THE EFFECTS OF HOPE AND TRAUMA ON SELF-REPORTED HEALTH AND WELL-BEING

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Abstract

The purpose of this research was to study the degree to which hope relates to part of the human experience, specifically for those who have been affected by childhood trauma. Stress resulting from trauma affects the mind and body, with effects seen across the lifespan. It is assumed hope is connected to the human experience and it has been found to minimize the impact of adverse outcomes of life. In the present study, an examination of whether hope shares a bond with physical and emotional health for those who have experienced adverse childhood experiences (ACEs) is studied. Another aim was to understand the relationship between levels of self-perceived hope, posttraumatic growth, and positive adjustment after trauma. The Adverse Childhood Experience Questionnaire (Appendix C), the Trait Hope Scale (Appendix E), the RAND 36-SF questionnaire (Appendix F), and the Posttraumatic Growth Inventory (Appendix G) were utilized in this study. Participants obtained through snowball sampling via Facebook completed four surveys that measured ACE scores, self-perceived hope, self-perceived adjustment, and self-perceived health. Results of the 93 participants that completed the surveys indicate that hope has a significant negative relationship with ACEs while having a significant positive relationship with self-perceived health. In addition, hope was not found to have a moderating effect within the relationship between ACEs and self-rated posttraumatic growth or the relationship between ACEs and self-rated health. These results did not support the hypothesis tested. The overall importance of hope in the aftermath of ACE's does not significantly affect overall health or growth. However, the information gained enlightens the importance of the relationship between hope and self-perceived health.

Keywords: adverse childhood experiences, hope, well-being, posttraumatic growth

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Chapter One

Researchers have extensively studied the effects of childhood trauma in the last two decades (Felitti et al., 1998; Felitti & Anda, 2010; Flaherty et al., 2006; Ghosh Ippen, Harris, Van Horn, & Lieberman, 2011; Kalmakis & Chandler, 2013; Sacks, Murphey, & Moore, 2014). An episode(s) of childhood trauma is recognized as adverse childhood experiences (ACEs). Kalmakis and Chandler (2013) described these experiences as resulting from dysfunction occurring within a child's home care environment. In addition, due to recent scientific developments, researchers have identified variables that affect bodily responses to traumatic events. Responses to trauma and stress are now viewed beyond bodily reactions and include hormonal activity and impacts on brain development (Helsel, 2014; Loman & Gunnar, 2010; Slopen, McLaughlin, & Shonkoff, 2014). However, these advances have not yet addressed the issue of hope as a moderating variable to the aftereffects of ACEs. While researchers have made few attempts to establish hope as a coping resource in the aftermath of ACEs, some define hope as a psychological trait and a protective factor after trauma (Duggal, Sacks-Zimmerman, & Liberta, 2016; Snyder, 1989). This discussion includes viewing hope as both an internal characteristic that operates as a stable construct and as a potential moderating variable (Lopez, Rose, Robinson, Marques, & Pais-Ribeiro, 2014; Marques, Lopez, & Mitchell, 2013; Marques, Lopez, & Pais-Ribeiro, 2011). Researchers agree that growth can occur after trauma, but it is unclear if hope relates to post-traumatic growth in the aftermath of ACEs (Affleck & Tennen, 1996).

One purpose of this dissertation was to determine if hope can serve as a moderating variable between self-perceived health and ACEs. A second purpose of this

dissertation was to investigate the possibility of hope as a moderating variable within the relationship of posttraumatic growth and ACEs. Additionally, hope as a moderating variable within the relationship of ACEs and self-perceived health was studied. Literature addressing (a) the impact of stress and trauma on the body, (b) the adverse childhood experience study, (c) hope, and (d) posttraumatic growth is reviewed in Chapter 1.

Stress and Trauma

Weinstock (2005) has defined stressors as events or conditions that are perceived as threatening. Stress occurs when events or conditions exceed one's ability to cope with daily life circumstances (Ruini, Offidani, & Vescovelli, 2015). Stress impacts one's ability to cope with an event, possibly creating a traumatic experience. Moreover, the impact of stressful or traumatic events varies depending upon individual perspectives. The impact of stress and trauma has basis in the meaning one gives to such an event. Traumatic events have personal definition through the type of trauma, the perpetrator, the survivor's response to the event, and the survivor's developmental maturity (Jenmorri, 2006). In addition, cultures and societies also define trauma in their own ways, which can add to the convolution of its definition (Jenmorri, 2006). Trauma is thus defined by stressors, but it is limited to the subjective experience and weight people give to their stressors.

The body's stress response system. Traumatic events induce and affect bodily reactions through the stress response system (Balistreri, 2015; Helsel, 2014; Ruini et al., 2015; Tomasdottir et al., 2015; Van Der Kolk, Roth, Pelcovitz, Sunday, & Spinazzola, 2005). The stress response system is a network of specific neural pathways that influences bodily reactions to stress (Helsel, 2014; Loman & Gunnar, 2010; Slopen et al.,

2014). The stress response system refers to the hypothalamic-pituitary-adrenocortical (HPA) axis and to the sympatho-adrenal system (SAS), part of the autonomic nervous system. The stress response system impacts cortisol levels, gene expression, and gene transcription. The adrenal cortex, part of the HPA axis, is also impacted by the stress response system through a change in the release of hormones. The hypothalamus, also part of the HPA axis, is also affected, which can affect diurnal rhythm. Furthermore, stress also affects the limbic system, which involves the hippocampus, amygdala, and the prefrontal cortex (Loman & Gunnar, 2010; Slopen et al., 2014). The limbic system is important within the stress response system because it contains the amygdala, the emotion center of the brain. The hippocampus is essential in memory formation. Finally, the prefrontal cortex helps regulate behaviors. Stress responses activate the central nervous system, aiding in the endocrine, autonomic, and behavioral response systems that enable flight, fight, and freeze responses to stressful events (Loman & Gunnar, 2010). In addition, stress impacts the body's ability to cope with past traumatic events by affecting the nervous system's various subsystems (enteric, sympathetic, and parasympathetic; Helsel, 2014). Consequently, stress has a hormonal and physical impact on one's body.

The stress response system contains many hormones. As a result, the stress response system's cluster of hormones is collectively referred to as stress hormones. However, there are three main hormones, adrenaline, cortisol, and norepinephrine (Baum & Grunberg, 1995; Grunberg & Singer, 1990; Vaernes et al., 1982). Cortisol is one stress hormone that is readily available for study (Slopen et al., 2014). Cortisol is a stress biomarker and is produced by the HPA axis (Slopen et al., 2014). For healthy individuals, cortisol levels rise before waking, decline throughout the day, and are at very

low levels during sleep. However, after stressful interactions, cortisol levels increase. Prolonged stress exposure can cause dysregulation of cortisol, creating both hypo- or hyperactivity (Slopen et al., 2014).

The body is under stress when trauma is perceived; when this occurs, cortisol is released, and the body responds in high alert mode (Helsel, 2014; Loman & Gunnar, 2010). Stress increases blood pressure, heart rate, and the level of stress hormones in the body. High levels of cortisol make it difficult to focus, eat, and sleep. If the perception of stress remains, levels of stress hormones increase, leading to toxicity of the brain, hence the term toxic stress (Balistreri, 2015). Toxic stress stems from the persistent effects of stress on the nervous system and from the releasing of stress hormones. This amount of stress affects the developing brain and might lead to lifelong problems that span educational, behavioral, physical, and psychological health (Balistreri, 2015; Loman & Gunnar, 2010; Shonkoff et al., 2012).

Effects of stress. As previously stated, the impact of trauma extends beyond mental disorders and includes the body's response. Perpetual trauma and the body's response to certain traumatic triggers can keep the HPA axis releasing cortisol without shutting off, leading to PTSD symptoms (Helsel, 2014). Children exposed to ACEs show low levels of cortisol in the morning, with some producing blunted levels, while others produce over-elevated levels throughout the day compared to the cortisol levels of children with no ACEs (Slopen et al., 2014). Over-activation of the stress response system puts a child at risk for developing attention impairment and emotional regulation problems, and it also stunts physical growth and brain development (Loman & Gunnar, 2010).

Shonkoff et al. (2012) defined three types of stress responses. First, a positive stress response is a state that is brief and mild in magnitude. Second, a tolerable stress response is associated with exposure to non-normative experiences, which produce a higher-level response. The third form is a toxic or chronic stress response, which results from prolonged, strong, and frequent activation of the body's stress response system. Although resiliency can occur during stress responses due to a multidimensional nature, one can be resilient in one domain and not in another (Perkins & Jones, 2004). Toxic stress can lead to many unseen physical problems. According to Shonkoff et al. (2012), toxic stress can lead to functional differences of learning, can impair memory, and can change the structure of the pre-frontal cortex, which impacts executive functioning for fetuses, infants, and children in early developmental stages. Toxic stress can also lead to the loss of neurons and their neural connections in parts of the brain that help regulate anxiety, memory, and mood. Additionally, it can affect immune system functioning, which can cause more illnesses over the lifespan. These illnesses include cardiovascular disease (Araújo et al., 2009; Galkina & Ley, 2009; Ward et al., 2009), hepatitis (Heydtmann & Adams, 2009), cancer (Berasain et al., 2009; Ruini et al., 2015), asthma (Chen & Miller, 2007), autoimmune disease (Li, Zhou, Feng, & Su, 2009), and depression (Danese et al., 2007; Danese et al., 2008; Howren & Lamkin, 2009), which can cause premature organ failure and can result in an inability to properly cope with stress and trauma (Shonkoff, 2012).

Early traumatic life experiences leave lasting genetic impressions and predispositions on brain development and health (Ghosh Ippen et al., 2011; Shonkoff et al., 2012). Early life environmental factors impact coordination between the timing and

pattern of gene expression, upon which each one of our perceptual, cognitive, and emotional capabilities is established (Fox, Levitt, & Nelson, 2010; Grossman et al., 2002; Singer, 1995). Also, Liaw and Brooks-Gunn (1994) found that as the number of risks (e.g., biological, economic, and familial) increased, child IQ decreased. In addition, Sameroff and Seifer (1993) found that as risk factors increased, so did negative developmental outcomes. According to Lansford et al. (2002), physical abuse that occurs during the first five years of life can predict future psychological and behavioral problems.

In addition, the systems that affect the endocrine system, autonomic system, and behavioral responses are plastic, meaning that children can develop healthy attention and appropriate emotional regulation responses when faced with perceived stress (Loman & Gunnar, 2010). Cortisol activity can change through psychosocial interventions, providing the potential for a child's stress responses to heal after trauma (Slopen et al., 2014). When children experience good caregiving, proper regulation of the activation of the stress response system is enhanced (Loman & Gunnar, 2010).

Trauma-based mental disorders. Trauma not only affects the developing body and mind, but it can also lead to mental health concerns later in life, such as chronic depression and suicidality (Felitti & Anda, 2010; Ghosh Ippen et al., 2011; Lansford et al., 2002; Shonkoff et al., 2012). The most common mental diagnoses for children who have suffered trauma are separation anxiety, oppositional defiant disorder (ODD), phobias, and attention-deficit hyperactivity disorder (ADHD; Van Der Kolk et al., 2005). Other childhood trauma related disorders that affect the body include conversion disorder (CD; Güleç, Ýnanç, Yanartaþ, Üzer, & Güleç, 2014; Roelofs, Spinhoven, Sandijck,

Moene, & Hoogduin, 2005; Sar, Akyüz, Kundakçi, Kiziltan, & Dogan, 2004; Sharma, Giri, Dutta, & Mazumder, 2005), alexithymia (Ebeling, Moilanen, Linna, & Räsänen, 2001), depressive disorders (Janssens, Rosmalen, Ormel, Van Oort, & Oldehinkel, 2010), and somatoform disorders (Verrotti et al., 2009). According to the American Psychiatric Association (2013) and Van Der Kolk, Roth, Pelcovitz, Sunday, and Spinazzola (2005), adults who have not resolved the impact of childhood trauma might have the following specific trauma-related mental health diagnoses: posttraumatic stress disorder (PTSD), acute stress disorder (ASD), adjustment disorders, and other specified or unspecified trauma related disorders. Furthermore, trauma might also be an underlying cause of the following mental health diagnoses that can manifest in adulthood: anxiety disorders (Hovens et al., 2010; Hovens et al., 2012), mood disorders (Scott, McLaughlin, Smith, & Ellis, 2012), eating disorders (Meltzer-Brody, et al., 2011), somatization disorders, substance abuse disorders, and sleep disorders (American Psychiatric Association, 2013; McCall-Hosenfeld, Mukherjee, & Lehman, 2014; van Nierop et al., 2015). Although some mental health concerns are hereditary, substance induced, or organic, others can be connected to childhood trauma. The Adverse Childhood Experiences study (ACE study) is currently helping researchers in health-related fields better understand childhood trauma and its connection to overall health (Felitti, et al., 1998).

The Adverse Childhood Experiences Study

The ACE study was a collaborative effort by Kaiser Permanente and the U.S. Centers for Disease Control and Prevention (Felitti & Anda, 2010). Felitti and Anda (2010) utilized the ACE study to further understand the leading health problems in the United States. The ACE study was an outgrowth of a weight loss program with a high

dropout rate. Felitti and Anda (2010) have attributed the high rate of dropouts within their weight loss program to early childhood trauma, which they believed impeded weight loss in the program unconsciously and occasionally consciously. Through research, Dr. Felitti found that many who dropped out of the weight loss program used obesity as a shield; many were physically or sexually abused as children (Anda & Felliti, 2003). In addition, many weight loss program dropouts had used tobacco, alcohol, or street drugs in attempts to deal with their past adversity (Anda & Felliti, 2003).

The over 17,000 subjects of the ACE study came from middle-class socioeconomic backgrounds. Eighty percent were of European American descent, which included those of Hispanic descent. Seventy-four percent attended college at some point, and the average age was 57 years. The study was conducted in San Diego, CA, and half of the participants were male (Felitti & Anda, 2010). In the study, 10 categories were measured retrospectively through the ACE questionnaire, which measures the occurrence of the following traumas during the first 18 years of life: (a) parental divorce/separation, (b) death of parent/guardian, (c) parental jail time, (d) living with someone considered mentally ill, (e) substance abuse in the home, (f) violence in the home, (g) violence in neighborhood, and (h) economic hardship. For each category, a point was given if someone had experienced an event during childhood. If an event had not been experienced, no point was given (Felitti & Anda, 2010). Only one-third of participants had a score of 0. For those with 1 point, there was an 87% chance that they had at least another point. Finally, one in six people had an ACEs score of 4 or more, and one in nine had a score of 5 or more. Women had 50% more scores of 5 or greater than men did (Felitti & Anda, 2010).

Recently, Sacks et al. (2014) have used The National Survey of Children's Health (NSCH) data from 2011-2012, for which 95,677 interviews were conducted, to measure the prevalence of eight of the ten ACEs at a state level. Sacks et al. discovered that a slight majority (54%) of children had an ACEs score of 0. However, in 16 states, more than half of the children reported an ACEs score of at least 1. Connecticut, Maryland, and New Jersey had the lowest prevalence rates of ACEs scores, with at least 60% of children reporting an ACEs score of 0. Conversely, Oklahoma, Montana, and West Virginia had the highest rates of reported occurrence of four or more ACEs, ranging from 10-12% of the sample (Sacks et al., 2014). The most common ACEs in all 50 states were economic hardship and parental divorce/separation. Living with a parent who had abused substances was the third most prevalent of the ACEs in 45 states (Sacks et al., 2014). Sacks et al. also found that more than 10% of children had an ACEs score of 3 or more, and in some states, the prevalence rates increased to 17%. These statistics might aid in the speculation that surrounds the results of the ACE study. Felitti et al. (1998) believed an understatement of the numbers of incidents for those who were suffering from early childhood adversity occurred during the ACE study. In addition, the need to establish hope as a potential moderating condition to help curb the prevalence of ACEs might be important.

Adverse childhood experiences health findings. The ACE study's findings reach beyond early childhood trauma and impact adult medical health, mental health, other societal issues, and economic problems (Felitti & Anda, 2010). Women who experience ACEs are more at risk to develop depression (54%) and suicidality (58%). However, other factors remain for the previously aforementioned depression states and

levels of suicidality of women who experience ACEs (Felitti & Anda, 2010). The most common health risk associations of ACEs are smoking, alcohol abuse, substance abuse, obesity, and promiscuity.

Findings from the ACE study revealed that smoking, alcohol use, and drug abuse positively correlated with ACE scores in a dose-response manner, meaning that greater levels of exposure to ACEs equate to increase in risky behaviors. Those with an ACE score of 4 or more showed a 12-fold increase in such risky behaviors as alcohol abuse, drug abuse, and suicide when compared with those with no ACE score (Dube, Felitti, Dong, Giles, & Anda, 2003; Felitti & Anda, 2010). In addition, males with an ACE score of 6 or higher have a 4,600% higher chance of using intravenous drugs than males with an ACE score of 0 have (Felitti & Anda, 2010). Furthermore, sexual promiscuity, which is shown through teenage pregnancy, miscarriage, and number of sexual partners, also positively correlated with ACE score in a dose-response manner (Felitti & Anda, 2010). Felitti and Anda (2010) also found links between medical diseases and ACE score. These findings include liver disease, chronic obstructive pulmonary disease (COPD), coronary artery disease, and autoimmune disease with positive correlations to ACEs. Felitti and Anda offered two reasons for the positive correlations between ACE score and medical diseases. The first includes conventional risk factors, such as smoking or drug use, which increase the chances of health problems without the presence of ACEs. The second involves the impact of chronic stress on the body due to unresolved childhood experiences.

Support of adverse childhood experiences. Kalmakis and Chandler (2013) operationally defined ACEs as "childhood events, varying in severity and often chronic,

occurring within a child's family or social environment that cause harm or distress, thereby disrupting the child's physical or psychological health and development" (p. 1495). Within the current ACE questionnaire, the first three questions address childhood emotional, physical, and sexual abuse (Felitti et al., 1998). Perkins and Jones (2004) asserted that experiencing abuse as a child has an impact equal to the impact of the continuous stress of war, an overwhelming experience. Furthermore, Gilbert et al. (2009) reviewed literature from 2000 to 2008 and found that 80% of children who experienced maltreatment in high-income countries experienced parental or guardian abuse, excluding sexual abuse (Gilbert et al., 2009). Children who have been exposed to one type of maltreatment typically have been frequently exposed to others (Gilbert et al., 2009). In addition, multiple victimization is a normal occurrence for child abuse victims. Multiple and varying traumas result in a greater severity of symptoms and adversity faced over the lifespan (Appleyard, Egeland, van Dulmen, & Sroufe, 2005; Finkelhor, Ormrod, & Turner, 2007; Tomasdottir et al., 2015). Common risk factors for childhood victimization include both environmental factors (families and neighborhoods) and personality traits (self-esteem level and learned helplessness; Finkelhor et al., 2007).

ACEs can occur in utero, and studies investigating both animals and humans have shown that fetal exposure to maternal stress influences stress responses later in life, possibly altering neural circuitry (Friemoth, 2014; Ghosh Ippen et al., 2011; Shonkoff et al., 2012). Findings from both neurobiology and epidemiology suggest that early life experiences of stress and ACEs can cause brain dysfunction and impairment throughout the lifespan (Anda et al., 2006). Development during the early years of life influences learning, behavior, and physical and mental health throughout the lifespan. During the

first few years of life, any developmental difficulty can disrupt the capacity to engage in goal-directed activities throughout the lifespan. This is due to the impact on executive functioning, on the pre-frontal cortex, and on self-regulation during the infancy stage of development (Shonkoff et al., 2012).

To get a better understanding of the impacts of early childhood trauma, Flaherty et al. (2006) examined household dysfunction and child physical health for children who were age 4 at the time of the study. At age four, two-thirds of participants had at least one ACE. In this study, having at least one ACE doubled the likelihood of a child having poor health. The presence of four or more ACEs almost tripled the likelihood of childhood illness compared to those with an ACE score of 0 (Flaherty et al., 2006). In addition, Mossey and Shapiro (1982) reported that the principle predictor of self-rated health is the number of health problems a person reports, with the second most important factor being life satisfaction. The lasting biological markers of ACEs include alterations of immune system function (Li et al., 2009), inflammation (Shonkoff et al., 2012), cardiovascular disease (Araújo et al., 2009; Galkina & Ley, 2009; Ward et al., 2009), hepatitis (Heydtmann & Adams, 2009), cancer (Berasain et al., 2009; Ruini et al., 2015), asthma (Chen & Miller, 2007), chronic obstructive pulmonary disease (Shonkoff et al., 2012), poor dental health (Shonkoff et al., 2012), and depression (Shonkoff et al., 2012).

Risky behavior that affects health is a link between ACEs and adult disease. Findings from the ACE study revealed that the more a person experiences aversive events during childhood, the more risk factors a person has for the leading causes of death in the United States (Felitti et al., 1998). In addition, a high correlation between ACEs and poor adult health and high health care usage has also been noted (Chartier, Walker, &

Naimark, 2009; Monnat & Chandler, 2015). It is difficult to distinguish the factors that influence health the most, but Chartier et al. (2009) suggested that physical and sexual abuse have the highest impact on later life health. Chartier et al. estimated that 10-20% of children witness inter-parental violence, that 4-16% of those inter-parental acts of violence are severe, and that 15-30% of girls and 5-15% of boys experience sexual abuse. Poor mental health during childhood that results from ACEs is linked to poor physical health during adulthood (Chartier et al., 2009). In addition, Monnat and Chandler (2015) found that parental divorce positively correlates with the risks for a heart attack. Prevention or reduction of ACEs will affect health throughout the lifespan, positively impacting society as a whole (Shonkoff, 2012).

Hope Theory

The above mentioned serious mental and physical health risks associated with exposure to ACEs necessitate urgency in helping people who have been exposed to them. Although there are numerous approaches to treating people who have been traumatized by ACEs, hope theory is one approach that might warrant more consideration. Discussing hope theory begins with defining the concept of hope. Snyder (2002) defined hope as a positive motivational state that incorporates a sense of goal-direction and a plan to meet those goals. Expounding on Snyder's definition, Marques et al. (2011) defined hope theory as a staging process beginning with intentionality that leads to an action promoting personal adaptation for goal attainment. Hope begins with goal-setting and involves setting goal targets that hold a level of uncertainty. Next, pathways are goal-directed activities that a person chooses to obtain his or her goal. Finally, through motivation and determination, agency will produce an ability to create and support goal-

directed behavior (Marques et al., 2013). Two ways of thinking, agentic and pathway, are at the foundation of hope by providing the necessary steps for goal attainment, and both ways of thinking can buffer against acute negative life events (Lopez et al., 2014). However, they will fail to help a person reach a goal if they are standalone concepts, because pathway and agency thinking are reciprocal and additive (Lopez et al., 2014). In overcoming ACEs, one must be motivated to do so and to find ways to overcome those experiences. Characteristics of those with high hope include future direction, a focus on success, optimism, having life goals, the perception of self as capable, and higher social competence (Lopez et al., 2014). Hope theory encompasses optimism, self-efficacy, and problem-solving as necessary components of goal pursuit (Feldman et al., 2009; Lopez, et al., 2014). Agentic thinking is the perceived capability of reaching a goal, with motivation being key to the obtainment of agency, which is the ability to think autonomously (Snyder, 2002; Snyder et al., 1996). On the other hand, pathway thinking is the means one uses to reach a goal (Snyder et al., 1996). Agency and pathway components interlink, and both components are necessary to reach goal attainment. If a person is missing either agency or pathway thought, goals will be unrealized (Feldman & Snyder, 2005). Creating goal direction begins with the interaction of agentic and pathway thinking. Goal-directed thinking supplies the link between the present and the future, which incorporates pathway thinking, or how to get from point A to point B (Snyder, 2002). Goals are visions and thoughts. They are expressed verbally, they vary temporally, they hold a value, they can be positive or negative, and their obtainment is held with some doubt (Snyder, 2002). The importance of a goal influences both agency and

pathway thinking. Goals adjust with the recent success or failure of goal pursuits (Feldman, Rand, & Kahle-Wrobleski, 2009).

Hope theory challenges the concept that correct perception of reality is key to psychological health (Snyder, 1989). Hope is a perception, not necessarily a reality, but a cognitive foundation that brings together goal pursuits (Feldman et al., 2009). When people view reality, they do so through a biased lens that serves to protect the idea of a positive self-image (Snyder, 1989). The image of self is a construct defined through multiple interactions, and it is through interpretation of those interactions that people desire a positive image and a perceived ability to control their lives. This view of self-concept lends itself to hopeful thinking (Snyder, 1989). Self-schemas are thought to change throughout one's lifetime, and one's self-concept is based on multiple perceptions. Because perceptions of self-image change over the course of the lifespan, people experience different levels of hope throughout their lives (Snyder, 1989). Conversely, victimization lies at the opposite end of the spectrum as hope does. While hope gives people a perceived ability to control their lives, awareness of victimization creates an awareness of loss of control, loss of self-esteem, and loss of hope (Taylor, Wood, & Lichtman, 1983). Hope helps create the pursuit of goals through goal-directed thoughts, which can be large or small and can take minutes or years. A goal can be anything a person desires (Feldman & Snyder, 2005; Lopez et al., 2014). Hope can be temporary or a personality trait, and it is built upon contingency of thought through the planning of meeting the goals.

Snyder (2002) differentiated hope theory from theories of optimism and self-efficacy. Hope theory is different from optimism because of the focus on outcome.

Snyder (2002) suggested that optimistic goal-directed thoughts distance a person from negative outcomes or encompass generalized outcomes, whereas hope theory focuses on goal-related, positive outcomes and equal emphasis on the two types of thought (agentic and pathway). Hope theory also theorizes goals as (a) continual, (b) based on one or multiple situations, and (c) expectancy based (Snyder, 2002). According to Snyder (2002), this differs from self-efficacy, in which emphasis is placed on one's ability to create routes toward goals and adapt along the way to achievement.

In addition, Duggal et al. (2016) stated, "Hope and resilience are both stable, psychological traits that can act as protective factors against adversity" (p. e849). However, hope is different from resilience. Resilience is the ability to adapt well or thrive in the face of adversity through healthy adjustment and posttraumatic growth, which is positive adjustment after trauma (Brewer-Smyth & Koenig, 2014; Dreyer, 2015). Hope focuses on a future orientation, while resilience focuses on one's present state of being. Hope lowers psychological distress and suicidality in the same manner that perceived resilience does (Cleverley & Kidd, 2011).

While holding hope as a perceptive construct, Jenmorri (2006) defined hope and despair (hopelessness) as being at opposite ends of a continuum or paradox through an interconnected relationship. Hopelessness is a distorted personal schema for those who are depressed. It is not equivalent to false hope. Snyder (2002) defined false hope as (a) being out of touch with reality, (b) an experience of illusions, (c) poorly chosen goals (too broad, or bad goals), or (d) a representation of bad planning. Although false hope includes thoughts and ideas of self that are not fully based in reality, the perception is not necessarily negative. Within the concept of hope, Snyder (2002) did not differentiate

false hope. These thoughts can continue to aid in coping, can give paths to new directions in life, and can add positivity to the self-concept (Snyder, 1989).

Hope as protection. According to Feldman and Snyder (2005), hope plays a part in bringing about life-meaning, and hopeful thought is an important part of perceiving life as meaningful. The shaping of life's meaning occurs through goal pursuit, an aspect of hope (Feldman & Snyder, 2005). Life satisfaction increases through the exploration of not only goal-centered thought but also the content of goals and the ways in which one can achieve his or her goals (Marques et al., 2013). At times, people will make excuses to distance themselves from the negative outcomes of life and will use hope as a coping mechanism to bring about the positive outcomes they desire (Snyder, 1989). The re-creation of meaning and purpose is a central task in coping with traumatic events (Jenmorri, 2006). An individual's perception of trauma might deflate resolve and lessen hope, which stagnates motivation and the view of pathways to attain goals (Snyder, 2002). Snyder (2002) also proposed that goal pursuit might become stressful if a person realizes it might not be achieved. In addition, Snyder (2002) postulated that goal pursuit is not accurately appraised until pursuit begins. Those with low hope might succumb easily to stressors, especially when traumatic events occur (Snyder, 2002). Hope provides support when facing life's challenges and when using a selective evaluation process, another perceptive capacity, minimizing victimization through focusing on benefits (Taylor et al., 1983). Hope is vital during difficult times in life because it can help create a more positive perception of the difficult challenges, deepening hope and resolve (Jenmorri, 2006). Parse (1999) found that across culture and age, hope affirms meaning and can be heightened through difficulty.

In addition, Snyder (2002) theorized that hope is also lost if traumatic events occur, such as neglect, physical abuse, or the loss of a parent. Hope is connected to perception and cognitions, which are impacted negatively when abuse or neglect occur. Hoffman-Plotkin and Twentyman (1984) found that abused and neglected children had significantly lower scores on all three measures of cognitive functioning administered when compared to children who experienced no abuse or neglect. In addition, Nickerson et al. (2013) found that parental loss is associated with psychological distress, which can affect cognition. Furthermore, Shorey et al. (2003) found support that secure attachments to parental figures helps develop hopeful, goal-directed thinking.

Similarly, Snyder (2002) argued that adults lose hope if they lose a partner or a job, if trauma occurs, or if they are diagnosed with a mental illness. Hope is not born out of isolation, and losing a partner diminishes the ability to hope (Snyder, 2002). Sympson (2000) studied trauma survivors and theorized that trauma leads to a loss of agency and fewer pathways, reducing goal-direction. With mental illness, Snyder (2002) theorized that those diagnosed with mental illness are limited by that label and reduce goal pursuits to fit the given label. In addition, Waynor, Gao, Dolce, Haytas, and Reilly (2012) asserted that psychiatric symptoms can lead to a decrease in hope, and they found that hopelessness and mental illness symptoms were positively related during their study, while hope and mental illness symptoms were inversely related.

Hope can be a strength that buffers against the effects of negative life events (Marques et al., 2013), and individuals with higher hope might have had success in reaching earlier goals (Marques et al., 2013; Snyder et al., 1996). When further describing hope theory, Shadlow, Boles, Roberts, and Winston (2015) stated, “Hope

theory at its core, posits that higher levels of hope reflect a raised sense of cognitive energy, which increases the ability to overcome barriers and obstacles to reach a goal" (p. 1709). During a longitudinal study, Feldman et al. (2009) found that hopes are adjusted as experience provides success or failure. In addition, Jenmorri (2006) theorized that hope and spirituality are integral parts of trauma recovery, which has been underscored by the findings from the study that Marques et al. (2013) conducted, which demonstrated that both hope and spirituality increase life satisfaction. Also, when hope and spirituality combine as coping mechanisms, positive psychological functioning increases (Jenmorri, 2006; Marques et al., 2013). However, Marques et al. (2013) also found that as distance from the time a traumatic event occurs increases, the impact of hope and spirituality on life satisfaction decreases.

In addition, people with higher levels of hope might use humor as a coping mechanism (Vilaythong, Arnau, Rosen, & Mascaro, 2003). Humor helps a person reframe a problem into a challenge rather than a threat. Furthermore, through viewing merely 15 minutes of comedy, hope increases significantly (Vilaythong et al., 2003). Vilaythong et al. (2003) proposed that humor can positively influence hopefulness by influencing an expansion of thought and self-efficacy. Hope is a contagion that flows from one person to another, which aids its value as a protective factor (Lopez et al., 2014).

Learned helplessness. Having future-oriented goals or perceiving control over future events might help in aiding and protecting individuals after trauma. Learned helplessness was defined in the 1960s after a study in which Overmeir and Seligman (1967) theorized that animals' learned outcomes of adverse events were not dependent on

their responses. Helplessness was viewed as one's subjectively learning that nothing he or she does to escape adverse events matters. However, it is now theorized through recent neuroscience research that neural passivity, or helplessness, is a default mechanism controlled by the mind (Maier & Seligman, 2016). As noted earlier, the stress response system is complex and is composed of many hormones and neural circuitry. Maier and Seligman (2016) stated that one must learn to overcome the base stress response of passivity and anxiety, both created by neural circuitry. Maier and Seligman also suggested that it is not the lack of control that produces learned helplessness, but rather the perception of having a presence of control over future adverse events. The perception of control over future events might help one overcome some of the passivity and anxiety associated with adverse events (Maier & Seligman, 2016). Learning to overcome adverse events through the expectation that future bad events can be controlled might be initiated by a perception of control and a hopeful perspective.

Demographics of hope. When attempting to ascertain if hope appears to be more common among different groups, Lopez et al. (2014) found no apparent gender differences at various age levels. Through sampling and through their earlier research, Lopez et al. (2014) found that most American children are hopeful. Furthermore, they concluded that minorities display higher levels of hope compared with European Americans. This is important, as this study had a clear majority of subjects who defined themselves as Caucasian, thus they might display lower levels of hope. People respond to childhood trauma differently, and it is likely that some perceive or use adverse experiences as a catalyst for growth (Linley & Joseph, 2004). Consequently, some might desire to grow out of such an experience (Bandura, 1993).

Growth After Trauma

Trauma can affect an individual positively or negatively, or it can include a mixture of both experiences (Calhoun & Tedeschi, 2004). People have experienced posttraumatic growth after traumatic events. However, exposure to trauma does not define how a person will respond to traumatic events. Trauma does not mean that a person will experience negative effects as a result of the event. High levels of resilience might buffer the effects of trauma (Brewer-Smyth & Koenig, 2014; Wusik, Smith, Jones, & Hughes, 2015). Linley and Joseph (2004) stated that a change can occur in a person after trauma through a perception of growth and an examination of the distress after trauma. Although growth and distress are two differing dimensions of a spectrum, they both influence each other. However, the assumption that growth and distress are interrelated concepts needs further consideration. Higher levels of either growth or distress after trauma do not necessarily determine the level of the other (Linley & Joseph, 2004). The severity of trauma might influence a person's ability to find positivity after trauma. In fact, it is possible that the severity of the stressors associated with trauma has a greater impact on a person than the overall quantity of stressors (Vilaythong et al., 2003). Helsel (2014) theorized that trauma symptoms expressed through the body are forms of resistance against trauma that has occurred in the past. The perception of trauma is reflected by the body's response to the violation. By perceiving these bodily responses as forms of resistance against trauma, victims are less likely to blame themselves for problems they face afterward. Resistance might affect perception and display a future orientation, or as Helsel (2014) argued, a will to survive, which coincides with the definition of hope, a future orientation (Snyder, 1989).

Perceptive growth. One area in which trauma affects a person is through a general sense of losing control, which can be defined as, "…the belief that one has at one's disposal a response that can influence the aversiveness of an event" (Thompson, 1981, p. 89). Through the magnification of events and the severity of threats, a person can become hypervigilant (Bandura, 1993). The ability or perception of control becomes a belief through identification of one's self-schema. Self-schema creation occurs through multiple interactions in which people want a perceived ability of control over their lives (Snyder, 1989). People's perceptions of their ability to cope with trauma as well as their perceptions of their ability to control disturbing thoughts help curb the impact of stress brought about from trauma. Indeed, many researchers believe that people's responses after a traumatic event are driven by their own perceptions of their ability to cope with the situation (Bandura, 1993).

One's perception of control occurs through predictability of life events, through one's self-image, and through inclinations into future outcomes. Perception of control can reduce stress after adverse events. However, the preeminent factor that determines the outcome of a traumatic event is the person's ability to cope, which is the person's own perception of his or her ability to withstand such an event. If a person perceives that an event is beyond her or his ability to cope, stress will increase (Thompson, 1981). Additionally, children might have a more difficult time after experiencing trauma due to an inability to resist negative self-attribution (Finkelhor, Ormrod, & Turner, 2007). Children might also have a difficult time coping after trauma due to not knowing enough coping mechanisms. Furthermore, children might have a harder time coping when they experience trauma from multiple sources (Finkelhor et al., 2007). According to Snyder

(2002), the loss of hope for children begins when caregivers do not adequately teach hope. This could have affected the results of this study, because children who do not learn hopeful thinking in childhood might not be able to reflect hopeful thought in adulthood (Snyder, 2002).Posttraumatic growth occurs when a person experiences a positive change following a traumatic event (Kaye-Tzadok & Davidson-Arad, 2016; Park, 1998). Linley and Joseph (2004) termed positive changes after trauma as "adversarial growth", but positive changes can also be called posttraumatic growth, stress-related growth, perceived benefits, thriving, blessings, and positive adjustment, among others. Taylor (1983) argued that adjustment after trauma encompasses three themes: a search for meaning, a regaining of control over life circumstances, and an enhancement of self-esteem through a positive self-perspective. Taylor et al. (1983) defined five mechanisms for avoiding a victim mentality after trauma: (a) the perceptions of socially downward comparisons (social comparisons with people less fortunate), (b) focusing on advantages, (c) having an illusionary belief system, (d) perceptions of the benefits of trauma, and (e) creating new self-standards to appear exceptional. These five mechanisms are based on one's perspective. The first four involve minimizing victim status, while the last involves acknowledging victimization. The crux of these perspectives is that positive coping can occur through a change of perspective. Taylor et al. (1983) proposed the term *selective evaluation* to define these five mechanisms of avoiding victimization status.

Similar to Taylor et al.'s (1983) mechanisms for avoiding a victim mentality after trauma, Snyder (2002) defined two preventative types of thought against physical illness: thoughts about preventing health problems before they occur (primary prevention), and

thoughts about containment when problems arise (secondary prevention). Primary prevention occurs on an individual scale, and those with higher levels of hope engaged in more preventative activities (Snyder, 2002). Secondary prevention pertains to coping with physical illness, medical adherence, and continuation of medically necessary treatment (Snyder, 2002). People with high levels of hope cope and adhere to medical regimes very well. These studies show the usefulness of having a perspective of hope.

In addition, Park (1998) identified two types of perspective appraisals a person has when dealing with trauma: primary appraisals and secondary appraisals. Primary appraisals focus on (a) one's ability to control the event, (b) violation of beliefs, (c) expectations, and (d) goals against the threatening event. Secondary appraisals focus on the resources available to cope with the trauma. These appraisals involve evaluating the type of stressor (threat, challenge, or loss) and what can be done to cope. To date, the links between both types of appraisals and stress-related growth are mostly conjecture (Park, 1998).

Furthermore, Calhoun and Tedeschi (2004) believed that five life domains impact posttraumatic growth and psychological functioning: the ability to view new possibilities, a changing of relationships, the paradox of viewing self as stronger and more vulnerable, a greater appreciation for life, and a change in spirituality. These domains encompass one's perspective and allow an individual to feel greater life satisfaction and well-being while also decreasing depression and anxiety.

The theories of Taylor et al. (1983), Snyder (2002), Park (1998), and Calhoun and Tedeschi (2004) focus on the perspective of the victim to create a positive reality. Focusing only on the negative impacts of trauma creates bias and a negative mental filter

through which other events that occur in life are perceived (Linley & Joseph, 2004). However, for those who experience trauma, the influence of hope and growth limits the impact of adverse events before, during, and after the event occurs.

Growth's subjectivity. Posttraumatic growth tends to precede bodily health improvements, but the alleviation of distress does not automatically mean that growth will occur (Affleck & Tennen, 1996; Calhoun & Tedeschi, 2004; Linley & Joseph, 2004; Wusik et al., 2015). However, ruminations and intrusive thoughts positively associate with growth, showing the need for processing trauma; and even though distress might continue, personal growth can still occur (Affleck & Tennen, 1996; Calhoun & Tedeschi, 2004; Linley & Joseph, 2004; Wusik et al., 2015). Reports of growth might change over time due to a myriad of factors that influence the rate of growth (Calhoun & Tedeschi, 2004). Survivors of traumatic experiences perceive benefits and harm from traumatic experiences, and growth can occur at different rates. This suggests that people can choose to psychologically recover from trauma and to identify the positive aspects of trauma while not dismissing the negative aspects (McMillen, 1999; Park, 1998). However, it is unclear if posttraumatic growth occurs out of trauma itself or because of a natural maturation process (Ruini et al., 2015).

After reviewing 39 studies that used the differing measures of posttraumatic growth, Linley and Joseph (2004) showed that the subjective experience of trauma affects the influence of growth more than the event itself does, and Kaye-Tzadok and Davidson-Arad (2016) have found similar results. Also, Park (1998) noted that people with more hope, optimism, and an expectation of a positive outcome through goal attainment are more likely to report growth experiences. Furthermore, Taylor (1983) proposed that

positive self-adjustment depends on the person's ability to develop positive illusionary beliefs that help promote well-being and fight against threats. Growth out of trauma does not discount the suffering one experiences after trauma, nor should it imply that growth occurs in all areas of one's life.

Affleck and Tennen (1996) summarized that the perceived benefits that come from adversity predict emotional well-being in medical trauma survivors more than the severity of medical conditions does. The subjective view of finding benefits in the face of trauma relates to positive adaptational outcomes after medical traumas (Affleck & Tennen, 1996). However, Linley and Joseph (2004) found that greater levels of the perceived harmful nature of a traumatic experience associate with higher levels of growth. Linley and Joseph (2004) did find a curvilinear relationship between the benefits of trauma and exposure to trauma. Active coping, acceptance, positive reinterpretation, spiritual coping, positive social support, and emotion-centered coping positively correlate with posttraumatic growth (Linley & Joseph, 2004). In addition, Kaye-Tzadok and Davidson-Arad (2016) reviewed 103 studies and found that spirituality and positive coping skills most influenced the occurrence of posttraumatic growth.

Benefits of posttraumatic growth. Affleck and Tennen (1996) studied people with various medical problems, including heart attack survivors, women with breast cancer, and stroke victims, among others. The purpose of their study was to determine whether survivors of medical trauma can see personal benefits from their medical adversities (Affleck & Tennen, 1996). Common beneficial themes that emerged from their study are greater attention to relationships, a positive personality change, and a

change of values in life goals (Affleck & Tennen, 1996; Kaye-Tzadok & Davidson-Arad, 2016).

Benefits from trauma can include (a) understanding self-reliance through assertiveness, which can lead to a change in the perception of self; (b) changes in social relationships, and (c) a change in one's philosophy of life (Tedeschi & Calhoun, 1996). These changes can increase one's knowledge of self-vulnerability through trauma and can lead to increased emotional vulnerability, further willingness to accept help, and new utilization of social supports. Balistreri (2015) found that children who have continuous and comprehensive healthcare from infancy to young adulthood have higher levels of well-being, spanning across physical, psychological, and social health strata, including educational attainment.

When evaluating the long-term effects of posttraumatic growth, Linley and Joseph (2004) found that positive affect, negative affect, and self-efficacy significantly associate with growth after trauma. When discussing self-efficacy, Møller, Kristensen, and Hollnagel (1996) described the concept as a person's own appraisal of his or her health as a predictor of her or his mortality. Treating trauma should not solely focus on reducing symptoms, but it should also focus on creating narratives and considering the positives that individuals can bring to their own healing (Calhoun & Tedeschi, 2004). The motivation to forgive promotes posttraumatic growth, and motivation after trauma cannot occur unless there is some hope to move past the events that occurred (Wusik et al., 2015). Forgiveness is defined as a process, which includes a remembrance of past events and also includes a requirement of a strategy toward a future direction or goal

(Denton & Martin, 1998; Oettingen, 2012; Wusik et al., 2015). This is how hope is defined, as having a future-oriented thought (Snyder, 1989).

Rationale

The focus of the present study was to examine the relationships between ACEs, hope, physical health, and personal growth after trauma. The ACE study has produced abundant information showing how much ACEs affect physical, psychological, and behavioral health (Anda et al., 2006; Felitti et al., 1998; Friemoth, 2014; Kalmakis & Chandler, 2013; Lansford et al., 2002). ACEs have a significant impact on society, and therefore they require moderating variables to reduce the long-term consequences with which they are associated (Ghosh Ippen et al., 2011; Monnat & Chandler, 2015; Sacks et al., 2014; Shonkoff et al., 2012; Slopen et al.,, 2014). Past research has focused on how to prevent ACEs from occurring, but researchers now are changing their approach and are focusing on bringing awareness to ACEs and altering the ways trauma is addressed across disciplines of public health (Lansford et al., 2002; Norris & Slone, 2013; Shonkoff et al., 2012). It appears that there is a lack of research that examines hope as a moderating variable of the effects of ACEs, which leads to the purpose and significance of this study.

It has been discussed that higher levels of hope produce better outcomes of educational attainment, overall cognitive ability, increased life satisfaction, and decreased symptoms of mental illness, but the impact of hope on trauma has not yet been tested (Hoffman-Plotkin & Twentyman, 1984; Jenmorri, 2006; Marques et al., 2013; Nickerson et al., 2013; Snyder et al., 1996; Waynor et al., 2012). To this degree, when ACEs occur, those exposed become more susceptible to many physical and mental health issues. Hope was viewed as a possibly moderating variable to the degree to which ACEs affect the

stress response system and bodily health. Furthermore, hope and posttraumatic growth are attributed to overall health, growth, and transformation after trauma, yet researchers have not studied their link in the aftermath of trauma (Affleck & Tennen, 1996; Jenmorri, 2006). A thorough review of the literature suggests that these two items are interrelated, and I investigated whether hope is a moderating variable when subjective growth occurs after ACEs. The findings could help in understanding the role of hope in the aftermath of ACEs.

Hypothesis

Despite empirical research on levels of hope and positive outcomes, hope has not been found as a moderating variable to ACEs in any apparent study (Hoffman-Plotkin & Twentyman, 1984; Jenmorri, 2006; Marques et al., 2013). In addition, both hope and posttraumatic growth can occur in the aftermath of childhood trauma, and the data that have been collected suggest a possible linear relationship between these two variables (Calhoun & Tedeschi, 2004; Kaye-Tzadok & Davidson-Arad, 2016; Linley & Joseph, 2004; Snyder, 2002). Currently, it is unclear whether hope is a moderating variable when ACEs and posttraumatic growth co-occur. Regarding research that has specifically addressed ACEs and overall health, a positive dose-response relationship has been demonstrated (Felitti & Anda, 2010). However, a relationship between hope and overall health after ACEs has not been studied. Thus, considering the empirical research, the following hypotheses have been generated.

H1: Hope will positively correlate with adverse childhood experiences.

H2: Hope will predict posttraumatic growth.

H3: Hope will moderate the relationship between adverse childhood experiences and posttraumatic growth.

H4: Hope will predict overall health.

H5: Hope will moderate the relationship between adverse childhood experiences and overall health.

Chapter Two

Present Study

To expand on current literature, investigating hope as a moderating variable in the aftermath of ACEs is the focus of the present study. The procedure involved administering four surveys: the ACE questionnaire, the Trait Hope Scale, The Rand 36-Item Health Survey (Rand36-SF), and the Posttraumatic Growth Inventory (PGI). Specifically, I measured present ACE scores, Trait Hope scores, current self-reported physical health, and perceived growth after trauma through the PGI. The overarching hypothesis was that higher hope scores would moderate the effect of ACEs on physical health and posttraumatic growth. I tested this general assertion using three statistical methods: correlation, multiple linear regression, and moderation regression.

As discussed previously, hope is an important internal characteristic that helps provide structure in developing life meaning, which is important for those who have suffered trauma as children. In the present study, I utilized a correlational design to study whether there is a relationship between hope and ACEs. I also studied whether hope is a moderating variable to posttraumatic growth and to physical and emotional health for those who have experienced ACEs.

I first examined the relationship between hope and ACEs due to the lack of available literature addressing this topic. Next, I examined the relationship between hope and posttraumatic growth. In addition, I examined the relationship between hope and posttraumatic growth after ACEs through an instrument that measures trauma that occurs in the first 18 years of life. Literature has shown a possible linear relationship between hope and posttraumatic growth, which was explored during this study (Calhoun &

Tedeschi, 2004; Kaye-Tzadok & Davidson-Arad, 2016; Linley & Joseph, 2004; Snyder, 2002). Due to the lack of research regarding hope as a moderating variable between the relationship of posttraumatic growth and ACEs, I believe it was important to study hope as such.

Finally, I examined the relationship between hope and overall health, while I also examined the relationship between hope and overall health after ACEs. It is clear that there is a relationship between overall health and ACEs (Dube et al., 2003; Felitti & Anda, 2010), but hope as a moderating variable within this relationship has yet to be established.

Methods

Participants. There were 123 subjects who participated in this study, with 93 completing the entire survey. Of the 93 who completed the entire survey, there were 70 females (75.3%) and 23 males (24.7%). Twenty-nine percent of participants' categorical ages ranged from 30 to 39 years, 25.8% were between the ages of 18 and 29 years, 17.2% were between the ages of 40 to 49 years, 15.1% were between the ages of 50 to 59 years, and 12.9% were 60 years of age or older. Ethnic background information included 74.2% Caucasian, 16.1% African American, 6.5% for multiple ethnic groups, and 1.1% for each of American Indian or Alaskan Native, Asian/ Pacific Islander, and Hispanic ethnicity. Regarding relationship status, 65.6% were married, 12.9 % were single/never married, 9.7% were divorced, 5.4% were cohabitating, 2.2% were widowed, 2.2% were separated, 1.1% were in a domestic partnership, and 1.1% were in a relationship but not cohabitating. Of the social status categories included, most were of middle class standing (44.1%), 31.2% identified as lower-middle class, 12.9% identified as lower class, and

11.8% identified as upper-middle class. These data are illustrated in Table 1. There were two exclusion criteria for participation. First, participants had to consent to the survey and had to be age 18 or older. Four participants did not consent or were not 18 years of age or older. The second involved completion of the survey. Twenty-six did not complete the survey, and their incomplete data were not included in data analysis.

Table 1

Prevalence of Categories and Mean Scores by Demographic Characteristics

Characteristic	Sample Size (*N*=93)	Category (%)	Mean ACE Score	Mean Hope Score	Mean RAND36-SF	Mean PGI
Gender						
Female	70	75.30	3.46	47.76	100.86	39.33
Male	23	24.70	2.00	53.39	104.91	39.26
Age Group						
18-29	24	25.80	3.67	47.58	99.08	38.13
30-39	27	29.00	2.33	50.44	104.26	36.81
40-49	16	17.20	2.56	51.69	103.19	33.94
50-59	14	15.10	4.00	49.29	103.71	45.14
60 and older	12	12.90	3.33	45.83	98.08	47.67
Ethnic Group						
Caucasian	69	74.20	3.04	49.51	101.32	40.49
African-American	15	16.13	3.07	49.8	105.67	34.07
Multiple Ethnicity	6	6.43	3.67	45.33	101.5	38.17
American Indian	1	1.08	1.00	35	96	54
Asian/Pacific Islander	1	1.08	4.00	47	92	27
Hispanic	1	1.08	5.00	54	100	41
Social Class						
Upper-Middle	11	11.80	2.82	52.73	103.73	33.73
Middle	41	44.10	2.78	50.68	101.71	38.12
Lower-Middle	29	31.20	3.14	47.03	101.86	41.62
Lower	12	12.90	4.33	45.75	100.67	42.91
Relationship Status						
Married	61	65.60	2.98	50	102.79	40.29
Widowed	2	2.15	7.00	53.5	96.5	77.5
Divorced	9	9.68	3.56	45.22	102.56	38
Separated	2	2.15	2.50	50.5	99.5	64.5
Domestic Partnership	1	1.08	4.00	33	102	36
Single, Cohabitating	5	5.36	5.60	45.8	95	40.4
Single, Never Married	12	12.90	1.83	49	100.33	27.83
Not cohabitating	1	1.08	1.00	56	107	0

Materials.

Adverse Childhood Experiences questionnaire. The ACE questionnaire, used in the original ACE study that Felitti et al. (1998) conducted, measures 10 categories retrospectively during the respondent's first 18 years of life (see Appendix A). The purpose of the questions is to ascertain information about (a) psychological abuse (Did a parent or other adult in the household often or very often swear at you, insult you, put you down, or humiliate you?); (b) physical abuse (Did a parent or other adult in the household often or very often push, grab, slap, or throw something at you?); (c) sexual abuse (Did an adult or person at least 5 years older than you ever touch or fondle you or have you touch their body in a sexual way?); and (d) household dysfunction (Were your parents ever separated or divorced?). For each question with an affirmative response, a point is given. No point is given if the person has no such experience and answers "no" for each individual question (Felitti et al., 1998). The sum of scores of each positive response creates the participants' ACE score. The scale takes approximately two minutes to complete.

Murphy et al. (2014) studied the validity of the ACE questionnaire. The authors found that ACE responses were internally consistent, with a Cronbach's alpha measure of .88. The ACE questionnaire uses simple language, which helps overcome cultural and educational differences across societies (Pinto et al., 2014). However, Pinto et al. (2014) did note that the subjectivity of the questions about mental illness could produce unreliable responses due to the respondents' need of a definition of mental illness. The Behavioral Risk Factor Surveillance System (BRFSS) will not be employed for this study due to its viability for telephone interviews and to the lack of neglect questions.

Hope Scale. The Trait Hope Scale is a brief, internally valid and consistent self-report scale that assesses ongoing goal-directed thinking (see Appendix B). The scale addresses two types of thinking—agentic thinking and pathway thinking—in the current context of one's life (Snyder et al., 1996). The Trait Hope Scale assesses global positive expectancies, which help predict mental health outcomes (Shorey, Little, Snyder, Kluck, & Robitschek, 2007). Shorey et al. (2007) compared the Trait Hope Scale with the PGI, both of which measure teachable goal-direction, future-oriented goals, pathways to goals, and agency to implement plans. However, the Trait Hope Scale is not beneficial for obtaining specific data on goal attainment (Feldman, Rand, & Kahle-Wrobleski, 2009; Shorey et al., 2007). Conversely, the PGI focuses more on specific personal growth goals and is more specific to personal identity issues (Shorey et al., 2007). In their own assessment of the Trait Hope Scale, Shadlow et al. (2015) found that it is also applicable to Native Americans, further validating construct validity across demographics.

The Trait Hope Scale uses four items that measure agency thinking and four items that measure pathway thinking. The other four items are filler questions, producing a 12-item survey. The questions are rated on an 8-point Likert scale, with answers ranging from *definitely false* to *definitely true* (see Appendix B). The internal consistency includes an overall Cronbach's alpha measure of .74 to .88, a measure of .70 to .84 for agency Cronbach's alphas, and a measure of .63 to .86 for pathway alphas. The test-retest reliability measures .85 for three weeks and .82 for 10 weeks (Snyder et al., 1991). While being used in the survey, the Trait Hope Scale will be identified as the Future Scale, as requested by the author (Snyder, 1989). This scale takes approximately two minutes to complete.

Rand 36-Item Health Survey. An individual's health status changes throughout the life span, and no one single measure can reflect these changes. However, Mossey and Shapiro's (1982) findings suggest self-perception of one's own health is a valid and stable perception reflecting overall health. The Rand 36-Item Health Survey 1.0 (RAND36-SF) is identical to the MOS SF-36, which has been adapted from the Medical Outcomes Study (MOS) from 1992 (Hays, Sherbourne, & Mazel, 1993; Hays, D., Sherbourne, & Mazel, 1995; Stewart & Ware, 1992). However, the scoring of the RAND36-SF is different from the scoring of the MOS SF-36. The RAND36-SF (see Appendix C) is a self-report inventory that measures physical functioning, limits in daily physical activities due to health, limits in daily activities due to emotional health, energy level, general mental health, social functioning, pain, and general health (Hays, Sherbourne, & Mazel, 1993). All of the surveys from RAND Health are public documents.

There are four types of scoring used for this survey, all of which are Likert scales, except for the seven yes/no questions (questions 13-19; see Appendix C). The answers for questions with a 3-point Likert scale range from 1 = *yes, limited a lot*, 2 = *yes, limited a little*, and 3 = *no, not limited at all* (questions 3-12). Other questions throughout the survey are used to obtain responses on a 5-point and 6-point Likert scale question. The 5-point Likert scale questions include questions about general health and interference with daily activities due to physical or emotional problems (questions 1, 2, 20, 22, 34, and 36). Answers to Question 1 range from 1 = *excellent* to 5 = *poor*, and the other 5-point Likert scale questions follow a similar format. The 6-point Likert scale questions include questions about energy level and emotional well-being (questions 21, 23-31). Answers to

questions 23-31 range from 1 = *all of the time* to 6 = *none of the time*. The Cronbach alpha scores of the various scales are as follows: physical functioning, 0.93; role functioning/physical, 0.84; role functioning/emotional, 0.83; energy/fatigue, 0.86; emotional well-being, 0.90; social functioning, 0.85; pain, 0.78; and general health, 0.78. There is no Cronbach alpha score for health change because the data were collected one year after the initial study (Hays et al., 1993). The questionnaire takes approximately three minutes to complete.

Posttraumatic Growth Inventory. There are seven popular instruments in use to measure posttraumatic growth (Linley & Joseph, 2004). The PGI was used for this study due to its high level of internal consistency and reliability (see Appendix D). In a previous study, Ruini et al. (2015) found Cronbach's alphas for the total score measuring .865. The PGI is a self-report, 21-item inventory that includes five subscales: new possibilities (5 items), relating to others (7 items), personal strength (4 items), spiritual change (2 items), and appreciation of life (3 items). The subscales are rated on a 6-point Likert scale that ranges from 0 (*I did not experience this change as a result of my crisis*) to 5 (*I experienced this change to a very great degree as a result of my crisis*).

Procedures

Participants were required to have internet access to complete the web-based survey provided through the website SurveyMonkey.com. Recruitment occurred through the social media site Facebook, where snowball sampling was utilized. A hyperlink was provided when the study was posted on Facebook. In addition, participants were able to access and complete surveys for 14 days after Internal Review Board (IRB) approval, which occurred on March 23, 2018, and after release of the web-based survey, which

occurred on March 24, 2018. The survey remained open for two weeks until April 6, 2018.

Once IRB approval was established, the survey was advertised on Facebook with the following statement: "Please help with my dissertation survey, your feedback is important!". Next, participants needed to click the Survey Monkey link to complete the survey. The survey was constructed in the following order: consent form (Appendix E), demographics page (Appendix F), the ACE questionnaire (Appendix A), the Trait Hope Scale (Appendix B), the RAND36-SF (Appendix C), and the PGI (Appendix D). However, Survey Monkey allows for page randomization, and the four questionnaires were randomized per participant.

In the first page of the survey, participants were shown a consent form on which they were required to agree to the terms of the survey to continue (Appendix E). Due to the nature of the survey, participants were given resources if they found the need for counseling support (see Appendix E). The resources included the phone numbers for the 24-Hour Crises Line, the researcher's phone number and email address, the National Mental Health Association, and the Suicide Prevention Lifeline. The Crisis Text Line was also included as a resource, and participants were guided to find local resources provided by www.psychologytoday.com. The consent form also included a link to Survey Monkey's privacy policy (https://www.surveymonkey.com/mp/policy/privacy-policy/) for easy access to participants. Survey Monkey states that it does not share any information about respondents and that all responses and respondents are confidential except to the survey creator. In addition, Survey Monkey states that there is always a risk that data might be viewed by unauthorized third parties due to transmission over the

Internet. A link to Survey Monkey's security practices was available to participants within the consent form (https://www.surveymonkey.com/mp/policy/security/) for review of current security practices. Survey Monkey allows responses to be kept confidential by assigning a unique tracking number upon completion of surveys.

Next, participant demographic information (Appendix F) was collected, which included: gender (male, female, and an option for a write-in answer), age (category ranges of 17 or younger, 18-29, 30-39, 40-49, 50-59, and 60 or older), ethnicity (categories of American Indian or Alaska Native, Asian/Pacific Islander, Black or African American, Hispanic, White/Caucasian, or Multiple Ethnicity write-in option), current social status (categories of upper class, upper-middle class, middle class, lower-middle class, and lower class), and marital status (married, widowed, divorced, separated, in a domestic partnership or civil union, single but cohabiting with a significant other, single/never married, and a write-in option). All participants, even those who were unable to finish the survey, were entered into a drawing for a $50 Amazon gift card through their chosen submitted email addresses.

The first survey entered in the overall survey was the ACE questionnaire (Appendix A). Next, participants were possibly introduced to the Trait Hope Scale (Appendix B), which was referred to as the Future Scale as requested by the authors to reduce bias. Next was the RAND36-SF (Appendix C), which measures self-perceived overall health, and then participants could fill-out the PGI (Appendix D). Finally, participants were guided to an exit page that consisted of a thank you for participation and phone numbers of support services outlined in the consent form. Participants were

also reminded of the drawing, which commenced two days after the close of the survey. The completion of the survey took, on average, 11 minutes and 50 seconds.

The ACE questionnaire requires respondents to be at least 18 years of age. As such, if a participant was under the age of 18, she or he was not allowed to complete the survey as the survey exited. These data were collected on the demographics page following the consent page of the survey. Gender identity was collected because the ACE questionnaire, the Hope Scale, the RAND36-SF, and the PGI differentiated normative data by gender (Felitti et al., 1998; Hays, Sherbourne, & Mazel, 1993; Snyder et al., 1991; Tedeschi & Calhoun, 1996). Age was collected due to the ACE questionnaire's requirement that participants be 18 years of age or older. Ethnicity was collected because the original ACE study's (Felitti et al., 1998) collection of results was from a sample consisting of 80% Caucasian/Hispanic respondents. In addition, the Hope Scale's normative data were based on a Caucasian sample (Snyder et al., 1991). Current social status standing was collected due to normative data collected for the Hope Scale and the ACE Study, both of which included analysis of social standing (Felitti et al., 1998; Snyder et al., 1991). Finally, marital status was collected due to normative data collected for the PGI and the Hope Scale (Snyder et al., 1991; Tedeschi & Calhoun, 1996).

Email information was collected for this study. Email addresses were collected for a raffle, and all participants could enter. Two participants were randomly selected to win a prize, each one getting a $50 Amazon gift card. Participants were asked to use an email address at which they would like to be contacted within the consent form (see Appendix E). An email of the prize was sent to the two winners of the raffle.

Participants' responses were organized and tracked using an identification code rather than by email address. SurveyMonkey automatically codes responses by a unique identification number upon completion of surveys.

After the survey was closed, data analysis commenced. Statistical analyses were performed using the statistical package IBM SPSS Statistics version 25.0 (SPSS, 2017). The first hypothesis was that there would be significant positive correlations between ACE scores and levels of hope. As ACE scores increased, hope scores were also expected to increase. The first hypothesis was measured with Pearson's *R* correlational design. The first model encompassed correlations between ACE scores, the Trait Hope Scale, the RAND36-SF, and the PGI. The second hypothesis stated that hope would predict posttraumatic growth. Due to previous findings of a possible linear relationship between the two variables, it was assumed that as hope increased, so too would posttraumatic growth (Calhoun & Tedeschi, 2004; Kaye-Tzadok & Davidson-Arad, 2016; Linley & Joseph, 2004; Snyder, 2002). This relationship was studied through linear regression analysis. In addition, the third hypothesis stated that hope would moderate the relationship between ACEs and posttraumatic growth. This third hypothesis was measured through multiple regression analysis between the independent variable of ACE scores, the dependent variable of posttraumatic growth, and the moderating variable of hope. The fourth hypothesis stated that hope would predict overall health. It was theorized that hope would correlate with perceived health, as hope was viewed as a buffer against trauma during previous research (Lopez et al., 2014; Marques et al., 2013). Finally, the fifth hypothesis stated that hope would moderate the relationship between ACEs and overall health. The fifth model was also studied through

multiple regression analysis between the independent variable of ACE scores, the dependent variable of posttraumatic growth, and the moderating variable of hope. Results were posted on the website https://samuelgales.wixsite.com/dissertation-data upon completion of the study.

Chapter Three

Results

This focus of this study was to determine whether hope affects the impact of ACEs on posttraumatic growth and self-perceived health in adulthood. Hope was measured to determine if (a) it acts as a moderating variable on the severity of the health effects of ACEs or (b) it acts as a moderating variable on the degree of posttraumatic growth after ACEs. To explore these relationships, seven different analyses were conducted using IBM SPSS Statistics 25. Hypothesis 3, which states "Hope will moderate the relationship between adverse childhood experiences and posttraumatic growth", was analyzed with the aid of the PROCESS 3.0 developed by Andrew F. Hayes (2017), which centers interaction terms automatically within IBM SPSS Statistics 25. The analysis for Hypothesis 5, which states "Hope will moderate the relationship between adverse childhood experiences and overall health", followed the same procedure as the analysis for Hypothesis 3. Pearson correlations coefficients and descriptive demographic statistics for all four scales, The ACE Questionnaire, Hope Scale, RAND 36-SF, and PGI, are provided in Table 1.

Analyses. Statistical analyses were performed using the statistical package IBM SPSS Statistics 25. First, computations of total ACE scores, total hope scores, total posttraumatic growth scores, and participants' average overall health scores were compiled. A table with descriptive statistics of questionnaire results was then produced (see Table 2). Hypothesis 1 was tested using Pearson correlation to provide information regarding the relationship between the variables of hope scores and ACEs (see Table 3). Hypothesis 2 was tested by examining the relationship between hope scores and

posttraumatic growth using Pearson correlation (see Table 3) and then testing the relationship through linear regression. For this process, hope was entered as the predicting variable and posttraumatic growth as the dependent variable. Hypothesis 4 followed the same equation guidelines, except that self-rated posttraumatic growth was replaced with self-rated overall health scores.

Hypothesis 3 was tested by using hierarchical multiple regression to assess the interaction effect between ACE scores and hope score variables. Posttraumatic growth was the dependent variable in the first model, with both ACE scores and hope scores identified as independent variables. Posttraumatic growth was also the dependent variable in the second model, and the interaction between ACE scores and hope scores was measured as the independent variable. The two models were compared to help determine the amount of variance with and without the interaction of hope. The same hierarchical multiple regression sequence was also involved in analyzing Hypothesis 5, but the self-rated posttraumatic growth variable was replaced with self-rated overall health scores. The steps followed for Hypotheses 3 and 5 were provided by Kean University, which provided a step guide document developed by Elite Research (2013) to accurately test for moderation effects.

Reported Trauma, Hope, Posttraumatic Growth, and Health

Presented in Table 2 are the descriptive statistics for each questionnaire, showing minimum and maximum reported scores, mean scores, and range of scores. Next, frequency of responses for each questionnaire are displayed in Figures 1 through 4. An explanation of score ranges is given to help identify higher and lower levels of trauma, hope, posttraumatic growth, and self-rated health. Although all questionnaire data show

skewedness in the histograms shown, all assumptions of following test were met (Field, 2013).

Adverse Childhood Experiences scores. First shown is the ACE Questionnaire, for which scores ranged from 0 to 10. The mean score was 3. Most participants (n = 54, 58%) reported three or fewer ACEs, while 11 (12%) reported a score of 4, and 28 (30%) participants reported a score of 5 or more.

Trait Hope Scale. Second, the Trait Hope Scale scores ranged from 17 to 63, with higher scores showing higher levels of hope. The lowest reportable value for the Trait Hope Scale was 8, and the highest showed 64 as the total score. The average score for this study was 49, while Lopez, Ciarlelli, Coffman, Stone, and Wyatt (2000) reported that the average hope scale score is 48. The standard deviation of scores was 9 points, with 13 (14%) scoring at 40 or lower, suggesting a low level of hope; 70 (75%) scoring 41 to 58, suggesting a moderate level of hope; and 10 (11%) participants scoring 59 or above, suggesting a higher level of hope.

The Posttraumatic Growth Inventory. Third, the PGI scores ranged from 0 to 89, with a mean of 39 and a standard deviation of 28 for this study. The reportable values for this questionnaire range from 0 to 105. A previous study that Mazor, Gelkopf, Mueser, and Roe (2016) conducted used the score of 45 as a cutoff to show no to low levels of posttraumatic growth, whereas a score of 46 or more showed a moderate to very high level of growth. A majority (n = 51, 54.8%) of study participants reported a score of 45 or lower.

The Rand 36-Item Health Survey. Fourth, the RAND36-SF data were transformed to reflect an overall average health score. The data were transformed per the

requirements defined by the RAND Corporation (2018). The average health scores can range from 0 to 100, with 0 being *very poor self-rated health* and 100 being *self-rated perfect health*. Participants' average self-rated health scores were 64.69, with a standard deviation of 20.93. The number of participants who reported a health rating of 50% or under was 25 (27%), while 34 reported a score between 50 and 75 (36.5%), and 34 reported a score of 75 or above (36.5%).

Table 2

Descriptive Statistics for all Four Questionnaires

	N	Mean	Std. Deviation
Ace Scores	93	3.0968	2.59206
Hope Scores	93	49.1505	8.92352
PGI	93	39.3118	27.90823
RAND 36-SF	93	64.6894	20.93160

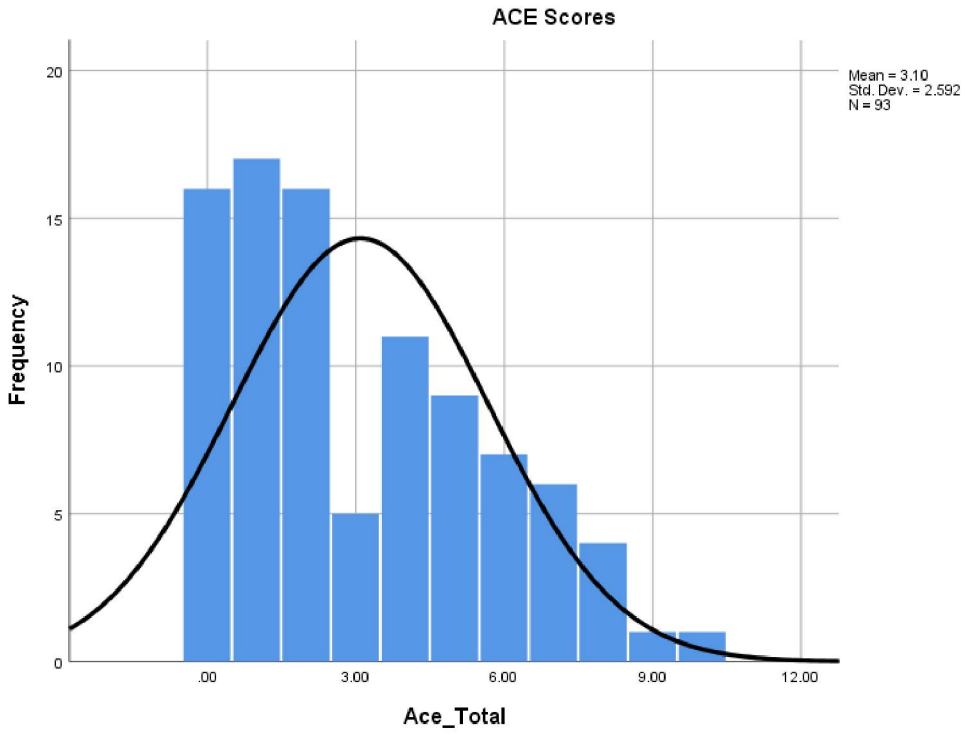

Figure 1. Frequencies of reported ACE scores.

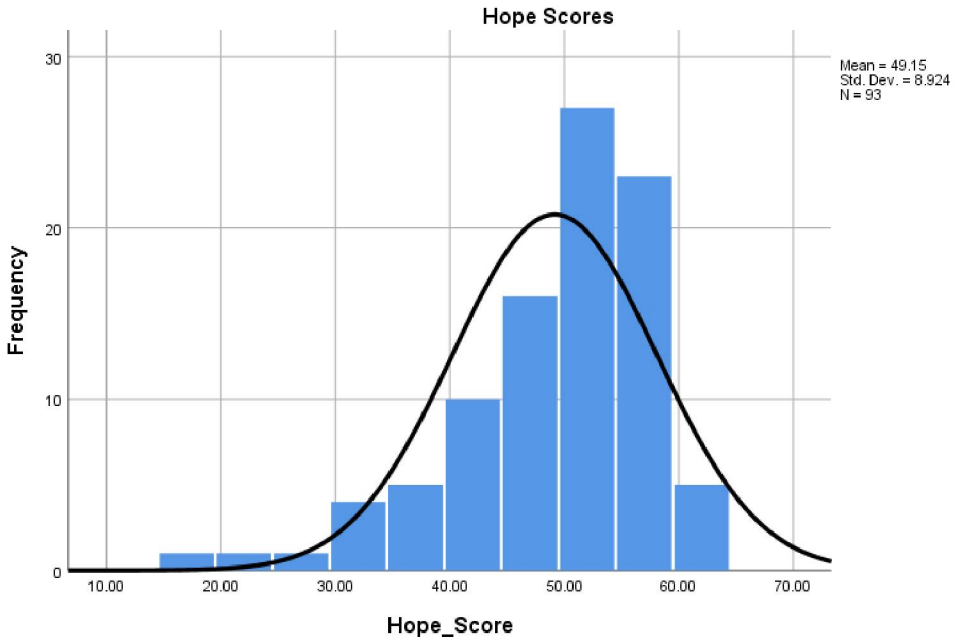

Figure 2. Frequencies of reported Hope scores.

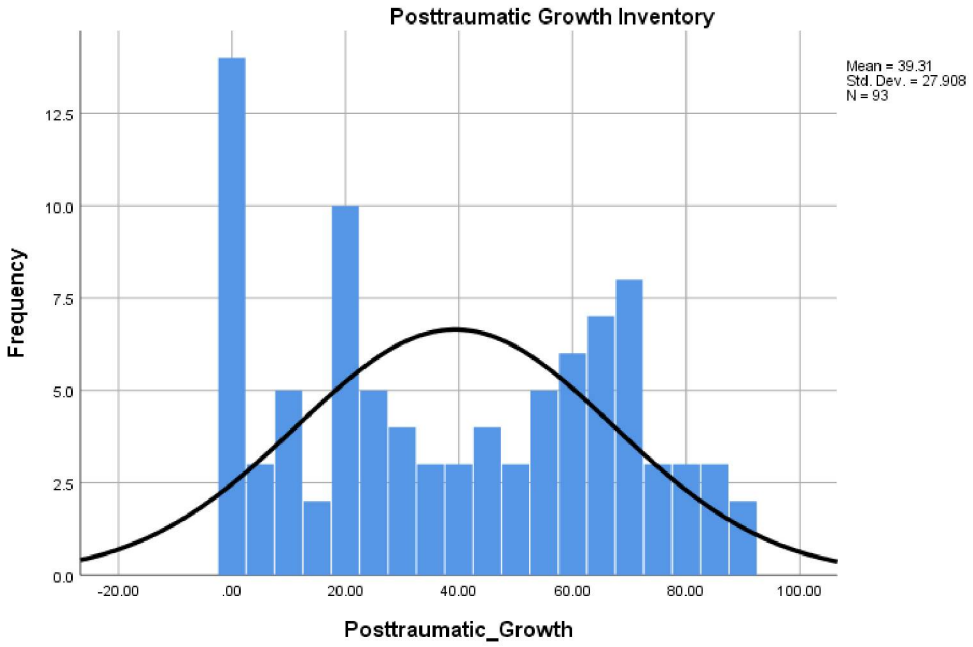

Figure 3. Frequencies of reported PGI scores.

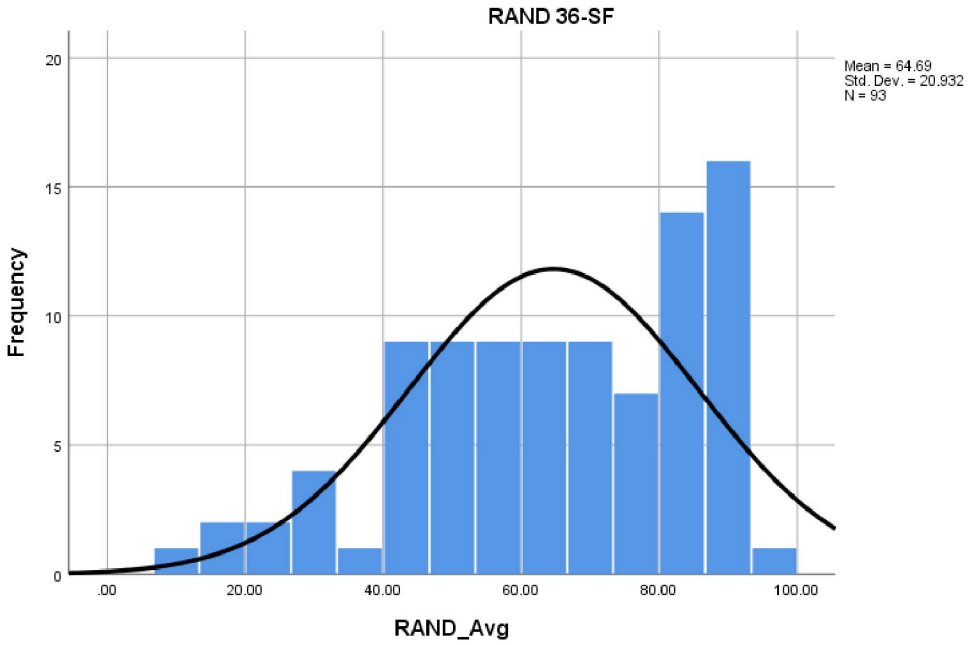

Figure 4. Frequencies of average self-reported health scores.

Hope and Adverse Childhood Effects correlation. The first hypothesis stated that hope would positively correlate with ACEs. It was predicted that the higher the ACE score, the higher one's hope score would be, showing a positive correlation. Analysis was accomplished by comparing the ACE Questionnaire and the Hope Scale. Using Pearson's *R* correlation, the relationship between the variables was computed. ACE scores had a small negative correlation to hope scores ($r = -.29$, $n = 93$, $p \leq .01$), showing that the higher the ACE score, the lower one's hope score. In addition, ACE scores had a small negative correlation to self-reported health ($r = -.37$, $n = 93$, $p \leq .01$). Finally, ACE scores had a medium positive correlation to self-reported posttraumatic growth ($r = .36$, $n = 93$, $p \leq .05$). All ACE score correlations were significant at the $p \leq 0.01$ level.

Table 3

Summary of Correlations, Means, and Standard Deviations for Scores on the ACE Questionnaire, Hope Scale, PGI, and RAND 36-SF

Measure	1	2	3	4	*M*	SD
ACE Score	-	-.29**	.36**	-.37**	3.10	2.59
		[-.44, -.12]	[.19, .51]	[-.53, -.22]		
Hope Score	-.29**	-	.12	.52**	49.15	8.92
	[-.44, -.12]		[-.05, .28]	[.32, .68]		
PGI	.36**	.12	-	-.08	39.31	27.91
	[.19, .51]	[-.05, .28]		[-.28, .13]		
RAND 36-SF	-.37**	.52**	-.08	-	64.69	20.93
	[-.53, -.22]	[.32, .68]	[-.28, .13]			

N*ote:* $N = 93$. [BCa 95% CI]
**$p \leq .01$.

Hope and posttraumatic growth. The second hypothesis stated that hope would predict posttraumatic growth. This was examined by comparing the Hope Scale and the PGI. Using Pearson's *R* correlation, the relationship between the variables was computed. Hope and self-reported posttraumatic growth did not have a significant correlation during this study, showing a small positive correlation between hope and self-reported posttraumatic growth ($r = .12$, $n = 93$, $p = .252$). Next, a simple linear regression was calculated to predict self-reported posttraumatic growth, based on hope scores, $b = .12$, $t(91) = 29.75$, $p < .001$. A significant regression equation was not found ($F[1, 91] = 1.327$, $p = .252$), with an R^2 of .014 (see Figure 5).

To test the third hypothesis that self-perceived hope would moderate the relationship between ACE scores and self-rated posttraumatic growth, a multiple linear regression analysis was conducted. The test for normality, which involved examining standardized skewness of residuals and utilizing the Shapiro-Wilks test and the Durbin-Watson test, indicated that the residuals for Hypothesis 3 were normally distributed (see Figure 6). It appears that no assumptions were violated within this model (Field, 2013). In the first step, two predictor variables were included: ACE scores and hope scores. These variables accounted for a significant amount of variance in posttraumatic growth reported, $R^2 = .184$, $F(2, 90) = 10.12$, $p < .001$. To avoid the potential of multicollinearity with the interaction term, the two predictor variables were centered, and an interaction term between them was created (Aiken & West, 1991).

Next, the interaction term between ACE scores and hope scores was added to the model, which accounted for no significant variance in posttraumatic growth, $\Delta R^2 = .19$, $\Delta F(1, 89) = 0.78$, $p = .383$, $b = .111$, $t(89) = .88$, $p > .05$. These results indicate that there

is no significant moderation effect of hope scores on the relationship between ACE scores and self-rated posttraumatic growth (see Figure 5).

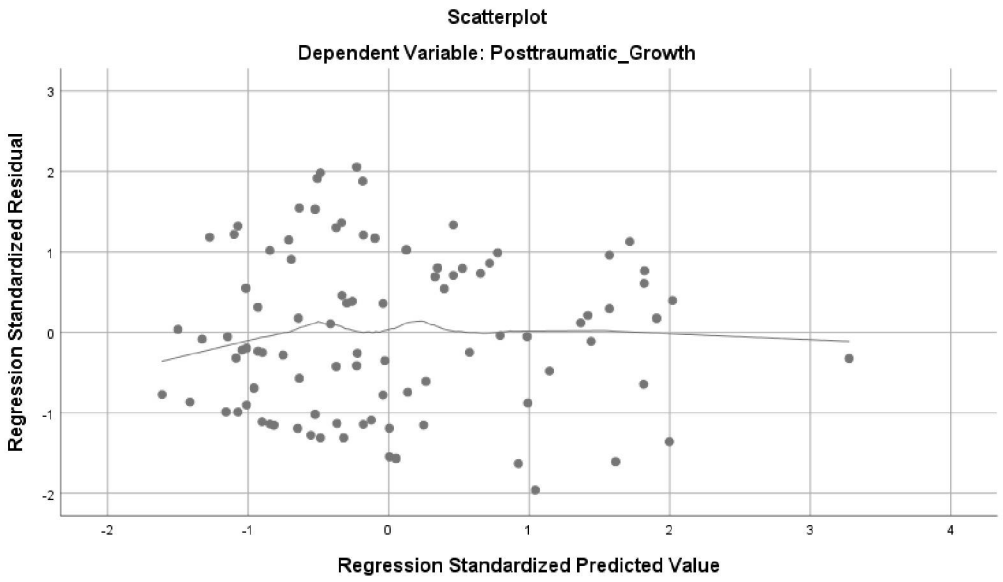

Figure 5. Scatterplot interaction of ACE scores, Hope Scale scores, and Posttraumatic Growth scores.

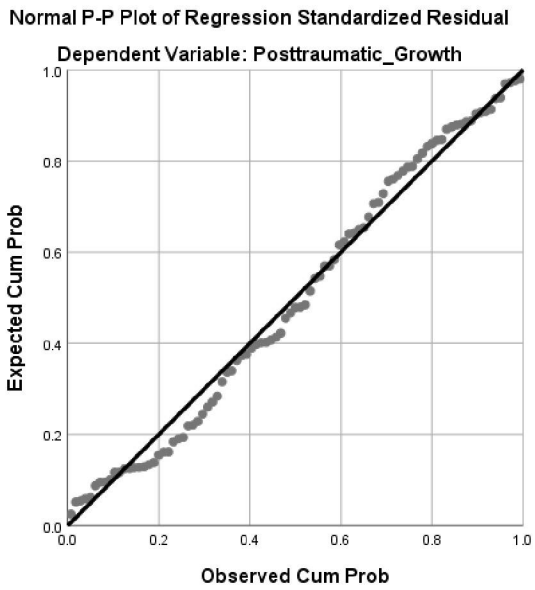

Figure 6. Normal P-P plot of ACE scores, Hope Scale scores, and Posttraumatic Growth scores for the RAND 36-SF.

Hope and self-reported health. The fourth hypothesis stated that hope would predict self-reported health. I examined this by comparing the Hope Scale and the RAND 36-SF. Just as for the second hypothesis, Pearson's *R* correlation was used to compute the relationship between the variables. Hope and self-reported health had a significant medium positive correlation during this study ($r = .52$, $n = 93$, $p \leq .01$), showing a relationship between the two variables. In addition, when a simple linear regression was calculated to predict self-reported health status, based on hope score, $b = .52$, $t(91) = .45$, $p = .654$, a significant regression equation was found: $F(1, 91) = 33.758$, $p < .001$, $R^2 = .271$. In contrast to the results of the second hypothesis, significant variance was found between hope and self-reported health status.

Given the objective of the fifth hypothesis, which was to explore hope as a moderating variable on the outcome of self-reported physical health in the aftermath of ACEs, data were entered into a multiple linear regression model. Similar to Hypothesis 3, the test for normality, which involved examining standardized skewness of residuals and utilizing the Shapiro-Wilks test and the Durbin-Watson test, indicated that the residuals for Hypothesis 5 were normally distributed (see Figure 8). It appears that no assumptions were violated within this model (Field, 2013). In the first step, two predictor variables were included: ACE scores and hope scores. These variables accounted for a significant amount of variance in self-reported health scores, $R^2 = .325$, $F(2, 90) = 21.68$, $p < .001$. To avoid the potential of multicollinearity with the interaction term, the two predictor variables were centered, and an interaction term between them was created (Aiken & West, 1991). Next, the interaction term between ACE scores and hope scores was added to the model, which accounted for significant variance in self-rated health

scores, $\Delta R^2 = .000$, $\Delta F(1, 89) = 0.3$, $p = .874$, $b = -.01$, $t(89) = -.16$, $p > .05$. These results indicate that there is no significant moderation effect of hope scores on the relationship between ACE scores and self-rated posttraumatic growth (see Figure 6).

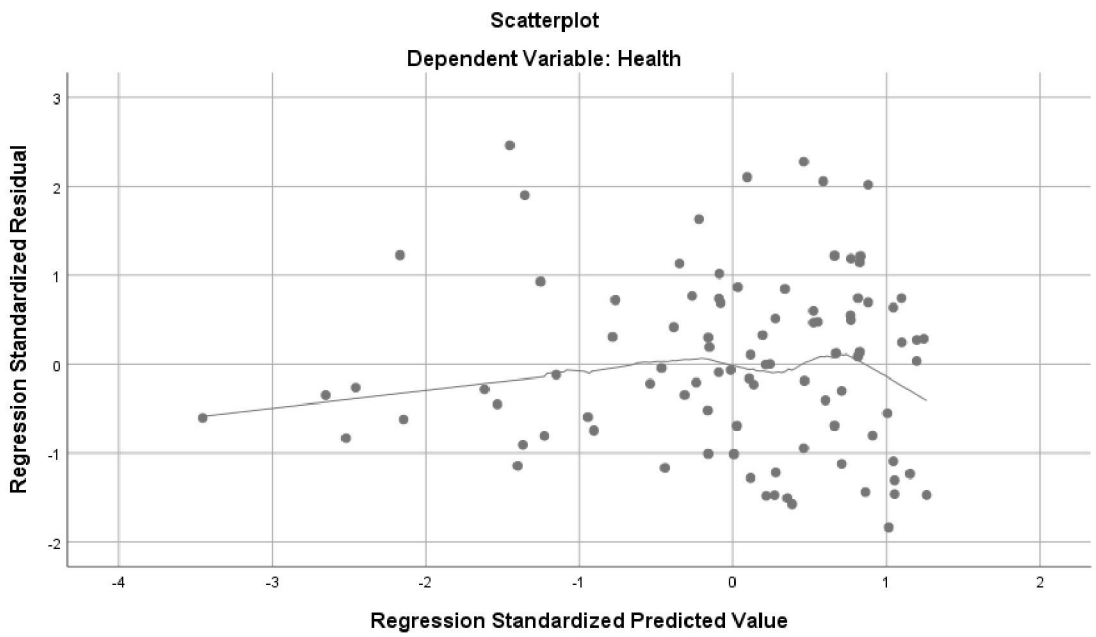

Figure 7. Scatterplot interaction of ACE scores, Hope Scale scores, and self-reported health scores for the RAND 36-SF.

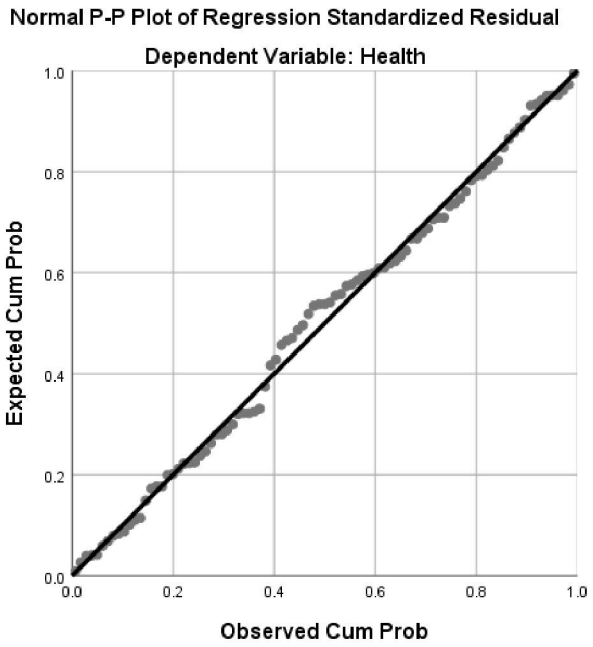

Figure 8. Normal P-P plot of ACE scores, Hope Scale scores, and self-reported health scores for the RAND 36-SF.

Chapter Four

Discussion

The present study was designed to assess ACE scores, self-perceived levels of hope, self-perceived levels of posttraumatic growth, and overall health, and hope was viewed as a possible moderating variable in the aftermath of ACEs. The purpose of this present study was to determine whether hope relates to part of the human experience, specifically for those who have been affected by childhood trauma. An examination of whether hope shares a bond with physical and emotional health for those who have experienced ACEs was conducted. Hope had an insignificant relationship with posttraumatic growth, and a significantly positive relationship with self-perceived health. In addition, the overarching concern of this research was whether hope moderates the relationships between ACEs and posttraumatic growth and between ACEs and health. The overall results show that hope is not a moderating variable in the effects of ACEs upon posttraumatic growth or self-perceived health. In the following interpretation, limitations and suggestions for future research will be discussed.

Adverse Childhood Experiences Correlate

The relationships between the four questionnaires is shown in Table 3. The results indicate that ACEs have a significant relationship with hope, posttraumatic growth, and self-perceived health. ACEs and hope were found to have a significantly negative relationship, suggesting that the more ACEs one has, the less hope one might have. The results are in line with Snyder's (2002) theory that levels of hope are lower when trauma occurs. However, these results differ from Hypothesis 1 and from the previous studies of Marques et al. (2013) and Shadlow et al. (2015), who posited hope as

a buffer against such traumatic events. In contrast, the relationship between ACEs and posttraumatic growth indicated a significantly positive relationship: the higher a subject's ACE score, the more posttraumatic growth was reported. This finding might suggest the need to grow after trauma for a myriad of reasons, as suggested by previous literature (Calhoun & Tedeschi, 2004). The reasons for growth could include resilience, a perception change after childhood (natural maturity), or even the development of positive illusionary beliefs (Calhoun & Tedeschi, 2004; Park, 1998; Ruini et al., 2015; Taylor, 1983). Finally, ACEs and health had a significant negative relationship. This finding suggests that the more ACEs one has, the worse her or his self-perception of her or his health will be. These results should not be surprising, as the original ACE study revealed a wide array of health problems associated with ACEs as previously referenced, which included aspects of medical, mental, and financial health (Felitti, et al., 1998). Although ACEs correlated with the other questionnaires in this study at a significant level, hope did not.

Adverse Childhood Experiences, Growth, and Hope

Hope was theorized to have a significant relationship with posttraumatic growth. This theory was born out of previous research, which suggested a possible linear relationship between the two (Calhoun & Tedeschi, 2004; Kaye-Tzadok & Davidson-Arad, 2016; Linley & Joseph, 2004). This study revealed a positive relationship between hope and posttraumatic growth, which suggests the more hope one has, the more growth might be experienced. However, the data suggest that the relationship does not co-occur at a significant level. This might suggest that hope and posttraumatic growth occur independently of each other, showing no dependence on the other when co-occurring. As

previously stated, a goal of this study was to verify a linear relationship between hope and posttraumatic growth, as previously found in other studies, but this was not confirmed. Interestingly, posttraumatic growth is a process in which reliving or reviewing past trauma might serve as a reminder of how much progress one has made, and it places emphasis on current status (Tedeschi & Calhoun, 1996). Future orientation or direction is based out of hopeful thought, not a review or reliving of the past, which might explain why posttraumatic growth and hope did not have a linear relationship. These two variables might not equate, as posttraumatic growth occurs out of a past orientation, what one has previously experienced, while hope is born out of a future orientation, meaning what one plans to achieve (Snyder, 1989; Tedeschi & Calhoun, 1996).

When separately occurring with ACEs, hope and posttraumatic growth were shown to have opposite relationships. It was theorized that hope can possibly be a moderating variable within the relationship between ACEs and posttraumatic growth. However, the results of the study did not confirm this hypothesis, and hope was not found as a moderator. Rather, the more ACEs one had, the more growth occurred, and a lower level of hope was reported. However, the relationship between ACEs and posttraumatic growth was shown to change from a positive interaction to a negative interaction. It was previously mentioned that ACEs and posttraumatic growth have a significant positive relationship. When hope was introduced as a moderator, the relationship between ACEs and posttraumatic growth changed from a positive relationship to a negative relationship, but not at a significant level.

One interesting implication is that the findings might demonstrate that the effects of ACEs and the severity of childhood trauma are not constant. This finding might also indicate that hope retards the growth process after trauma and that the perceptual differences between hope and posttraumatic growth do not co-occur. The perception of hope is future oriented, possibly lending itself to a belief system that is out of one's immediate control, while posttraumatic growth is theorized to begin when people regain control over their life circumstances. It is possible that a perception within the moment and not the future creates a positive reality and growth (Calhoun & Tedeschi, 2004; Park, 1998; Snyder, 2002; Taylor et al., 1983). Future researchers might want to include the effect size of posttraumatic growth versus the effect size of hope.

Adverse Childhood Experiences, Health, and Hope

The other question explored in this study was whether hope can serve as a moderator within the relationship between ACEs and overall health. A review of the relationships between the variables was valuable before measuring hope within this relationship. In this study, ACEs and self-rated health had a significantly negative relationship, suggesting that the more ACEs one has, the worse his or her health is. In addition, as previously stated, ACEs and hope had a negative correlation. These results suggest that the more ACEs one has, the worse his or her health will be, and the lower his or her level of hope will be, and vice versa. Also, a positive relationship between hope and self-perceived health was found with a medium effect: the more hope one has, the better her or his health. Conversely, the less hope one has, the worse his or her health. The expectation was then to see hope as moderating the relationship between ACEs and perceived health. When hope was added as a moderator, the relationship between ACEs

and perceived health continued in a negative direction, but at a lesser, insignificant level. However, it bears repeating that the original ACE study produced results that showed those with an ACE score of 4 or more showed a 12-fold increase in risky behaviors when compared with those with no ACE score (Dube, Felitti, Dong, Giles, & Anda, 2003; Felitti & Anda, 2010).

The results of this study also suggest that hope might have had more of an influence than ACEs in terms of their relationship with perceived health, which is also shown through the stronger correlation revealed in the data. However, the findings of this study might indicate that the reactions of the stress response system, which include default passivity and the long-lasting impact of trauma due to elevated cortisol, might have influenced the self-reporting of hope, trauma, growth, and even self-reported health. The relationship between ACEs and health was evaluated in this study, and a small negative correlation was found. The data were not categorized to review whether a dose-response effect exists as in the original study, because this type of analysis extended outside the scope of this research (Felitti & Anda, 2010).

Control of the Future

An area of research that might hold potential for exploration is that of learned helplessness or default neural passivity (Maier & Seligman, 2016). As stated abundantly, in this study, participants were asked to review past trauma. It is not known what effect this review had on participants and whether they were unable to mentally move from a past trauma to a future orientation constructively. It is theorized that awareness of victimization creates an awareness of loss of control, loss of self-esteem, loss of hope, and a passive, anxiety-provoking state (Maier & Seligman, 2016; Taylor, Wood, &

Lichtman, 1983). As previously stated, researchers now theorize that passivity is a brain default mechanism in which the mind perceives a lack of control over future events (Maier & Seligman, 2016). The belief can be justified that when people remember trauma, they are remembering a time when they lacked control over a situation, and when not adequately trained, they might not be able to overcome the passivity and anxiety associated with the trauma (Maier & Seligman, 2016; Snyder, 2002; Taylor, 1983; Thompson, 1981). It might be advantageous for future researchers to study a control group within a longitudinal arena. This control group should consist of individuals who have been introduced to hope, future-directed goal setting, and skills through which control can be directed toward future events. Such a study would help in understanding the impact of learned helplessness and trauma on the ability to perceive control over negative events that might occur in the future.

Limitations and Future Research

It is possible that due to the nature of the study, reviewing past trauma and the current state of future orientation (hope) within a 10-minute span might have negatively affected participant perspectives. As Snyder (1989) discussed, hope is defined as being perception based, changing throughout the lifespan. The results of the relationship between ACE scores and hope scores might indicate a deflated perception of hope due to the remembrance of past trauma. Reliving past trauma might have impacted the stress response system, impacting cognitive function and perspective of hope while the participants were completing the survey. In addition, reliving the moments of past trauma might have raised a sense of vulnerability, possibly affecting emotional vulnerabilities (Tedeschi & Calhoun, 1996). Furthering this point, Linley and Joseph

(2004) suggested that a focus on negative impacts of trauma can create a negative mental filter. The surveys began with a review of negative life events by way of the ACE survey, possibly creating a negative mental filter through which respondents were less hopeful than at other moments. Future researchers might want to focus on randomization or completion of the ACE survey last, as this might produce different results.

Future researchers might also benefit from designing a longitudinal study in which relevant data are collected within a more current time frame. I also suggest that a longitudinal study beginning in childhood might be better fitted to understand the possibility of hope as moderator after trauma. Hope is future-oriented, and viewing trauma retrospectively through a lens of healing, no matter the degree, might alter the perception of the need to hope for better. In addition, retrospectively viewing a state of mind might be difficult to ascertain and might create a filter through which anxiety overwhelms. It is possible that higher levels of hope or a perspective of future control are needed to start the process of growing after trauma rather than amid the process. Understanding the data at the onset of trauma might help reveal more about the processes of growth, healing, and the impact of future thought. Hope is essentially one degree removed from the active process of growing after trauma. Coping and resilience are not defined as having thoughts to actively pursue healing after trauma, but they are the results of the healing process, during, after, and in the present. Hope is what leads the pursuit to heal, and thus this study might be limited because of the emphasis on retrospect.

Another limitation of this study was the subjectivity of the questions, as Pinto et al. (2014) noted, specifically for the ACE study. It was suggested that responses could be unreliable due to the need for more refined definitions and less ambiguous wording of

questions. In this study, results were gathered from four subjective surveys, and as noted throughout the literature review, ACEs, hope, and posttraumatic growth are defined by one's perspective. The findings from this study are based on subjectivity and self-report measures, and it would be enlightening to use more objective measures for future research. However, conducting such a study might be difficult because the variables involved are primarily based on subjective experiences and on the limitations of available surveys that have empirical research data offering support. Finally, participants were selected through snowball sampling and potentially did not represent the entire population. The snowball method is a sampling method of convenience and might not yield generalizable results. The original ACE study's population consisted mostly of middle-aged, Caucasian males. The current study involved a different population, mostly middle-aged Caucasian females, and both studies used samples of convenience (Felitti et al., 1998). However, both studies were exploratory in nature and could not attest to the popularity of the traits involved in the respective studies. A more structured study using a random sampling technique might generate different results due to a possibly more varied sample, especially for minorities, who were found to display higher levels of hope in previous studies (Lopez et al., 2014). Future researchers might want to use a sample consisting of non-Caucasian people to confirm the findings from Lopez et al.'s (2014) study and the findings from other studies. Such a sample could be used to ascertain whether there is a difference between ethnic groups.

Conclusion

The goal of this study was to provide theoretical data promoting the use of goal-direction and attainment in helping moderate the relationship of health and growth after

trauma. I intended to examine how past events impacted the present person in terms of growth after trauma and health after trauma, and I tried to examine whether a future orientation can help moderate the impact of past events. Much theory, scientific research, and new discoveries have shaped the current understanding of the impact of trauma. It was noted that when trauma occurs, the mind, body, and future self are all affected. It is believed that due to the current data and to findings from previous research, further investigation is needed to help understand how to minimize the effects of trauma so that they are not overwhelming and life-long. It has also been noted that much growth can come from a traumatic background. It is inferred that those with a traumatic background have a longer process towards a healthy life than do people without a traumatic background.

It was suggested through this study that hope does not significantly moderate the relationships between ACEs and posttraumatic growth or between ACEs and self-perceived health. Although hope was not found to be a moderator in either relationship studied, it was found to possibly influence those relationships. Future researchers should aim to determine whether a different population, a different timeline (such as a longitudinal study), or differing survey methods would have produced different results. Hope as a standalone moderator was not able to significantly affect the relationships, although when hope was in the equation, the relationship between ACEs and posttraumatic growth did change direction. Understanding this finding further would be beneficial in future research, as would determining whether demographic differences affect this outcome or whether differing levels of either variable affect the outcome of the change in relationship. In addition, other moderating variables should be considered for

study alongside hope, such as social support, economics, demographics, and educational attainment. I am hopeful that an influence will be found to combat such negative consequences of trauma.

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Appendix A

The ACE Questionnaire

The ACE Questionnaire
(Felitti, et al., 1998)

While you were growing up, during your first 18 years of life:

1. Did a parent or other adult in the household **often or very often**… Swear at you, insult you, put you down, or humiliate you?
   or Act in a way that made you afraid that you might be physically hurt?
   Yes, No

2. Did a parent or other adult in the household **often or very often**… Push, grab, slap, or throw something at you?
   or often or very often hit you so hard that you had marks or were injured?
   Yes, No

3. Did an adult or person at least 5 years older than you **ever**…
   Touch or fondle you or have you touch their body in a sexual way?
   or attempt or actually have oral, anal, or vaginal intercourse with you?
   Yes, No

4. Did you **often or very often** feel that…
   No one in your family loved you or thought you were important or special?
   or your family didn't look out for each other, feel close to each other, or support each other?
   Yes, No

5. Did you **often or very often** feel that…
   You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you?
   or your parents were too drunk or high to take care of you or take you to the doctor if you needed it?
   Yes, No

6. Were your parents **ever** separated or divorced?
   Yes, No

7. Was your mother or stepmother:
   Often or very often pushed, grabbed, slapped, or had something thrown at her?
   or **Sometimes, often, or very often** kicked, bitten, hit with a fist, or hit with something hard?
   or **Ever** repeatedly hit at least a few minutes or threatened with a gun or knife?
   Yes, No

8. Did you live with anyone who was a problem drinker or alcoholic or who used street drugs? Yes, No

9. Was a household member depressed or mentally ill, or did a household member attempt suicide? Yes, No

10. Did a household member go to prison?
    Yes, No

Appendix B

The Trait Hope Scale

The Trait Hope Scale
(Snyder, Target article: Hope theory: Rainbows in the mind, 2002)

Directions: Read each item carefully. Using the scale shown below, please select the number that best describes YOU and put that number in the blank provided.

1. = Definitely False
2. = Mostly False
3. = Somewhat False
4. = Slightly False
5. = Slightly True
6. = Somewhat True
7. = Mostly True
8. = Definitely True

___1. I can think of many ways to get out of a jam.

___ 2. I energetically pursue my goals.

___3. I feel tired most of the time.

___ 4. There are lots of ways around any problem.

___ 5. I am easily downed in an argument.

___6. I can think of many ways to get the things in life that are important to me.

___ 7. I worry about my health.

___8. Even when others get discouraged, I know I can find a way to solve the problem.

___ 9. My past experiences have prepared me well for my future.

___10. I've been pretty successful in life.

___11. I usually find myself worrying about something.

___12. I meet the goals that I set for myself.

Note. When administering the scale, it is called The Future Scale.

Appendix C

The RAND 36-SF

The RAND 36-SF
(Hays, et al., 1993)

Choose one option for each questionnaire item.

_____ 1. In general, would you say your health is:

1 Excellent
2 Very good
3 Good
4 Fair
5 Poor

_____ 2. Compared to one year ago, how would your rate your health in general now?

1 Much better now than one year ago
2 Somewhat better now than one year ago
3 About the same
4 Somewhat worse now than one year ago
5 Much worse now than one year ago

The following items are about activities you might do during a typical day. Does **your health now limit you** in these activities? If so, how much?

1 = Yes, limited a lot	2 = Yes, limited a little	3 = No, not limited at all

_____ 3. **Vigorous activities**, such as running, lifting heavy objects, participating in strenuous sports

_____ 4. **Moderate activities**, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf
_____ 5. Lifting or carrying groceries
_____ 6. Climbing **several** flights of stairs
_____ 7. Climbing **one** flight of stairs
_____ 8. Bending, kneeling, or stooping
_____ 9. Walking **more than a mile**
_____ 10. Walking **several blocks**
_____ 11. Walking **one block**
_____ 12. Bathing or dressing yourself

During the **past 4 weeks**, have you had any of the following problems with your work or other regular daily activities **as a result of your physical health**?

13. Cut down the **amount of time** you spent on work or other activities

Yes or No

14. **Accomplished less** than you would like

Yes or No

15. Were limited in the **kind** of work or other activities

Yes or No

16. Had **difficulty** performing the work or other activities (for example, it took extra effort)

Yes or No

During the **past 4 weeks**, have you had any of the following problems with your work or other regular daily activities **as a result of any emotional problems** (such as feeling depressed or anxious)?

17. Cut down the **amount of time** you spent on work or other activities

Yes or No

18. **Accomplished less** than you would like

Yes or No

19. Didn't do work or other activities as **carefully** as usual

Yes or No

20. During the **past 4 weeks**, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?

1- Not at all	2- Slightly	3- Mild	4- Quite a bit	5- Extremely

21. How much **bodily** pain have you had during the **past 4 weeks**?

1- None	2- Very Mild	3- Mild	4- Moderate	5-Severe	6-Very Severe

22. During the **past 4 weeks**, how much did **pain** interfere with your normal work (including both work outside the home and housework)?

1- Not at all	2- A little bit	3- Moderately	4- Quite a bit	5- Extremely

These questions are about how you feel and how things have been with you **during the**

past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling.
How much of the time during the **past 4 weeks**...

1- All of the time	2- Most of the time	3- A good bit of the time	4- Some of the time	5- A little bit of the time	6- None of the time

_____ 23. Did you feel full of pep?
_____ 24. Have you been a very nervous person?
_____ 25. Have you felt so down in the dumps that nothing could cheer you up?
_____ 26. Have you felt calm and peaceful?
_____ 27. Did you have a lot of energy?
_____ 28. Have you felt downhearted and blue?
_____ 29. Did you feel worn out?
_____ 30. Have you been a happy person?
_____ 31. Did you feel tired?

_____ 32. During the **past 4 weeks**, how much of the time has **your physical health or emotional problems** interfered with your social activities (like visiting with friends, relatives, etc.)?

1- All of the time	2- Most of the time	3- Some of the time	4- A little of the time	5- None of the time

How TRUE or FALSE is **each** of the following statements for you.

1- Definitely true	2- Mostly true	3- Don't know	4- Mostly false	5- Definitely false

_____ 33. I seem to get sick a little easier than other people
_____ 34. I am as healthy as anybody I know
_____ 35. I expect my health to get worse
_____ 36. My health is excellent

Note: Survey was developed at RAND as part of the Medical Outcomes Study

Appendix D

The Posttraumatic Growth Inventory

Posttraumatic Growth Inventory
(Tedeschi & Calhoun, 1996)

Indicate for each of the statements below the degree to which this change occurred in your life as a result of the crisis/disaster, using the following scale.

0 = I did not experience this change as a result of my crisis.
1 = I experienced this change to a very small degree as a result of my crisis.
2 = I experienced this change to a small degree as a result of my crisis.
3 = I experienced this change to a moderate degree as a result of my crisis.
4 = I experienced this change to a great degree as a result of my crisis.
5 = I experienced this change to a very great degree as a result of my crisis.

Possible Areas of Growth and Change	0	1	2	3	4	5
1.I changed my priorities about what is important in life.						
2.I have a greater appreciation for the value of my own life.						
3.I developed new interests.						
4.I have a greater feeling of self-reliance.						
5.I have a better understanding of spiritual matters.						
6. I more clearly see that I can count on people in times of trouble.						
7.I established a new path for my life.						
8.I have a greater sense of closeness with others.						
9.I am more willing to express my emotions.						
10.IknowbetterthatIcanhandledifficulties.						
11.Iamabletodobetterthingswith my life.						
12.Iambetterabletoacceptthewaythings work out.						
13.Icanbetterappreciateeachday.						
14.Newopportunitiesareavailablewhichwouldn'thavebeen otherwise.						
15.Ihavemorecompassionforothers.						
16.Iputmoreeffortintomyrelationships.						
17.Iammorelikelytotrytochangethingswhichneed changing.						
*18.*Ihaveastrongerreligiousfaith.						
19.IdiscoveredthatI'mstrongerthanIthoughtIwas.						
20.Ilearnedagreatdealabouthowwonderfulpeopleare.						
21.Ibetteracceptneedingothers.						

Appendix E

Consent Form

The Effects of Hope and Trauma on Self-Reported Health and Well-Being

Consent Form

PSYC 8021 Doctoral Dissertation, Northwest University

Samuel Gales, MA

You are invited to participate in this dissertation study conducted by Samuel Gales, a psychology student in the Psy.D. Program at Northwest University. The study is being conducted as a requirement for PSYC 8021, Doctoral Dissertation. The purpose of this study is to explore hope and adverse childhood experiences. The following information is provided to help you to make an informed decision about participation.

Participation in this study will require your participation in a 10 to 15-minute survey. However, your participation in this study is voluntary. You are free to decide not to participate in this study or to withdraw at any time. There will be no negative consequences if you refuse to participate. At the end of the survey, you have the option to be entered into a raffle by way of email address in which two participants will be randomly chosen to receive a $50 Amazon gift card. Please use an email address that you would like to be contacted. Your responses will be organized and tracked using an identification code created Survey Monkey. SurveyMonkey assigns a unique identification code to all respondents keeping responses confidential.

There are moderate risks associated with participation. Some individuals may be uncomfortable answering personal questions. You may choose not to participate in this research study. The benefit of taking part in this study is the opportunity to participate in the research process as a research subject. Risks may include the remembrance of anxiety provoking situations and/or uncomfortable feelings from childhood. If at any time you need to speak with someone about your feelings or thoughts that arise during your participation, there are resources below that you can use for support.

Participation in this study is voluntary. You must be at least 18 years old to participate. You may choose not to participate in this study at any time and for any reason. There will not be any negative consequences for you if you refuse to participate. You may refuse to answer any questions asked. All responses are confidential. By answering "yes" to this consent form, you are giving permission to use your responses in this research study.

No individual results will be presented or made public in any way. Only grouped data will be presented. The results from this study will be available at https://samuelgales.wixsite.com/dissertation-data upon completion of the study. All data will be destroyed no later than December 31st, 2018.

If you have any questions about this study, please contact Samuel Gales at samuel.gales13@northwestu.edu or 425-280-9063. If you have further questions, please contact my faculty advisor, Dr. Kim Lampson, at kim.lampson@northwestu.edu or 425-

889-4592. You may also contact the Chair of the Northwest University Institutional Review Board, Professor Molly Quick, at molly.quick@northwestu.edu or 425-889-5763.

Thank you for your participation. The following resources are available to support people who are desirous of support:

24/7 support: Samuel Gales 425-280-9063
National Mental Health Association 703-684-7722
American Psychological Association 202-336-5500
24-Hour Crises Line: 1(866)-427-4747
National Suicide Prevention Lifeline 800-273-8255
For further local resources, go to www.psychologytoday.com
Crisis Text Line is available 24/7 by texting START or HOME to 741741

Please review Survey Monkey's security practices (https://www.surveymonkey.com/mp/policy/security/)

Please review Survey Monkey's privacy policy (https://www.surveymonkey.com/mp/policy/privacy-policy/)

The results from this study will be available at https://samuelgales.wixsite.com/dissertation-data upon completion of the study.

Appendix F

Demographics Questionnaire

Demographics Questionnaire

What is your age?

17 or younger
18-29
30-39
40-49
50-59
60 or older

What is your gender?

Female Male Other (Specify):

Which race/ethnicity best describes you? (Please choose only one.)

American Indian or Alaska Native
Asian/Pacific Islander
Black or African American
Hispanic
White/Caucasian
Multiple Ethnicity Other (Specify):

Which of the following best describes your current relationship status?

Married
Widowed
Divorced
Separated
Domestic partnership
Single
Single - but cohabiting with a significant other
Single - never married
Other (Specify):

Which of the following categories best describes your current social class standing?
Upper class
Upper-middle class
Middle class
Lower-middle class
Lower class