to negative events and adverse outcomes were concurrently measured in this study through self-reports, thus causal relationships cannot be drawn from the results of this study. Additionally, the implications that can be drawn from this study are limited due to the nature of correlational designs. The generalizability of study findings is limited since the majority of participants in the study were Caucasian. A further aspect of this study affecting the generalization of results is that all participants in the study were undergraduate students and most of these students were enrolled in their first year of college. Additionally, I only examined two dimensions of psychosocial functioning as outcome measures, as well as only two possible mediating variables. Other potential areas of psychological functioning and well-being (e.g., happiness, hardiness, or life satisfaction) may have different relationships with stress appraisal and self-efficacy. Similarly, other variables (e.g., coping, religiosity) may indirectly impact the relationship between life events and changes in psychosocial functioning.

### **Applied Implications of the Study**

Individuals who successfully cope with stressful life experiences are more likely to maintain positive mental health. However, stressful life events are often uncontrollable and unpredictable, and designing interventions to help treat individuals who have experienced multiple stressors is challenging. All participants in this study reported experiencing multiple negative life events during the prior year. This finding is significant because stressful life experiences have been linked to a multitude of negative outcomes including poor academic performance and negative social behaviors. Furthermore, the majority of the participants in the



study were freshmen undergraduate students, which indicates that many of the negative experiences reported would have occurred during high school. For this reason, the findings in the current study are likely generalizable to a younger student population, thus it is essential that educators within the schools are equipped with the necessary skills to help students overcome difficulties following negative life events and stressors.

Based on the results of this study it can be expected that most individuals will experience negative life events at some point during their lives; however, not everyone will suffer adverse outcomes following these stressful events. Additionally, study findings suggest that females may be at an increased risk of encountering poor psychosocial outcomes following stressors, such as a diminished self-concept. Results indicated that stress appraisal and self-efficacy are both mediators in the relationship between negative life events and psychosocial outcomes, thus teaching students skills to improve self-efficacious behaviors and helping them learn to appraise situations as challenges rather than threats may result in stronger resiliency and self-concept. Since the experience of stressful events is not limited to particular individuals or groups, identifying at-risk students is not necessarily indicated from the results of this study. Treatment for individuals already suffering from the after-effects of traumatic events would be highly beneficial, but the identification of these students is challenging. Instead, it may be more advantageous to implement school-wide prevention and intervention programs that aid students in developing the skills they need to reflect on negative life events and evaluate them in a positive manner, as well as build self-efficacious behaviors to increase perseverance and perceived control for students during challenging situations.

Children develop self-efficacy beliefs and appraisal processes at a young age, and the lack of these skills may impact them both academically and socially. Learning to successfully

cope with stressors at a young age will enable children to focus on developmentally appropriate competencies, such as learning new academic skills, building social skills, and forming healthy peer relationships. Currently, there are no prevailing interventions in the literature that focus on building skills in public educational settings to aid children and adolescents in appraisal processes and to strengthen self-efficacy for overcoming adversity within the schools. Teaching students ways to reduce stress, increase healthy coping, and build self-efficacious behaviors will aid in helping them cope with future stressors and negative life events. Therefore, the development of intervention programs that can be successfully implemented in the schools is essential and should be considered as a primary step by interventionists.

The development of school-based interventions is necessary to combat the negative effects of life events and trauma; however, practitioners in community and mental health settings should also be made aware of techniques and skills that aid in reducing appraised stressfulness and strengthening self-efficacious behaviors in youth and young adults. In therapeutic environments, Stress Inoculation Training has the potential to help prepare individuals for stressors through teaching them to avoid using maladaptive coping following stressors (Meichenbaum, 2007). This type of intervention can be modified to meet the specific needs of the individual or groups being treated as well as the nature of the stressor experienced.

Stress Inoculation Training focuses on three areas: (1) education, (2) acquiring and consolidating coping skills, and (3) stimulus exposure/application of skills. Stress Inoculation Training is theoretically based on Lazarus and Folkman's (1984) Transactional Stress Model, which focuses on the importance of cognitive appraisal processes and coping on physiological stress. During this intervention, an individual is taught new coping skills along with ways to strengthen his or her current coping behaviors. The individual is then exposed to mild stressors

through methods including role-play, modeling, and *in vivo* exposure in order to engage the use of these coping skills and help him or her develop a sense of mastery (Meichenbaum, 2007).

According to Bandura (1997), guided mastery is important for developing and building coping self-efficacy. Consequently, Stress Inoculation Training may provide a means to boost self-efficacious coping behaviors and decrease negative cognitive appraisals following stressful events. This intervention has been largely used in therapeutic settings, but may provide a strong starting point for researchers looking to create interventions to reduce stress appraisal and improve self-efficacy for individuals who have experienced multiple negative life changes. In the future, researchers should explore the development of an intervention model based around Stress Inoculation Training and consider implementing a trial program on a university campus.

### **Directions for Future Research**

In this study, self-report measures were used to measure participants' exposure to negative events concurrently with measures of outcome variables. I recommend that future research might involve longitudinal efforts to document sequenced changes in response to stressful events; providing stronger implications for causal relationships. Since suggestions for interventions are still preliminary and based upon correlational data, investigations of outcome measures following an implemented intervention should be made. Future researchers should investigate whether stress appraisal and self-efficacy mediate the relationship between negative life change and psychosocial outcomes in populations that differ in age or ethnicity from the present group. Investigations with school-age children would be welcome.

Another recommended path for future research is to explore alternative mediators and additional aspects of psychosocial functioning. Researchers should examine the potential mediating effects of stress appraisal and self-efficacy on various other psychosocial outcomes.

Additionally, researchers may want to explore the use of alternative measures of resilience in a similar study. Findings from additional research in this area could provide a further understanding of the way through which negative life experiences relate to overall well-being and competence. Since the results of this study revealed that stress appraisal and self-efficacy are important to psychosocial outcomes, researchers should investigate these variables as part of an intervention study. While this study examined a population of college students, in the future investigators should examine prevention programs and interventions in younger populations where there is more opportunity to make an earlier impact on recovery from past trauma as well as increase skills to prevent deleterious effects following future stressors.

### **Summary and Conclusions**

The results of this study establish two potential mechanisms, stress appraisal and self-efficacy, through which researchers can intervene to improve resilience and self-concept following negative life changes. Current findings provide additional support for gender differences in the frequency of negative life events, stress, and self-concept. Strong evidence was found to support the mediating effects of stress appraisal and self-efficacy on the relationship between negative life change, resilience, and self-concept. No prior studies have examined a multiple mediator model for the indirect effects of stress appraisal and self-efficacy. This study provides strong evidence that these processes are crucial to maintaining resilience and self-concept following stressors. Based on the results of this study, interventions aimed at reducing appraised stressfulness and improving self-efficacious behaviors would be beneficial to strengthen overall psychosocial functioning for individuals who have experienced negative life events.

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## Appendices

## **Appendix A: Tables**

Table 1.

*Demographic Information*

|                        |                        | Frequency | Percentage |
|------------------------|------------------------|-----------|------------|
| Gender                 | Male                   | 109       | 49.5       |
|                        | Female                 | 111       | 50.5       |
| Race/Ethnicity         | Caucasian              | 185       | 84.1       |
|                        | African American       | 21        | 9.5        |
|                        | Hispanic               | 2         | 0.9        |
|                        | Asian/Pacific Islander | 8         | 3.6        |
|                        | Biracial               | 4         | 1.8        |
|                        |                        |           |            |
| College Classification | Freshman               | 131       | 59.5       |
|                        | Sophomore              | 57        | 25.9       |
|                        | Junior                 | 27        | 12.3       |
|                        | Senior                 | 5         | 2.3        |

Table 2.

*Bivariate Correlations Among Variables*

|      | NLC | SA    | RISC   | SC     | SE     |
|------|-----|-------|--------|--------|--------|
| NLC  | 1   | .36** | -.07   | -.31** | -.18** |
| SA   |     | 1     | -.40** | -.52** | -.45** |
| RISC |     |       | 1      | .46**  | .71**  |
| SC   |     |       |        | 1      | .55**  |
| SE   |     |       |        |        | 1      |

\*\*p < .001

NLC = Negative Life Change Scale (Life Experiences Survey); SA = Stress Appraisal (Perceived Stress Scale); RISC = Resilience (Connor-Davidson Resilience Scale); SC = Self-Concept (Multidimensional Self-Concept Scale); SE= Self-Efficacy (General Self-Efficacy Scale)



Table 3.

*Path Coefficients for Model 1 (n = 220)*

|                | Unstandardized Coefficients |                | Standardized Coefficients |                | <i>t</i> | <i>p</i> |
|----------------|-----------------------------|----------------|---------------------------|----------------|----------|----------|
|                | <i>b</i>                    | Standard Error | Beta                      | Standard Error |          |          |
| a <sub>1</sub> | .35**                       | .06            | .34                       | .06            | 5.34     | .00      |
| a <sub>2</sub> | -.28**                      | .11            | -.17                      | .07            | -2.56    | .01      |
| b <sub>1</sub> | -.29**                      | .10            | -.15                      | .06            | -2.78    | .01      |
| b <sub>2</sub> | .78**                       | .06            | .66                       | .5             | 12.71    | .00      |
| c              | -.16                        | .13            | -.09                      | .07            | -1.24    | .21      |
| c'             | .16                         | .10            | .08                       | .05            | 1.63     | .10      |
| Gender         | 3.17**                      | 1.19           | .26                       | .10            | 2.68     | .01      |

\*\*Significant at .01 level

NOTE: Path a<sub>1</sub> = NLC → SA; Path a<sub>2</sub> = NLC → SE; Path b<sub>1</sub> = SA → RISC; Path b<sub>2</sub> = SE → RISC; Path c = NLC → RISC (total effect including indirect effects a<sub>1</sub>b<sub>1</sub>+a<sub>2</sub>b<sub>2</sub>); Path c' = NLC → RISC (direct effect controlling for indirect effects a<sub>1</sub>b<sub>1</sub>+a<sub>2</sub>b<sub>2</sub>).

Table 4.

*Bootstrap Results for Indirect Effects in Model 1 (n = 220)*

| Indirect Effect                  | Unstandardized Coefficients |                | 95% BCa CIs |       | Standardized Coefficients |                |
|----------------------------------|-----------------------------|----------------|-------------|-------|---------------------------|----------------|
|                                  | <i>b</i>                    | Standard Error | Lower       | Upper | Beta                      | Standard Error |
| Total                            | -.32*                       | .10            | -.54        | -.13  | -.17                      | .06            |
| Stress Appraisal<br>( $a_1b_1$ ) | -.10*                       | .04            | -.19        | -.03  | -.05                      | .02            |
| Self-Efficacy<br>( $a_2b_2$ )    | -.22*                       | .09            | -.40        | -.05  | -.12                      | .05            |
| Contrast                         | .12                         | .10            | -.07        | .31   | .06                       | .05            |

\*Significant at the .05 level

NOTE: Total =  $a_1b_1+a_2b_2$ ; Contrast =  $a_1b_1-a_2b_2$

Table 5.

*Path Coefficients for Model 2 (n = 220)*

| Path           | Unstandardized Coefficients |                | Standardized Coefficients |                | <i>t</i> | <i>p</i> |
|----------------|-----------------------------|----------------|---------------------------|----------------|----------|----------|
|                | <i>b</i>                    | Standard Error | Beta                      | Standard Error |          |          |
| a <sub>1</sub> | .35**                       | .06            | .34                       | .06            | 5.34     | .00      |
| a <sub>2</sub> | -.28**                      | .11            | -.17                      | .07            | -2.56    | .01      |
| b <sub>1</sub> | -1.20**                     | .26            | -.28                      | .06            | -4.53    | .00      |
| b <sub>2</sub> | 1.08**                      | .16            | .40                       | .06            | 6.89     | .00      |
| c              | -1.24**                     | .28            | -.28                      | .06            | -4.39    | .00      |
| c'             | -.52*                       | .24            | -.12                      | .06            | -2.14    | .03      |
| Gender         | -6.94*                      | 3.04           | -.24                      | -.11           | -2.29    | .02      |

\*Significant at .05 level    \*\* Significant at .01 level

NOTE: Path a<sub>1</sub> = NLC → SA; Path a<sub>2</sub> = NLC → SE; Path b<sub>1</sub> = SA → SC; Path b<sub>2</sub> = SE → SC; Path c = NLC → SC (including indirect effects a<sub>1</sub>b<sub>1</sub>+a<sub>2</sub>b<sub>2</sub>); Path c' = NLC → SC (controlling for indirect effects a<sub>1</sub>b<sub>1</sub>+a<sub>2</sub>b<sub>2</sub>).

Table 6.

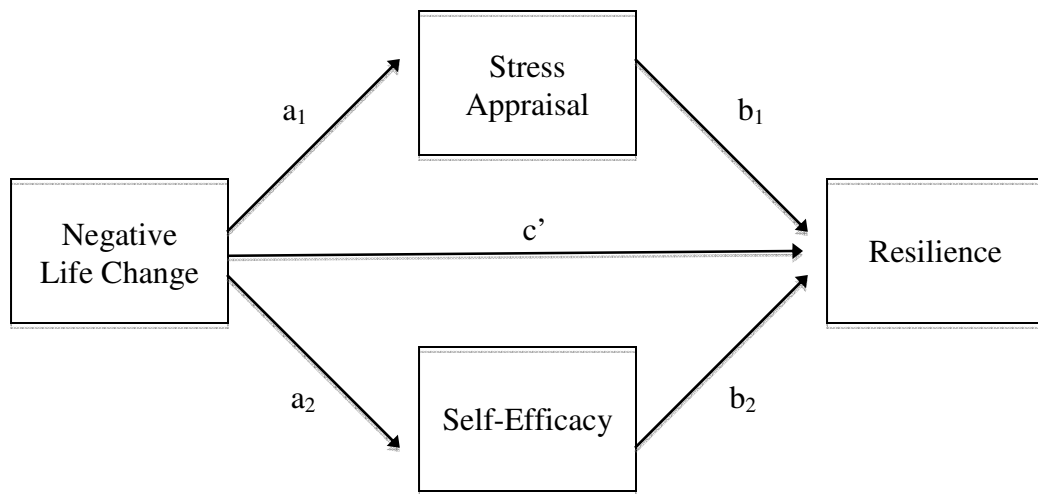
*Bootstrap Results for Indirect Effects in Model 2 (n = 220)*

| Indirect Effect                  | Unstandardized Coefficients |                | 95% BCa CIs |       | Standardized Coefficients |                |
|----------------------------------|-----------------------------|----------------|-------------|-------|---------------------------|----------------|
|                                  | <i>b</i>                    | Standard Error | Lower       | Upper | Beta                      | Standard Error |
| Total                            | -.72*                       | .21            | -1.13       | -.30  | -.16                      | .05            |
| Stress Appraisal<br>( $a_1b_1$ ) | -.41*                       | .13            | -.70        | -.19  | -.09                      | .03            |
| Self-Efficacy<br>( $a_2b_2$ )    | -.30*                       | .13            | -.57        | -.07  | -.07                      | .03            |
| Contrast                         | .11                         | .16            | -.40        | .22   | -.03                      | .04            |

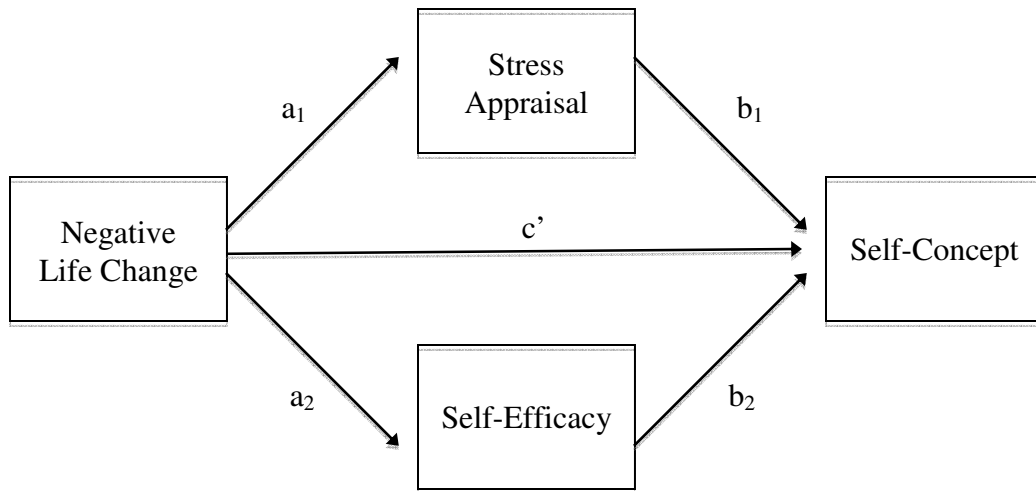
\*Significant at the .05 level

NOTE: Total =  $a_1b_1+a_2b_2$ ; Contrast =  $a_1b_1-a_2b_2$

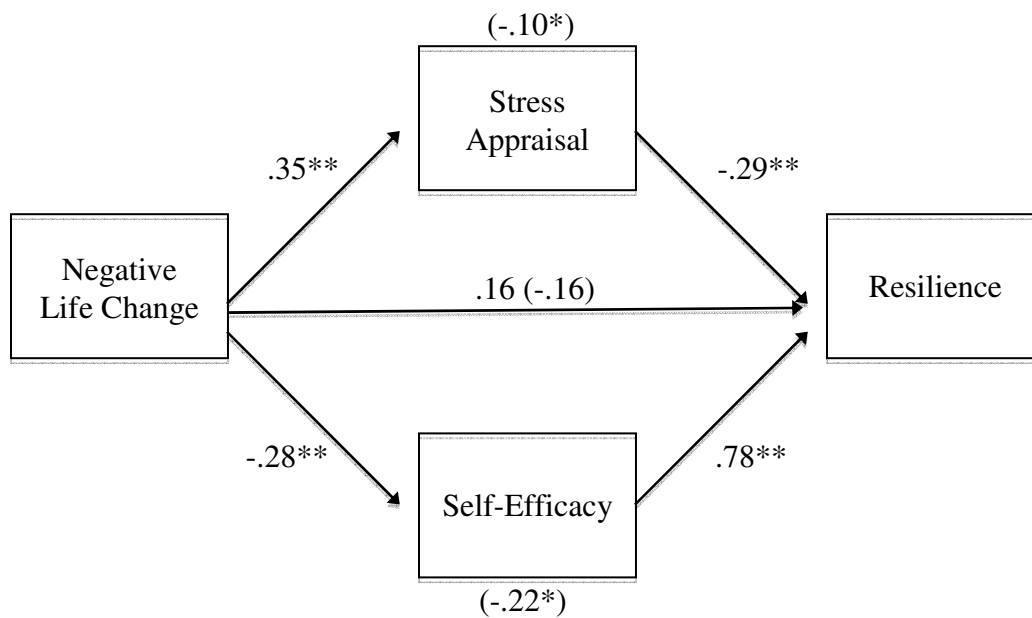
## Appendix B: Figures



*Figure 1.* Hypothesized multiple mediation model showing the relation between negative life change and resilience through stress appraisal and self-efficacy.



*Figure 2.* Hypothesized multiple mediation model showing the relation between negative life change and self-concept through stress appraisal and self-efficacy.

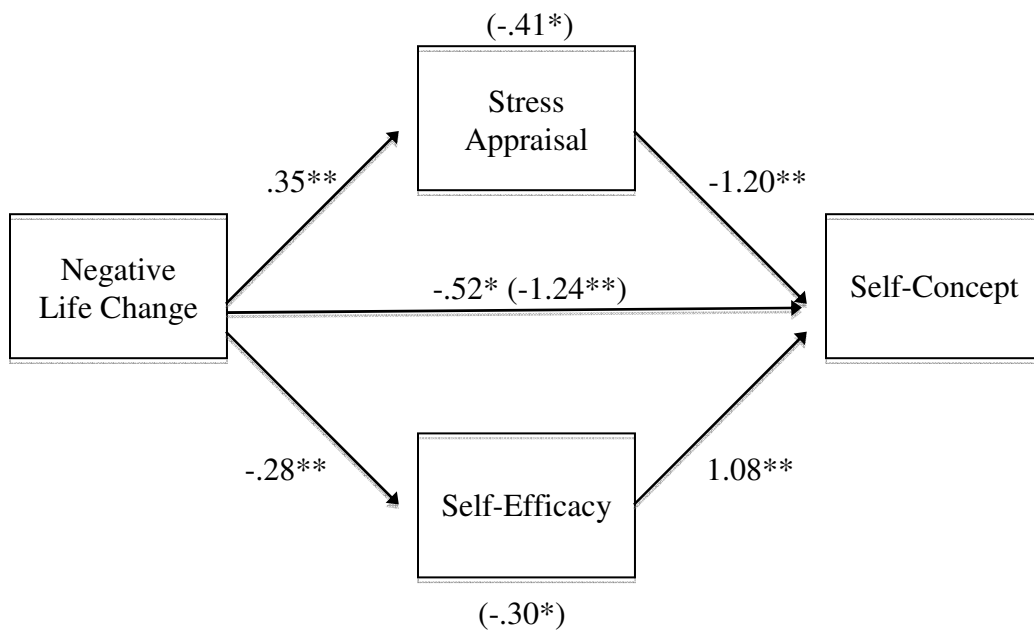


*Figure 3.* Mediation effects of stress appraisal and self-efficacy on the relation between negative life change and resilience.

NOTE: Unstandardized path coefficients and statistical significance tests were calculated using the Indirect Macro for SPSS (Preacher & Hayes, 2008). Numbers in parentheses represent indirect effects for mediator variables and the total effect for NLC → RISC. The effect of NLC on RISC was fully mediated by SA ( $a_1b_1$ ) and SE ( $a_2b_2$ ).

\*  $p < .05$  level \*\*  $p < .01$





*Figure 4.* Mediation effects of stress appraisal and self-efficacy on the relation between negative life change and self-concept.

NOTE: Unstandardized path coefficients and statistical significance tests were calculated using the Indirect Macro for SPSS (Preacher & Hayes, 2008). Numbers in parentheses represent indirect effects for mediator variables and the total effect for NLC → SC. The effect of NLC on SC was partially mediated by SA ( $a_1b_1$ ) and SE ( $a_2b_2$ ).

\*  $p < .05$  level \*\*  $p < .01$

### **Appendix C: Description of Research Project for HPR website**

Title: The Role of Stress, Self-Efficacy, and Resilience on the Effects of Traumatic Life Events in College Students.

Description: This study is looking at the relationship between life events and how you cope with them. To participate, you will need to fill out a five surveys about beliefs, attitudes, coping skills, emotional well-being, and potentially stressful life experiences. All of these surveys are completed online and it should take less than 1 hour and 15 minutes to complete this study. You will receive 5 credits for your psychology class for participation.

Restrictions: You must be at least 18 years old.

In order to participate, volunteers need to contact [REDACTED]  
[REDACTED]. She will send you the site link and password.

## Appendix D: Informed Consent Statement

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### INFORMED CONSENT STATEMENT

#### The Role of Stress, Self-Efficacy, and Resilience on the Effects of Traumatic Life Events in College Students.

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This study will explore the effects that coping behaviors and strategies have on individuals' abilities to overcome stressful life events. You will be asked to complete a general information page and five surveys about beliefs, attitudes, coping skills, emotional well-being, and potentially stressful life experiences. Any individual aged 18 or older who is currently enrolled in a psychology class at the [REDACTED], which awards class credits for research participation, is invited to participate in this study.

Participation in this project is voluntary. If you choose not to participate in this study, you will be offered other opportunities to earn class credits by your psychology instructor. You may also withdraw from this study during the period that you are filling out the survey forms on the Internet at any time by simply stopping the procedure. To formally withdraw your survey information, you should e-mail [REDACTED] and leave a message indicating your e-mail address and that you wish to withdraw. We will then destroy any of survey information that you have filled out.

#### *Potential Risks Involved*

Completing these surveys poses minimal risks to study participants. We will be asking you to identify and evaluate the impact of potentially stressful life events. In the rare chance that you may feel moderate or severe anxiety or distress during or after completion of the surveys, you are urged to contact the [REDACTED] Student Counseling Center at [REDACTED] (e-mail [REDACTED]). Alternatively, you may contact [REDACTED] at [REDACTED] and she will help you to locate appropriate services.

Your participation in this study is confidential. No person, outside of the research team will view your results. Following download of the survey information, your results will be assigned an anonymous identification number, which will not have a direct link to your identity.

*Benefits of Participation*

There are no direct benefits to participants for completion of this research study, outside of the opportunity to participate in a research project. The general benefits of this research are contributions to the knowledge base in areas of self-efficacy, resilience, and trauma.

Consent is implied by your completion of the surveys in this study. Please print a copy of this consent statement for your records. If you consent to participate in this study, please continue to the survey section. If you are interested in further information on this study or have questions about the study, please contact [REDACTED] at [REDACTED] (e-mail: [REDACTED]) or the faculty advisor, [REDACTED] at [REDACTED] (e-mail: [REDACTED]). For research-related problems or questions regarding subjects' rights, the Institutional Review Board may be contacted through the Compliance Office at [REDACTED].

## Appendix E: Demographics Survey

### Basic Information

1) Your Age:

2) Your Gender:

- 1 Male
- 2 Female

3) Your Ethnicity:

- 1 Caucasian
- 2 African American
- 3 Hispanic
- 4 Asian/Pacific Islander
- 5 Native American
- 6 Other:

4) Your College Classification:

- 1 Freshman
- 2 Sophomore
- 3 Junior
- 4 Senior
- 5 5<sup>th</sup> year Senior
- 6 Other

5) What is your major?

6) What is your relationship status?

- 1 Single, No significant relationship
- 2 Single, In a significant relationship
- 3 Engaged
- 4 Married
- 5 Separated
- 6 Divorced
- 7 Other:

7) What is your father's relationship status?

- 1 Married
- 2 Divorced
- 3 Re-married
- 4 Unknown
- 5 Other:

8) What is your mother's relationship status?

- 1 Married
- 2 Divorced
- 3 Re-married
- 4 Unknown
- 5 Other:

9) What is your father's highest level of education?

- 1 Some High School
- 2 High School Diploma/GED
- 3 Associate's Degree
- 4 Bachelor's Degree
- 5 Master's degree
- 6 Doctoral Degree
- 7 Unknown
- 8 Other:

10) What is your mother's highest level of education?

- 1 Some High School
- 2 High School Diploma/GED
- 3 Associate's Degree
- 4 Bachelor's Degree
- 5 Master's degree
- 6 Doctoral Degree
- 7 Unknown
- 8 Other:

## Appendix F: General Self-Efficacy Scale

**Instructions.** This questionnaire is a series of statements about your personal attitudes and traits. Each statement represents a commonly held belief. Read each statement and decide to what extent it describes you. There are no right or wrong answers. You will probably agree with some of the statements and disagree with others, Please indicate your own personal beliefs about each statement below by marking the letter that best describes your attitude or feeling. Please be truthful and describe yourself as you really are, not as you would like to be.

**Mark:**

- A** If you **DISAGREE STRONGLY** with the statement
- B** If you **DISAGREE MODERATELY** with the statement
- C** If you **NEITHER AGREE or DISAGREE** with the statement
- D** If you **AGREE MODERATELY** with the statement
- E** If you **AGREE STRONGLY** with the statement

1. I like to grow houseplants.
2. When I make plans, I am certain I can make them work.
3. One of my problems is that I cannot get down to work when I should.
4. If I can't do the job the first time, I keep trying until I can.
5. Heredity plays the major role in determining one's personality.
6. It is difficult for me to make new friends.
7. When I set important goals for myself, I rarely achieve them.
8. I give up on things before completing them.
9. I like to cook.
10. If I see someone I would like to meet, I go to that person instead of waiting for him or her to come to me.
11. I avoid facing difficulties.
12. If something looks too complicated, I will not even bother to try it.
13. There is some good in everybody.
14. If I meet someone interesting who is very hard to make friends with, I'll soon stop trying to make friends with that person.

15. When I have something unpleasant to do, I stick to it until I finish it.
16. When I decide to do something, I go right to work on it.
17. I like science.
18. When trying to learn something new, I soon give up if I am not initially successful.
19. When I 'm trying to become friends with someone who seems uninterested at first, I don't give up very easily.
20. When unexpected problems occur, I don't handle them very well.
21. If I were an artist, I would like to draw children.
22. I avoid trying to learn new things if they look too difficult for me.
23. Failure just makes me try harder.
24. I do not handle myself well in social gatherings.
25. I very much like to ride horses.
26. I feel insecure about my ability to do things.
27. I am a self-reliant person.
28. I have acquired my friends through my personal abilities at making friends.
29. I give up easily.
30. I do not seem capable of dealing with most problems that come up in my life.



## Appendix G: Connor-Davidson Resilience Scale

How have you felt over the past month?

For each question choose one from the following:

- 0 Not true at all
- 1 Rarely true
- 2 Sometimes true
- 3 Often true
- 4 True nearly all of the time

|  |   |   |   |   |   |
|--|---|---|---|---|---|
| 1. Able to adapt to change                         | 0 | 1 | 2 | 3 | 4 |
| 2. Close and secure relationships                  | 0 | 1 | 2 | 3 | 4 |
| 3. Sometimes fate or God can help                  | 0 | 1 | 2 | 3 | 4 |
| 4. Can deal with whatever comes                    | 0 | 1 | 2 | 3 | 4 |
| 5. Past success gives confidence for new challenge | 0 | 1 | 2 | 3 | 4 |
| 6. See the humorous side of things                 | 0 | 1 | 2 | 3 | 4 |
| 7. Coping with stress strengthens                  | 0 | 1 | 2 | 3 | 4 |
| 8. Tend to bounce back after illness or hardship   | 0 | 1 | 2 | 3 | 4 |
| 9. Things happen for a reason                      | 0 | 1 | 2 | 3 | 4 |
| 10. Best effort no matter what                     | 0 | 1 | 2 | 3 | 4 |
| 11. You can achieve your goals                     | 0 | 1 | 2 | 3 | 4 |
| 12. When things look hopeless, I don't give up     | 0 | 1 | 2 | 3 | 4 |
| 13. Know where to turn for help                    | 0 | 1 | 2 | 3 | 4 |
| 14. Under pressure, focus and think clearly        | 0 | 1 | 2 | 3 | 4 |
| 15. Prefer to take the lead in problem solving     | 0 | 1 | 2 | 3 | 4 |
| 16. Not easily discouraged by failure              | 0 | 1 | 2 | 3 | 4 |
| 17. Think of self as strong person                 | 0 | 1 | 2 | 3 | 4 |
| 18. Make unpopular or difficult decisions          | 0 | 1 | 2 | 3 | 4 |
| 19. Can handle unpleasant feelings                 | 0 | 1 | 2 | 3 | 4 |
| 20. Have to act on a hunch                         | 0 | 1 | 2 | 3 | 4 |
| 21. Strong sense of purpose                        | 0 | 1 | 2 | 3 | 4 |
| 22. In control of your life                        | 0 | 1 | 2 | 3 | 4 |
| 23. I like challenges                              | 0 | 1 | 2 | 3 | 4 |
| 24. You work to attain your goals                  | 0 | 1 | 2 | 3 | 4 |
| 25. Pride in your achievements                     | 0 | 1 | 2 | 3 | 4 |

## Appendix H: Perceived Stress Scale

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate how often you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer each question fairly quickly. That is, don't try to count up the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable estimate.

For each question choose from the following alternatives:

- 0 never
- 1 almost never
- 2 sometimes
- 3 fairly often
- 4 very often

1. In the last month, how often have you been upset because of something that happened unexpectedly?
2. In the last month, how often have you felt that you were unable to control the important things in your life?
3. In the last month, how often have you felt nervous and "stressed"?
4. In the last month, how often have you dealt successfully with irritating life hassles?
5. In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?
6. In the last month, how often have you felt confident about your ability to handle your personal problems?
7. In the last month, how often have you felt that things were going your way?
8. In the last month, how often have you found that you could not cope with all the things that you had to do?
9. In the last month, how often have you been able to control irritations in your life?
10. In the last month, how often have you felt that you were on top of things?
11. In the last month how often have you been angered because of things that happened that were outside of your control?
12. In the last month, how often have you found yourself thinking about things that you have to accomplish?
13. In the last month, how often have you been able to control the way you spend your time?
14. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

## Appendix I: Life Experiences Survey

Listed below are a number of events, which sometimes bring about change in the lives of those who experience them and which necessitate social readjustment. Please check those events, which you have experienced in the recent past. Only check items, which you have experienced. Also, for each item checked below, please indicate the extent to which you viewed the event as having either a positive or negative impact on your life at the time the event occurred. That is indicate the type and extent of impact that the event had. A rating of -3 would indicate an extremely negative impact. A rating of 0 suggests no impact either positive or negative. A rating of +3 would indicate an extremely positive impact.

|  | Experienced in<br>the last year | Extremely negative | Moderately negative | Somewhat negative | No Impact | Slightly positive | Moderately positive | Extremely positive |
|--|---------------------------------|--------------------|---------------------|-------------------|-----------|-------------------|---------------------|--------------------|
| 1. Marriage  | ___                             | -3                 | -2                  | -1                | 0         | +1                | +2                  | +3                 |
| 2. Detention in jail or comparable institution   | ___                             | -3                 | -2                  | -1                | 0         | +1                | +2                  | +3                 |
| 3. Death of a spouse   | ___                             | -3                 | -2                  | -1                | 0         | +1                | +2                  | +3                 |
| 4. Major change in sleeping habits<br>(much more or much less sleep)   | ___                             | -3                 | -2                  | -1                | 0         | +1                | +2                  | +3                 |
| 5. Death of close family member:   | ___                             | -3                 | -2                  | -1                | 0         | +1                | +2                  | +3                 |
| a. Mother  |                                 |                    |                     |                   |           |                   |                     |                    |
| b. Father  | ___                             | -3                 | -2                  | -1                | 0         | +1                | +2                  | +3                 |
| c. Brother   | ___                             | -3                 | -2                  | -1                | 0         | +1                | +2                  | +3                 |
| d. Sister  | ___                             | -3                 | -2                  | -1                | 0         | +1                | +2                  | +3                 |
| e. Grandmother   | ___                             | -3                 | -2                  | -1                | 0         | +1                | +2                  | +3                 |
| f. Grandfather   | ___                             | -3                 | -2                  | -1                | 0         | +1                | +2                  | +3                 |
| g. Other (specify) _____   | ___                             | -3                 | -2                  | -1                | 0         | +1                | +2                  | +3                 |
| 6. Major change in eating habits<br>(much more or much less food intake)   | ___                             | -3                 | -2                  | -1                | 0         | +1                | +2                  | +3                 |
| 7. Foreclosure on mortgage or loan   | ___                             | -3                 | -2                  | -1                | 0         | +1                | +2                  | +3                 |
| 8. Death of a close friend   | ___                             | -3                 | -2                  | -1                | 0         | +1                | +2                  | +3                 |
| 9. Outstanding personal achievement  | ___                             | -3                 | -2                  | -1                | 0         | +1                | +2                  | +3                 |
| 10. Minor law violations<br>(traffic tickets, disturbing the peace, etc.)  | ___                             | -3                 | -2                  | -1                | 0         | +1                | +2                  | +3                 |
| 11. <i>Male</i> : Wife/girlfriend pregnancy  | ___                             | -3                 | -2                  | -1                | 0         | +1                | +2                  | +3                 |
| 12. <i>Female</i> : Pregnancy  | ___                             | -3                 | -2                  | -1                | 0         | +1                | +2                  | +3                 |
| 13. Changed work situation<br>(different work responsibility, major change in working hours, working conditions, etc.) | ___                             | -3                 | -2                  | -1                | 0         | +1                | +2                  | +3                 |
| 14. New job  | ___                             | -3                 | -2                  | -1                | 0         | +1                | +2                  | +3                 |
| 15. Serious illness or injury of close family member:  |                                 |                    |                     |                   |           |                   |                     |                    |

|   |     |    |    |    |   |    |    |    |
|---|-----|----|----|----|---|----|----|----|
| a. Mother   | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| b. Father   | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| c. Sister   | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| d. Brother  | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| e. Grandfather  | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| f. Grandmother  | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| g. Spouse   | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| h. Other (specify) _____  | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 16. Sexual difficulties   |     |    |    |    |   |    |    |    |
| 17. Trouble with employer<br>(in danger of losing job, being suspended, demoted, etc.)                                  | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 18. Trouble with in-laws  | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 19. Major change in financial status<br>(a lot better off or a lot worse off)   | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 20. Major change in closeness of family members<br>(increased or decreased closeness)                                   | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 21. Gaining a new family member<br>(through birth, adoption, family member moving in, etc.)                             | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 22. Change of residence   | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 23. Marital separation from mate (due to conflict)  | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 24. Major change in church activities<br>(increased or decreased attendance)  | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 25. Marital reconciliation with mate  | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 26. Major change in number or arguments with spouse<br>(a lot more or a lot less arguments)                             | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 27. Married male: Change in wife's work<br>outside the home (beginning work, ceasing work, changing to a new job, etc.) | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 28. Married female: Change in husband's work<br>(loss of job, beginning new job, retirement, etc.)                      | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 29. Major change in usual type or amount of recreation  | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 30. Borrowing more than \$10,000<br>(buying home, business, etc.)   | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 31. Borrowing less than \$10,000<br>(buying car, TV, getting school loan, etc.)   | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 32. Being fired from job  | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 33. <i>Male</i> : Wife/girlfriend having abortion   | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 34. <i>Female</i> : Having abortion   | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 35. Major personal illness or injury  | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 36. Major change in social activities,<br>(e.g., parties, movies, visiting-increased or decreased participation)        | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |

|   |     |    |    |    |   |    |    |    |
|---|-----|----|----|----|---|----|----|----|
| 37. Major change in living conditions of family<br>(building new home, remodeling, deterioration of home, neighborhood, etc.) | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 38. Divorce   | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 39. Serious injury or illness of close friend   | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 40. Retirement from work  | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 41. Son or daughter leaving home<br>(due to marriage, college, etc.)  | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 42. Ending of formal schooling  | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 43. Separation from spouse (due to work, travel, etc.)  | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 44. Engagement  | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 45. Breaking up with boyfriend/girlfriend   | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 46. Leaving home for the first time   | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 47. Reconciliation with boyfriend/girlfriend  | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| Other recent experiences which have had an impact on your life. List and rate.  |     |    |    |    |   |    |    |    |
| 48.   | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 49.   | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 50.   | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 51. Beginning a new school experience<br>at a higher academic level   | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 52. Changing to a new school<br>at the same academic level  | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 53. Academic probation  | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 54. Being dismissed from dormitory or other residence   | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 55. Failing an important exam   | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 56. Changing a major  | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 57. Failing a course  | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 58. Dropping a course   | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 59. Joining a fraternity/sorority   | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
| 60. Financial problems concerning school<br>(in danger of not having sufficient money to continue)                            | ___ | -3 | -2 | -1 | 0 | +1 | +2 | +3 |

## Appendix J: Multidimensional Self-Concept Scale

Rate yourself on each of the following items by *circling* the number closest to your position on a 1 - 7 scale. For example, if you are asked how often you worry about the impression you make on others, circle a 1 if you are *very concerned*, circle a 7 if you are *not at all concerned*, or circle some point in between to indicate your degree of concern.

|  |                             |                           |
|--|-----------------------------|---------------------------|
| 1. How often do you feel inferior to most of the people you know?  | Very often<br>1   2   3   4 | Almost Never<br>5   6   7 |
| 2. How often do you feel worried or bothered about what other people think of you?   | Very often<br>1   2   3   4 | Almost Never<br>5   6   7 |
| 3. How confident are you that others see you as being physically appealing?  | Very often<br>1   2   3   4 | Almost Never<br>5   6   7 |
| 4. Have you ever thought of yourself as physically uncoordinated?  | Very often<br>1   2   3   4 | Almost Never<br>5   6   7 |
| 5. How much do you worry about how well you get along with other people?   | Very often<br>1   2   3   4 | Almost Never<br>5   6   7 |
| 6. When you make an embarrassing mistake or have done something that makes you look foolish, how long does it take you to get over it? | Very often<br>1   2   3   4 | Almost Never<br>5   6   7 |
| 7. Do you ever think that you are a worthless individual?  | Very often<br>1   2   3   4 | Almost Never<br>5   6   7 |
| 8. When trying to do well at a sport and you know other people are watching, how rattled or flustered to you get?                      | Very often<br>1   2   3   4 | Almost Never<br>5   6   7 |
| 9. When you have to read an essay and understand it for a class assignment, how worried or concerned do you feel about it?             | Very often<br>1   2   3   4 | Almost Never<br>5   6   7 |
| 10. Compared with classmates, how often do you feel you must study more than they do to get the same grades?                           | Very often<br>1   2   3   4 | Almost Never<br>5   6   7 |
| 11. When in a group of people, do you have trouble thinking of the right things to talk about?   | Very often<br>1   2   3   4 | Almost Never<br>5   6   7 |
| 12. How often are you troubled with shyness?   | Very often<br>1   2   3   4 | Almost Never<br>5   6   7 |
| 13. How often do you have the feeling that there is nothing you can do well?   | Very often<br>1   2   3   4 | Almost Never<br>5   6   7 |
| 14. How confident do you feel that someday people you know will look up to you and respect you?  | Very often<br>1   2   3   4 | Almost Never<br>5   6   7 |

|   |                       |                       |
|---|-----------------------|-----------------------|
| 15. How often do you worry about criticisms that might be made of your work by your teacher or employer?  | Very often<br>1 2 3 4 | Almost Never<br>5 6 7 |
| 16. Do you often feel uncomfortable meeting new people?   | Very often<br>1 2 3 4 | Almost Never<br>5 6 7 |
| 17. When you have to write an argument to convince your teacher, who may disagree with your ideas, how concerned or worried do you feel about it? | Very often<br>1 2 3 4 | Almost Never<br>5 6 7 |
| 18. Have you ever felt inferior to most other people in athletic ability?   | Very often<br>1 2 3 4 | Almost Never<br>5 6 7 |
| 19. In turning in a major assignment such as a term paper, how often do you feel you did an excellent job on it?                                  | Very often<br>1 2 3 4 | Almost Never<br>5 6 7 |
| 20. Do you ever feel afraid or anxious when you are going into a room by yourself where other people have already gathered and are talking?       | Very often<br>1 2 3 4 | Almost Never<br>5 6 7 |
| 21. How often do you worry whether other people like to be with you?  | Very often<br>1 2 3 4 | Almost Never<br>5 6 7 |
| 22. How often do you have trouble expressing your ideas when you have to put them into writing as an assignment?                                  | Very often<br>1 2 3 4 | Almost Never<br>5 6 7 |
| 23. Do you often feel that most of your friends or peers are more physically attractive than yourself?  | Very often<br>1 2 3 4 | Almost Never<br>5 6 7 |
| 24. When involved in sports requiring physical coordination, are you often concerned that you will not do well?                                   | Very often<br>1 2 3 4 | Almost Never<br>5 6 7 |
| 25. Have you ever felt ashamed of your physique or figure?  | Very often<br>1 2 3 4 | Almost Never<br>5 6 7 |
| 26. In general, how confident do you feel about your abilities?   | Very often<br>1 2 3 4 | Almost Never<br>5 6 7 |
| 27. How often do you feel self-conscious  | Very often<br>1 2 3 4 | Almost Never<br>5 6 7 |
| 28. How often do you have trouble understanding things you read for class assignments?  | Very often<br>1 2 3 4 | Almost Never<br>5 6 7 |
| 29. Do you often wish or fantasize that you were better looking?  | Very often<br>1 2 3 4 | Almost Never<br>5 6 7 |

|  |                       |                       |
|--|-----------------------|-----------------------|
| 30. Have you ever thought that you lacked the ability to be a good dancer or do well at recreational activities involving coordination?      | Very often<br>1 2 3 4 | Almost Never<br>5 6 7 |
| 31. How much do you worry about whether other people regard you as a success or failure in your job or at school?                            | Very often<br>1 2 3 4 | Almost Never<br>5 6 7 |
| 32. How often do you dislike yourself?   | Very often<br>1 2 3 4 | Almost Never<br>5 6 7 |
| 33. When you think that some of the people you meet might have an unfavorable opinion of you, how concerned or worried do you feel about it? | Very often<br>1 2 3 4 | Almost Never<br>5 6 7 |
| 34. How often do you imagine that you have less scholastic ability than your classmates?   | Very often<br>1 2 3 4 | Almost Never<br>5 6 7 |
| 35. Do you ever feel so discouraged with yourself that you wonder whether you are a worthwhile person?                                       | Very often<br>1 2 3 4 | Almost Never<br>5 6 7 |
| 36. Have you ever been concerned or worried about your ability to attract members of the opposite sex?                                       | Very often<br>1 2 3 4 | Almost Never<br>5 6 7 |

*(This instrument is the Fleming-Courtney revision of Janis-Field Scale.)*



## **Vita**

Jennifer Anne Cody graduated from Florida Atlantic University in Jupiter, Florida in 2005 with a B.A. in Psychology. For the next two years she worked as a Child Development Specialist at Children's Psychology Associates in West Palm Beach, Florida. In 2007, she enrolled at the University of Tennessee, Knoxville to pursue her Ph.D. in School Psychology. From 2007 to 2011, Jennifer worked as a graduate assistant and academic advisor for undergraduate students. In December 2010, she received her M.S. in Applied Educational Psychology at the University of Tennessee, Knoxville. She completed an APPIC accredited internship in August 2012 at Frontier Health in Kingsport, Tennessee.