

DISSERTATION

THE ROLE OF PROTECTIVE FACTORS IN THE EXPERIENCE OF POSTTRAUMATIC  
GROWTH FOR INDIVIDUALS WHO REPORT CHILDHOOD ABUSE AND NEGLECT

Submitted by

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## ABSTRACT

### THE ROLE OF PROTECTIVE FACTORS IN THE EXPERIENCE OF POSTTRAUMATIC GROWTH FOR INDIVIDUALS WHO REPORT CHILDHOOD ABUSE AND NEGLECT

Many individuals experience stressful life events in childhood. Historically, attention has been paid to the ways in which these early experiences contribute to later maladjustment. Recently, however, increasing attention has been paid to how many, if not most, individuals who experience early childhood adversity demonstrate good adjustment and report personal growth from surviving these stressful experiences. Deriving benefit in the face of adversity has been termed "posttraumatic growth." This study investigated the relationship between posttraumatic growth and childhood experiences of abuse and neglect. A primary focus of this investigation was on what protective factors, serving as buffers against the negative consequences of trauma, moderated the relationship between childhood experiences of abuse and neglect and posttraumatic growth. This study found that while Acceptance, Positive Reframing and Emotional Support all significantly predicted Posttraumatic Growth, only Prosocial Adults and overall endorsement of social and emotional resources moderated the relationship between childhood maltreatment and posttraumatic growth. These findings have implications for designing effective interventions that foster growth and thriving in individuals who report a history of maltreatment.

## DEDICATION

I dedicate my dissertation to my mother, who has shown me what true unconditional love is, my father, who has always supported my education, Kyle Sandell, who has encouraged and supported my growth in graduate school, Mark Santos, Casey Penn, Scott Runner, and Kelly Sheline for their continuous support, and my advisor and mentor, Dr. Lee A. Rosén, who has truly molded me into the scientist-practitioner that I am today. I cannot adequately express my gratitude to you all and for the love, acceptance and support that you all have shown me.

## TABLE OF CONTENTS

Abstract .....	ii
Dedication .....	iii
Chapter I: Introduction .....	1
Childhood Maltreatment .....	2
Resiliency and Protective Factors .....	5
Posttraumatic Growth .....	9
Childhood Abuse and Neglect and Posttraumatic Growth .....	13
Current Study .....	15
Chapter II: Method .....	19
Participants .....	19
Measures .....	20
Procedure .....	24
Chapter III: Results .....	26
Missing Data .....	26
Preliminary Investigation of the Data .....	26
Prevalence of Maltreatment .....	27
Maltreatment and Posttraumatic Growth .....	29
Maltreatment and College Adjustment .....	31
Maltreatment, Posttraumatic Growth and Protective Factors .....	33
Chapter IV: Discussion .....	40
Maltreatment in College Students .....	40
Maltreatment, College Adjustment and Posttraumatic Growth .....	42
Protective Factors and Posttraumatic Growth .....	44
Limitations and Future Directions .....	47
Implications .....	49
Conclusion .....	50
Tables .....	52
Figures .....	57
References .....	59
Appendices .....	70

## CHAPTER I

### **Introduction**

It is not uncommon for children and adolescents to experience a traumatic event in their life (Tripplett et al., 2011). Historically, research in the area of trauma has focused primarily on the negative impact that early trauma has on these individuals (e.g., development of somatic symptoms, struggles with depression, sadness, guilt, development of clinical disorders such as PTSD, impaired functioning in social and/or occupational domains; Brewin, Andrews & Valentine, 2000; Tedeschi & Calhoun, 2004). A recent trend, however, has been to investigate how some individuals recover, or return to their previous level of functioning, and how some thrive, or go beyond their original level of functioning. These two areas, resiliency and posttraumatic growth, have increased our understanding about responses to trauma. The purpose of this study was to investigate how factors that bolster resiliency, termed protective factors, are implicated in experiences of posttraumatic growth, particularly for individuals who have experienced early abuse and neglect.

Research in responses to trauma has primarily focused on childhood maladjustment, which has resulted in a large body of knowledge about the ways in which individuals struggle with adversity. However, despite experiencing severe and prolonged trauma, most individuals adapt successfully. In line with the positive psychology movement, greater attention has recently been paid to other responses to trauma, including deriving benefit from the experience of surviving a trauma. In fact, in many cases, individuals experience some form of benefit after struggling with adversity (Tedeschi & Calhoun, 2004). There is now a greater knowledge base pertaining to both maladjustment and positive growth experiences after facing adversity, and how both of these may occur at the same time (e.g., Dekel, Mandl & Solomon, 2011).

In line with this broader conceptualization of responses to adversity, O'Leary and Ickovics (1995) described three possible responses to trauma: survival, recovery, and thriving. When an individual simply survives the trauma, her post-trauma level of functioning is less than her pre-trauma level of functioning. In other words, she is not able to return to her previous level of functioning and may struggle with some level of maladjustment. When an individual recovers, she is able to return to her previous level of functioning, despite the trauma. This is often what is thought of as resiliency. However, some individuals are able to achieve a level of functioning that is greater post-trauma than it was pre-trauma. These individuals are thought to thrive and this idea that some individuals experience an improvement from their previous level of functioning is often thought of as "posttraumatic growth" (Tedeschi & Calhoun, 2004).

### *Childhood Maltreatment*

Child maltreatment is a major social problem in the United States (Pardeck, 1988). According to the U.S. Department of Health and Human Services (2010) child maltreatment can be defined as "any recent act or failure to act on the part of a parent or caretaker, which results in death, serious physical or emotional harm, sexual abuse or exploitation, or an act or failure to act which presents an imminent risk of serious harm" (p. 19). In 2012, 679,810 children were victims of child abuse (USDHHS, 2012). This is likely an underestimation, given that child abuse and neglect are often underreported to the authorities or lack sufficient information to be investigated or substantiated.

Child maltreatment typically encompasses four major subcategories: physical abuse or nonaccidental injury, sexual abuse, psychological abuse, and neglect (Damashek & Chaffin, 2012). Neglect represents the broadest category and is the most common form of maltreatment (USDHHS, 2010). Child neglect includes physical neglect (e.g., abandonment, letting a child live

in filth), educational neglect (the child is not attending school), medical neglect (when no effort is made to secure medical care), and emotional neglect (Pardeck, 1999; Damashek & Chaffin, 2012). In 2012 out of 679,810 cases of childhood maltreatment, 78.3% of the victims were neglected, 18.3% were physically abused, 9.3% were sexually abused, and 10.6% experienced "other" (e.g., threatened abuse; USDHHS, 2012). In terms of gender, research commonly finds that more males experience physical abuse and more females experience sexual abuse (MacMillan et al., 2013). Lifetime prevalence rates of child abuse vary widely, ranging from 13.8% (Zielinski, 2009) to 36% (Rich, Gingerich, & Rosén, 1997). Regardless of the prevalence rate, research on the effects of maltreatment indicates that children may experience severe and pervasive impairments in physical, emotional and social domains as a result of the maltreatment (MacMillan et al., 2013).

A host of neurological impairments have also been associated with childhood maltreatment. For instance, Gould and colleagues (1995) found specific impairments in neurocognitive functioning in adults who reported a history of abuse. These researchers found that neglect was strongly related to emotion processing impairments, and abuse was related to deficits in executive functioning and spatial working memory. Additionally, Perry (2002b) reported that the brains of children who had lived in Romanian orphanages (and were considered severely neglected) were significantly smaller than the norm. Specifically in terms of cognitive performance, maltreated children are at a greater risk for lower IQ scores and cognitive delays (Koenen et al., 2003). Koenen and colleagues (2003) found that children who had been exposed to domestic violence scored, on average, 8 points lower on an intelligence test than children who had not been exposed to violence. Finally, children who have been abused and neglected are at a greater risk for poor academic performance (Lowenthal, 1998). These studies suggest a clear



relationship between early experiences of abuse and neglect and later impaired neurological, cognitive, and academic functioning.

Emotionally, children who have been maltreated are often found to have problems regulating their affect and have higher rates of psychopathology (Lowenthal, 1998; Collishaw et al., 2007). For instance, posttraumatic stress disorder is more prevalent among children who have been abused as compared to children who have not been abused, and particularly sexually abused (Damashek & Chaffin, 2012). Children who report a history of maltreatment also have higher rates of personality and mood disorders compared to non-maltreated peers (Collishaw et al., 2007; Lowenthal, 1998) and eating disorders and suicidal ideation (Chandy et al., 1996; Collishaw et al., 2007). Abused and neglected children may also be more likely to develop maladaptive behaviors related to aggression, substance abuse, conduct problems and inappropriate sexual behaviors (Chandy, Blum & Resnick, 1996; Schuck & Widom, 2001). Children who have been maltreated often lack self-esteem and self-efficacy as well (Mullen et al., 1996), suggesting that some individuals who experience abuse and neglect do not view themselves as competent or worthwhile.

Socially, children who have been maltreated are at a greater risk for unemployment, family job loss, low family incomes, poverty, and lack access to health insurance (Zielinski, 2009). They may also experience interpersonal problems (Mullen et al., 1996) and avoid intimacy (Lowenthal, 1998). Moreover, these effects extend into adulthood, suggesting that the effects of childhood maltreatment may be both pervasive and long-lasting (Sneddon, 2003). Whether or not a child will experience negative outcomes from the maltreatment and how severe or pervasive these will be depends on a combination of several factors (e.g., the child's age and developmental level, the type of abuse, and the frequency, duration and severity of the abuse to

name a few), making it difficult to know definitively (Child Welfare Information Gateway, 2010). However, Valentine and Feinauer (1993) reported that 40% of adult survivors of childhood sexual abuse experienced impairments severe enough to require therapy.

### *Resiliency and Protective Factors*

The large body of literature on the severe and pervasive impairments that may be experienced by individuals who have been abused and neglected demonstrate psychology's focus on the negative consequences associated with experiencing a trauma. Interestingly, however, most children experience mild to moderate risk factors in their lives and do fine (Lamb-Parker, LeBuffe, Powell & Halpern, 2008). Fifty years ago researchers began looking at the fact that many individuals, in spite of adversity, are able to make a successful adaptation. Out of this literature came the term "resiliency" and an empirical investigation of the characteristics or qualities that foster resiliency. Resilience is defined as "the process of, capacity for, or outcome of successful adaptation despite challenging or threatening circumstances" (Masten, Best & Garmzey, 1990, p. 426), leading researchers to define "successful outcome" and "challenging or threatening circumstances" in many ways. Few studies have investigated resiliency amongst individuals who have experienced childhood maltreatment. However, McGloin and Widom (2001) found that 20% of individuals who had experienced childhood abuse and neglect were doing well in adulthood ("doing well" was defined as success in 6 of 8 domains of functioning, including employment, homelessness, education, social activity, psychiatric disorders, substance abuse, official arrests, and self-reports of violence). It is also important to note that resilience is typically defined as a process, not a trait. It is dynamic and individuals may show successful adaptation in some domains, but not others. Lastly, resilience is best thought of as functioning

through social support and other protective factors, such that individuals who have access to these things will be more likely to overcome their early adverse experiences (Masten, 2001).

In order to help foster resiliency in children, specific interventions have been developed (Lamb-Parker et al., 2008). Rather than focus on psychological maladjustment, these interventions tend to focus on the strengths of the child and the child's environment. In most cases, resilience appears to be a common phenomenon that results from basic adaptational systems that operate within the child – “ordinary magic” (Masten, 2001). Increasing these protective factors is often thought of as a way to foster resiliency. Protective factors “moderate the effects of individual vulnerabilities or environmental hazards so that the adaptational trajectory is more positive than would be the case if the protective factor were not operational” (Masten et al., 1990, p. 426). In other words, protective factors aid in resilience by helping to reduce the negative impact of the trauma on the individual. However, characteristics considered to be protective do not always serve a protective function across all types of trauma (Blum, McNeely & Nonnemaker, 2002). For instance, family closeness is often considered a protective factor (Blum et al., 2002). In a low family conflict environment, family closeness may result in stronger bonds between family members and a sense of cohesion amongst the whole family. However, in a high family conflict environment, family closeness may exacerbate the effects of the conflict, and lead to more stress (Blum et al., 2002). In this way, it is important to conceptually relate types of trauma and protective factors.

Protective factors are typically divided into three different contexts: individual, familial, and community (Blum et al., 2002). In the individual protective factors domain, a host of individual characteristics have been found to be associated with adaptive functioning. For instance, problem solving skills and emotional self-regulation are consistently supported in the

research as serving a protective function (Masten et al., 1990). These protective factors refer to an individual's ability to manage problems and cope with and regulate emotions effectively. Other individual protective factors include intelligence (Luthar, 1991; Masten & Coatsworth, 1998), greater education and flexibility (Benzies & Mychasiuk, 2009) an internal locus of control (Bolger & Patterson, 2001; Garmezy, 1981; Luthar, 1991) and an easy temperament (Perry, 2002a). These protective factors refer to an individual's cognitive traits as well as aspects of their personality. Additionally, self esteem and self-efficacy (Howard, Dryden & Johnson, 1999; Moran & Eckenrode, 1992; Werner 2005), having talents (Masten & Coatsworth, 1998; Shapiro & Friedman, 1996), having faith (Masten & Coatsworth, 1998; Valentine & Feinauer, 1993), and having a sense of meaning in life and a positive outlook on life (Masten et al., 2009) are all protective.

Aspects of the family and family functioning (e.g., having positive relationships with family members and opportunities for growth) have also been found to be protective for individuals who experience trauma (Jackson, Sifers & Warren, 2003). Several of these familial protective factors resemble individual protective factors, such as a family environment including optimism, a sense of humor, spirituality, flexibility, and open emotional expression (Black & Lobo, 2008). Individuals growing up in family environments marked by these traits may have a greater opportunity to develop these traits themselves. Other familial protective factors include authoritative parenting (Howard, Dryden & Johnson, 1999; Masten & Coatsworth, 1998), socioeconomic advantage (Masten & Coatsworth, 1998) and connections to supportive extended family (Masten & Coatsworth, 1998).

Lastly, protective factors can operate in a community context as well. In line with the individual protective factors of greater education and good intellectual functioning, access to

good schools is protective (Masten & Coatsworth, 1998). Access to good health care and safe neighborhoods are also protective (Benzies & Myachasiuk, 2009; Masten and Powell, 2003). Other community protective factors involve connections to prosocial individuals in the community (Luthar & Zigler, 1991; Masten & Coatsworth, 1998; Powell, 2002) as well as connections with prosocial organizations (Howard et al., 1999; Masten & Coatsworth, 1998). Research on protective factors in general suggests that when these factors are present, the individual has a greater chance of recovering from the trauma than if these factors are absent.

The experience of resiliency is also influenced by gender. Although research in this area is sparse, studies suggest that a child's gender interacts with her environment to impact resiliency. For instance, Maples and colleagues (2014) investigated child abuse and neglect in college students. In this sample, the men were more resilient than the women, despite both genders having the same number of prior protective factors. However, she also found that women in the sample experienced more negative life events in general. These findings suggest that gender may be associated both with how many and what types of negative life events the child will experience as well as what coping strategies or protective factors are present. In terms of protective factors, research suggests that women may use more community and familial protective factors whereas men utilize more individual protective factors (e.g., Chandy, Blum & Resnick, 1996). However, women still utilize individual protective factors and men still utilize community and familial protective factors overall.

### *Posttraumatic Growth*

The investigation of resilience and how some people are able to overcome early experiences of trauma and be successful was an important step for expanding conceptualizations of trauma and how it impacts the individual. However, twenty years ago researchers began

investigating how some individuals were able to go above and beyond a state of recovery and thrive. Researchers increasingly recognized that some individuals were improving in functioning following their stressful or traumatic experiences, instead of just simply recovering from them. They described a transformational process in which an individual actively struggled with a trauma and found meaning and benefit in it (Tedeschi & Calhoun, 1995). In the 1990's, Tedeschi and Calhoun (1996) coined the term "posttraumatic growth" to describe this phenomenon. While other terms have been used to describe the same idea, including benefit finding and stress related growth, "posttraumatic growth" has become the term most widely used.

Posttraumatic growth refers to positive psychological change experienced as the result of struggling with challenging life circumstances (Tedeschi & Calhoun, 2004). Individuals experiencing posttraumatic growth do not merely recover— they thrive. These individuals learn to develop a more resistant attitude towards stressful or traumatic events and develop a more effective way to deal with negative events in the future (Zoellner & Maercker, 2006). While the term posttraumatic growth was formally introduced in the 1990's, the idea of deriving positive benefit from stressful situations is ancient and spans literature and philosophy (Calhoun & Tedeschi, 2004).

Posttraumatic growth can arise out of many types of traumatic or stressful events. Among those found in the literature include being diagnosed with cancer, being the parent of a child with severe health problems, being a war veteran, and suffering the loss of a loved one (Helgeson, Reynolds & Tomich, 2006). In fact, an early investigation of posttraumatic growth involved interviewing individuals who had lost a spouse or a child in a car accident 4-7 years previously (Lehman et al., 1993). Most of the participants in this study (74%) cited at least one positive benefit from the accident, including increased self-confidence, focusing on enjoying the present,

a greater appreciation of life, an increased emphasis on family, an increased openness and concern for others, and increased religiosity. In some samples, it is estimated that 40-60% of people who experience a traumatic event later report some form of benefit (Calhoun & Tedeschi, 1999).

The benefits that individuals experiencing posttraumatic growth report can be categorized into five domains: personal strength, new possibilities, relating to others, appreciation of life, and spiritual change (Calhoun & Tedeschi, 2006). In the personal strength domain, individuals often report that they believe in themselves more and feel emotionally stronger than before the traumatic event. With respect to new possibilities, individuals report that they find new interests, activities or career paths as a result of experiencing a traumatic event. In terms of relating to others, individuals report that they feel more connected to others and experience a greater sense of compassion. Individuals may also report that they value friends and family more and have a greater sense of intimacy. With respect to appreciation of life, individuals report feeling like there is more meaning in their lives and report greater enjoyment out of the little things (e.g., a loved ones laugh). Individuals may also report that they re-prioritized what matters in life. Lastly, with respect to spiritual change, individuals report an enhanced sense of spirituality and spiritual meaning. Some individuals also report greater engagement with existential questions.

According to Tedeschi and Calhoun (1995), the precursor to posttraumatic growth is a stressful or traumatic event. Tedeschi and Calhoun (2004) go on to stipulate that the traumatic event must present a challenge to how the person sees and understands the world. This can also be thought of as threats to the individual's core beliefs, or what the individual knows to be true about himself and the world around him (Triplett et al., 2011). Tedeschi and Calhoun posit that the individual then struggles to cognitively process the shattering of his core beliefs and

assumptions about the world. They explain that when an individual cognitively processes the event, he attempts to build new schemas and engages in rumination around the event; at first intrusively and then deliberately. Tedeschi and Calhoun believe that more intrusive rumination is associated with increased distress, whereas more deliberate rumination (i.e., deliberate reflection) around the event is related to posttraumatic growth (Triplett et al., 2011). Research supports the predictive nature of these two conditions. For instance, in a sample of college students Lindstrom and colleagues (2013) found challenge to core beliefs was the main predictor of posttraumatic growth, with rumination predicting an additional 6% of the variance. However, there are several problems with this research. For one, the data is cross-sectional, making it difficult to understand the experience of posttraumatic growth across time (Dekel et al., 2011). Additionally, the relationship among predictors is often unclear, making it difficult to discern the relative contribution of each predictor to the experience of posttraumatic growth (Dekel et al., 2011). Nevertheless, challenges to core beliefs and rumination appear to be important contributors to posttraumatic growth.

The relationship between distress and posttraumatic growth is also largely unclear, particularly over time. Although distress is thought of as the catalyst for posttraumatic growth (Joseph & Linley, 2005) and predicts posttraumatic growth (Dekel et al., 2011), there are many perspectives on distress and growth after the initial experience of the trauma. For instance, posttraumatic growth can co-occur with continuing posttraumatic distress (e.g., Tedeschi & Calhoun, 2004), posttraumatic growth and posttraumatic distress can be conceptualized as opposite ends of the same continuum, can be inversely related (higher levels of distress associated with lower levels of growth), or can have no relationship (Dekel et al., 2011). Much of the relationship between posttraumatic distress and posttraumatic growth appears to be



dependent on the sample. However, distress and growth can best be thought of as falling under a broad umbrella of psychological trauma reaction (Dekel et al., 2011).

Researchers have also focused on what individual characteristics may be associated with posttraumatic growth. Although not necessarily predictive, this line of research has suggested that posttraumatic growth is associated with positive affectivity, optimism, and hardiness (Dekel et al., 2011; Tedeschi & Calhoun, 2004). Additionally, intelligence, flexibility, determination, and willingness to take personal risks increase the likelihood that someone will experience posttraumatic growth (Aldwin, 1994), as does openness to religious change (Tedeschi & Calhoun, 2004). These individual characteristics associated with posttraumatic growth are similar to the individual protective factors cited in the resiliency literature. Moreover, social resources similar to those found in the resiliency literature (e.g., social support, religious resources, and community resources) have also been associated with posttraumatic growth (O'Leary & Ickovics, 1995). While it appears as though similar underlying social and emotional resources are associated with both posttraumatic growth and resiliency, there have been no empirical investigations of the relationship between the two.

Gender also seems to be related to the experience of posttraumatic growth. In a meta-analysis of experiences of posttraumatic growth, Vishnevsky and colleagues (2010) found small to moderate gender differences in posttraumatic growth, with women reporting more posttraumatic growth overall. One possible theoretical explanation offered for this finding was that women tend to engage in more deliberate rumination than men, which has been explicitly linked to greater posttraumatic growth. Vishnevsky and colleagues (2010) also found that women reported incrementally more posttraumatic growth as the mean age of the sample

increased, and suggested that this increase may be because women are more likely to experience events involving perceived loss as they age.

### *Childhood Abuse and Neglect and Posttraumatic Growth*

There have been few previous investigations of child maltreatment and posttraumatic growth. Conceptually, McElheran and colleagues (2012) created a model of posttraumatic growth that was specific to survivors of childhood sexual abuse. McElheran and colleagues built off of Kilmer's (2006) eight domains related to a child's ability to experience posttraumatic growth after trauma. These original eight domains included the child's pre-trauma beliefs, characteristics and functioning; the caregiver's post-trauma beliefs, characteristics and functioning (e.g., parent's coping styles and responses to the stress); how responsive caregivers were to trauma; trauma exposure (e.g., threat to world assumptions); relationships and support (e.g., encouragement of emotional expression, discussion of the trauma); appraisals, ruminations and cognitive processing; cognitive resources (e.g., accurate expectations for what one can control); and self-system functioning (i.e., self-efficacy). According to Kilmer (2006), children who functioned well before the traumatic event and had access to social support were more likely to experience posttraumatic growth. However, when the trauma was unexpected, longer lasting and more severe, the ability to experience posttraumatic growth was hindered.

McElheran and colleagues (2012) acknowledged these domains, and added three more that were important in predicting posttraumatic growth in individuals who had been sexually abused: attachment style, gender, and time since trauma. Securely attached children would expect social support, and would be able to access social support after the trauma. In this way, secure attachment, but not necessarily ambivalent or avoidant attachment, would predict posttraumatic growth, largely by operating through social support. McElheran and colleagues

also argued for the importance of gender in influencing posttraumatic growth. The researchers stated that gender influences what coping strategies are used (e.g., girls are more likely to seek support), and influences how adults interact with children, which makes it an important factor in how an individual responds to trauma. Lastly, McElheran and colleagues stated that time since trauma is also important in predicting posttraumatic growth. Here, the researchers argued that as time passes, individuals move from intrusive rumination to more deliberate rumination, which predicts posttraumatic growth. Interestingly, McElheran and colleagues' model encompasses both protective factors (e.g., social support) as well as factors specifically associated with posttraumatic growth (e.g., deliberate rumination), suggesting that both are implicated in the experience of posttraumatic growth for individuals who were sexually abused.

In fact, much of the research in the area of child maltreatment and posttraumatic growth pertains to childhood sexual abuse specifically. For example, in a sample of adult females who had experienced childhood sexual abuse, Wright and colleagues (2007) found that 87% of the women experienced at least one positive effect from surviving the trauma. Effects reported from surviving the trauma included personal growth and development, spiritual growth, and improved relationships with others. However, not all of these effects were related to positive adjustment, suggesting that the relationship between posttraumatic growth and adjustment needs to be investigated further.

Woodward and Joseph (2003) is one of the only investigations of posttraumatic growth and childhood maltreatment that included all subcategories of maltreatment. In their qualitative investigation of posttraumatic growth and early experiences of abuse in a sample of adults, Woodward and Joseph found ten themes that fit into three domains: inner drive towards growth, vehicles of change, and psychological changes. Effects reported in the inner drive towards

growth domain included an enhanced sense of faith and belief in the self as well as a greater will to live and more passion for living. In regards to vehicles of change, participants reported that they experienced a sense of awakening involving taking control and direction over their lives, a sense of validation and being genuinely accepted by others, greater self-valuing, a sense of mastery and control and a sense of belonging and connection. In terms of the psychological changes domain, benefits reported included increased insight and understanding, recognition of changes, processing of experiences, increased self-awareness, improved relationships and gaining new perspectives on life. Many of the examples of posttraumatic growth in the Woodward and Joseph (2003) study fit with Calhoun and Tedeschi's (2006) five domains of personal strength, new possibilities, relating to others, appreciation of life, and spiritual change. The results of the Woodward and Joseph (2002) study indicate that individuals who have suffered and survived early abuse and neglect may grow stronger from these experiences.

### *Current Study*

The purpose of the current study was to investigate experiences of posttraumatic growth in college students who have been abused and neglected in childhood. This study extended the research done previously on posttraumatic growth and childhood maltreatment by conducting an empirical investigation involving all types of maltreatment, instead of just childhood sexual abuse.

The study of posttraumatic growth from experiences of childhood abuse and neglect lends itself well to college students. For one, by the time the individual has enrolled in college they have likely had time to cognitively process the maltreatment. McElheran and colleagues (2012) found that time since the trauma predicts posttraumatic growth. College students are ideal for another reason as well. College represents an important milestone and developmental

challenge, and if one is able to adjust successfully despite experiencing early adversity, that would suggest that these individuals are displaying resiliency. Thus, a second goal of this study was to investigate the relationship between resiliency and posttraumatic growth in a sample of college students who report a history of maltreatment.

According to Masten and colleagues (1999) two conditions need to be met in any investigation of resiliency: an identification of the threat and the development of criteria indicative of a successful outcome. For the purposes of this study, the threat was defined as a history of child abuse and neglect, as measured by the Maltreatment History Questionnaire developed for this study. Good college adjustment was the indicator of successful outcome, and was measured using the College Adjustment Questionnaire (CAQ; Shirley & Rosén, 2010). The relationship between posttraumatic growth and resiliency has been largely unclear. It has been suggested that individuals who show significant resilience might not show posttraumatic growth (Tedeschi & Calhoun, 2004). Tedeschi and Calhoun argue that individuals who demonstrate resilience likely possess effective coping skills and a capacity to manage trauma that allows them to adapt more successfully. They note an important part of the posttraumatic growth process is the cognitive and emotional struggle with the trauma. They hypothesize that individuals who already possess resources (e.g., those who are resilient or "hardy") struggle less with the trauma and therefore, may not report as much growth from the trauma. However, these two concepts have not been directly studied and compared.

A third goal of this study was to investigate what protective factors moderate the relationship between early experiences of maltreatment and later reports of posttraumatic growth. For the purposes of this research question, a previously validated and comprehensive measure of protective factors was used (the SERI; Mohr & Rosén, 2012). Previous research on posttraumatic

growth has suggested that personality facets such as intelligence, flexibility, optimism, extraversion and openness to experiences are associated with greater levels of posttraumatic growth (Aldwin, 1994; Tedeschi & Calhoun, 2004). However, there has been little investigation of the relationship between specific protective factors and posttraumatic growth.

The research questions and hypothesis were as follows:

1. What was the prevalence rate of childhood maltreatment in a sample of college students at a large Western university? What was the prevalence rate for each of the types of maltreatment?

2A. What is the relationship between childhood maltreatment and posttraumatic growth?

Hypothesis: Based on Tedeschi and Calhoun (1995) it is hypothesized that childhood maltreatment will predict posttraumatic growth.

2B. Of those individuals reporting a history of childhood maltreatment, how many (what percentage) reported experiences of posttraumatic growth?

2C. Of those individuals reporting a history of maltreatment, what specific effects of posttraumatic growth are being reported? (e.g., greater sense of personal strength, enhanced interpersonal relationships)? Do the effects being reported differ by category of maltreatment?

3A. Of those individuals reporting a history of maltreatment, how many of them are adjusting well to college/displaying resiliency (what percentage)? How many of them are struggling to adjust to college (what percentage)?

3B. Of those individuals reporting a history of maltreatment and adjusting well to college, how many of them are reporting experiences of posttraumatic growth?

4. What protective factors moderate the relationship between early experience of maltreatment and reports of posttraumatic growth?

Hypothesis: There are few previous investigations of the role of protective factors in the experience of posttraumatic growth. Some research (e.g., Dekel et al, 2011; McElheran et al., 2012 and O'Leary and Ickovics, 1995) suggests that optimism, prosocial adults, and self-esteem are associated with posttraumatic growth. Coping styles, including the ability to engage in positive reframing and acceptance and the ability to utilize emotional support were added as exploratory moderation models. There are even fewer investigations explaining when individuals are able to adapt and thrive after traumatic experiences. Masten (2001) highlighted the importance of protective factors in helping an individual adapt after trauma, suggesting that individuals who have experienced trauma may be more likely to bounce back and thrive after a trauma when they are able to effectively utilize protective factors. In other words, the relationship between trauma and thriving is impacted by the utilization of social and emotional resources in that individuals who report greater presence of social and emotional resources are more likely to demonstrate resilience and thriving. This theoretical conceptualization of resilience and thriving warranted testing of a moderation model.

## CHAPTER II

### Method

#### *Participants*

Five hundred and thirty one students participated in data collection during the Spring of 2014. Thirty cases were removed from the data analysis due to missing trauma information or missing more than 75% of their data. It is likely that these participants left the website before completing the survey, and thus the final number of participants included in the study was 501. The data collection occurred at a large, Western university in the United States and students were recruited from Introduction to Psychology classes as well as upper division psychology classes. In return for participating in the study, participants received credit toward their Introduction to Psychology class or extra credit in their upper division classes.

For the entire sample, 361 participants (72%) identified as female and 140 (28%) male. With regard to ethnicity, 395 participants (78.8%) identified as Caucasian/White, 37 (7.4%) identified as Latino/Hispanic, 21 (4.2%) identified as Asian American, 16 (3.2%) identified as African-American, 5 (1%) identified as Hawaiian/Pacific Islander, 2 (0.4%) identified as American Indian/Native American, 1 (0.2%) identified as Alaska Native, 1(0.2%) identified as Middle Eastern American, 20 (4%) identified as Other, and 3 responses were missing. The majority of participants (94%;  $n = 471$ ) identified as heterosexual, while 11 participants (2.2%) identified as homosexual, 13 participants (2.6%) identified as bisexual, and 6 responses were missing. The average age of participants was 19.68 years. Participants were primarily Freshman (48.1%,  $n = 241$ ) and Sophomores (25.9%,  $n = 130$ ) while 68 participants (13.6%) identified as Juniors, 50 participants (10%) identified as Seniors, 7 participants (1.4%) identified as fifth year or above, and 5 responses were missing.



## *Measures*

**Child Abuse and Neglect.** Child abuse and neglect was assessed in two ways. The first was through the Childhood Maltreatment Questionnaires-Abuse and Childhood Maltreatment Questionnaire-Neglect (CMQ; Shirley & Rosén, 2010). Respondents were presented with specific experiences in childhood and adolescence that are considered to be indicative of maltreatment. Participants then rated the frequency of occurrence of these situations, ranging from 0 (never) to 4 (very often). The CMQ-A consists of 19 items across four subscales: sexual abuse, physical abuse, emotional abuse, and love. In investigations of internal consistency reliability in previous samples, alphas were .93, .89, .84, and .80 respectively. According to Shirley and Rosén (2010), in a sample of college students the CMQ Abuse Scale demonstrated good construct validity. The Neglect scale consists of 16 items and four subscales: emotional neglect, physical neglect, supervision neglect, and love. In a previous investigation of internal consistency reliability in a sample of college students, alphas were .91, .81, .85 and .8 respectively. Cronbach's alpha for the CMQ total score in this sample was estimated at 0.95. According to Shirley and Rosen, (2010), the CMQ Neglect Scale demonstrated good construct validity (see Appendix A for the measures).

The second way childhood maltreatment was assessed was through the Maltreatment History Survey (MHS). The MHS was developed for this study and provided respondents with definitions of the four major forms of maltreatment (physical abuse, sexual abuse, emotional abuse and neglect) taken from the Child Welfare Information Gateway (2008). Respondents were asked to rate the number of times each form of maltreatment occurred (0, 1, 2-5, 6-10 or more than 10), over what period of time the maltreatment occurred (less than 1 month, 1-6

months, 6-12 months, 1-2 years or more than 2 years) and how distressing these experiences were (0 "not at all distressing" to 4 "very distressing") (see Appendix B).

**Traumatic Events.** Given the importance of assessing for the presence of other traumatic events for individuals in the sample, a Trauma History Questionnaire was used. The presence of trauma was indicated by the following experiences taken from Triplett et al.'s (2001) research on trauma history and meaning in life in college students: 1) death of a close loved one, 2) very serious medical problem, 3) close friend, family member, or significant other experiencing a serious medical condition, 4) accident that lead to serious injury to themselves or someone close to them, 5) place of residence being damaged by fire or other natural causes, 6) endured a divorce, 7) physically assaulted, 8) sexually assaulted, 9) victim of a crime such as robbery or mugging and 10) being stalked. Participants are asked to indicate the frequency and severity of each traumatic event (with responses choices ranging from 0 "not severe" to 4 "extremely severe", and note when the traumatic event occurred (see Appendix C).

**Posttraumatic Growth.** Posttraumatic growth was assessed using the Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996). The PTGI has 21 items pertaining to positive outcomes following traumatic experiences. Respondents rated each item on a 6 point Likert scale ranging 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." Higher scores on the PTGI are indicative of more growth from the traumatic experience. The PTGI can be divided into 5 subscales: Relating to Others, New Possibilities, Personal Strength, Spiritual Change, and Appreciation of Life. In a sample of college students, internal consistency reliability was estimated to be 0.90 and test-retest reliability was estimated to be 0.71 (Tedeschi & Calhoun, 1996). In this sample, Cronbach's alpha for the full scale was estimated to be 0.95. Concurrent

and discriminant validity for the PTGI was assessed by comparing scores on the NEO Personality Inventory and the Life Orientation Test, suggesting that major personality traits (except for neuroticism) are positively correlated with the PTGI (Tedeschi & Calhoun, 1996; see Appendix D).

**Adult Outcomes.** Adult outcomes were investigated by using the College Adjustment Questionnaire (CAQ; Shirley & Rosén, 2010). The CAQ is composed of 14 items and is divided into three subscales: Academic Adjustment, Social Adjustment and Emotional Adjustment. Respondents are asked to rate “how true” items about college experiences are for them “at this time”. Response choices are measured using a 5-point Likert scale ranging from 1 "very inaccurate" to 5 "very accurate." The Academic Adjustment scale focuses on questions related to an individual’s ability to meet educational demands, and respondents are asked to rate questions pertaining to their achievement and motivation for learning. The Social Adjustment Scale focuses on the social aspect of college, and respondents are asked to rate questions pertaining to their interpersonal relationships and relationship satisfaction. The Emotional Adjustment Scale focuses on the emotional and psychological experience of the student, and respondents are asked to rate questions pertaining to how successful they have been at coping with the unique stresses of undergraduate life. In a sample of college students, alphas for the subscales were 0.89, 0.84, and 0.78, respectively (Shirley and Rosén, 2010). Full scale reliability in that sample was also good (alpha = 0.83) and adequate construct validity was demonstrated (see Appendix E). In this sample, Cronbach's alpha for the full scale was estimated to be 0.89.

**Protective Factors.** The number of protective factors and the degree to which they are present was examined using the Social and Emotional Resources Inventory (SERI; Mohr & Rosén, 2012). The SERI is a 50-item scale designed to measure the presence of individual,

familial, and community protective factors (see Appendix F). Respondents are asked to rate, on a 5-point Likert scale, how accurate certain statements are of them growing up and response choices range from 1 "very inaccurate" to 5 "very accurate." Example items include "when I was growing up I was intelligent", "when I was growing up I received warm parenting" and "when I was growing up I had a strong sense of faith or spirituality." The SERI is comprised of 12 subscales and a total score: intelligence, parenting practices, parent connections, self-esteem, money, resources, faith, talent, good schools, prosocial adults, kin connections, and prosocial organizations. In a sample of college students, internal consistency reliability estimates for the 12 subscales ranged from .84 to .97 and the coefficient alpha for the full scale was estimated to be .95. In this sample, internal consistency estimates for the subscales used ranged from 0.88 (prosocial adults) to 0.93 (self-esteem). Cronbach's alpha for the total SERI score was estimated to be 0.97.

However, the SERI does not measure coping or optimism and additional optimism and coping measures were used to gain information related to these constructs. In order to investigate coping the Brief COPE was used (Carver, 1997). The Brief COPE is a 28-item instrument that measures 14 coping strategies: self-distraction, active coping, denial, substance use, use of emotional support, use of instrumental support, behavioral disengagement, venting, positive reframing, planning, humor, acceptance, religion, and self-blame (see Appendix G). Participants were asked to rate each item ranging from 1 "I haven't been doing this at all" to 4 "I've been doing this a lot." Again, directions and wording were altered to reflect the past tense. Internal consistency reliability estimates for the subscales ranges from 0.5 (venting) to 0.9 (substance use). The Brief COPE is most effectively utilized by analyzing individual subscales. Internal

consistency reliability estimates for subscales used in this study ranged from 0.52 (acceptance) to 0.82 (emotional support).

For optimism, the Life Orientation Test Revised (LOT-R; Scheier, Carver & Bridges, 1994) was used. The LOT-R is a brief instrument that measures a generalized orientation towards optimism (vs. pessimism) (see Appendix H). The directions and wording were altered to reflect the past tense. Respondents were asked to rate 10 statements (four are "filler" items that are not scored) with response choices ranging from I agree a lot to I disagree a lot. Sample items include "In uncertain times, I usually expected the best" and "I hardly ever expected things to go my way". Internal consistency reliability was measured in the scale development study and yielded a Cronbach's alpha of 0.78 (Scheier et al., 1994). In this sample, Cronbach's alpha for the full scale was found to be 0.82. Test-retest reliability for four months, twelve months, twenty-four months and twenty-eight months in this same sample was estimated to be 0.68, 0.60, 0.56 and 0.79 respectively (Scheier et al., 1994). Adequate convergent validity was demonstrated with modest correlations between the LOT-R and the Rosenberg Self-Esteem scale (Scheier et al., 1994).

**Demographic Information.** Descriptive information about the sample was also gathered using a Demographic Information Questionnaire. This Questionnaire included information on participant's age, gender, ethnicity, year in school and sexual orientation (see Appendix I).

#### *Procedure*

Participants filled out the measures online. When they logged on to participate in the study, they were shown an informed consent document providing a description of the study, any potential risks associated with the study, and an assurance of their anonymity and confidentiality (see Appendix J). Participants were then directed to the measures, and all participants filled out

the CMQ, the Trauma History Survey, the PTGI, the CAQ, the SERI, the LOT-R, and the Brief COPE. If participants reported any history of maltreatment, they were directed to the PTGI asking them to fill out the PTGI in response to their experience of maltreatment. Participants' names were not linked to their responses on these measures in any way. All participants received a debriefing form at the end of the study thanking them for participating in the study and directing them to the Colorado State University Health Network-Counseling Services if any thoughts and feeling surrounding their past trauma resurfaced (see Appendix K).

## CHAPTER III

### Results

#### *Missing Data*

In order to manage missing data, multiple imputation was used. Multiple imputation is a Monte Carlo simulation technique in which complete datasets are created from the incomplete dataset using linear regression techniques (Schafer, 1999). Multiple imputation avoids the shortcomings of case deletion methods, including the loss of power that often occurs with these methods. Rubin (1987) suggests that unless the rates of missing data are unusually high, no more than 5-10 imputations are necessary to produce an accurate estimate of the data. Missing Values Analysis indicated that missing values did not exceed more than 5% for any of the imputed variables and that data was missing at random. Multiple imputation for missing values using the Fully Conditional Specification (MCMC) algorithm with maximum iterations set to 10 were completed. Minimum constraints were set to 0 for all variables included in the imputation model in order to exclude negative values for the variables. This imputation resulted in 5 imputed datasets in addition to the original dataset. Demographic variables and the categorical maltreatment variable were not included in the multiple imputation. This multiple imputation resulted in 3,006 data points.

#### *Preliminary Investigation of the Data*

Investigation of correlations and descriptive statistics of the variables revealed no problems related to multicollinearity (see Table 1 for further information). Visual inspection of histograms of the variables revealed that many of them were skewed. The emotional support, optimism, prosocial adults and SERI total variables were slightly negatively skewed. According to the recommendations of Tabachnik and Fidell (2007) a constant was subtracted from each of

these variables so that the smallest score was 1 and square root transformations were applied. Investigation of histograms for the self-esteem variable revealed moderate negative skew. A constant was subtracted from this variable so that the smallest score was 1 and a natural log transformation was applied to this variable. Visual inspection of the PTGI total score revealed it was slightly positively skewed and a square root transformation was applied. Acceptance, positive reframing, CAQ total and number of other traumatic life events were fairly normally distributed and did not need to be transformed. Visual inspection of all variables after transformations revealed adequate normality.

### *Prevalence of Maltreatment*

An important initial step in this analysis was to determine if maltreatment should be conceptualized as categorical (i.e., MHS self-report by participants indicating that they had experienced at least one situation that they felt would meet the threshold for physical abuse, emotional abuse, sexual abuse, or neglect based on the legal definitions) or continuous (i.e., CMQ total score). In order to make this determination, the relationship between the categorical maltreatment variable and total score on the CMQ was explored. Given that both variables measure maltreatment they theoretically should be highly related. The two variables demonstrated a strong positive relationship ( $r = 0.52$ ). Moreover, when the categorical maltreatment variable was regressed on the continuous CMQ total score, the categorical maltreatment variable significantly predicted CMQ total scores  $t(499) = 13.53, p < 0.01$ . However, the categorical maltreatment variable only predicted 27% of the variance in CMQ total scores.

Both scores involve the limitation of self-report and the assumption that participants are accurate historians. Additionally, closer investigation of the histogram of the CMQ indicated



significant positive skew that was not corrected with transformations. Therefore, the categorical maltreatment variable (MHS) based on self-identification with the legal definitions of maltreatment was chosen for this study, enhancing interpretability of the results. This maltreatment variable was dummy-coded for use in regression equations.

The first research question pertained to the prevalence of maltreatment in a college student sample. A total of 260 participants out of the 501 (51.8%) reported experiencing maltreatment. Of those participants who reported experiencing maltreatment, 125 reported physical abuse, 69 reported sexual abuse, 194 reported emotional abuse and 63 reported neglect. This yields a prevalence rate for this sample of 24.9% for physical abuse, 13.7% for sexual abuse, 38.7% for emotional abuse and 12.6% for neglect.

Chi squared tests of independence were conducted on demographic variables in order to assess for differences between the maltreated and non-maltreated sample. Chi squared tests were chosen based on the categorical nature of the demographic information. Results suggest that the proportion of individuals in the maltreated and non-maltreated samples was not significantly related to the following demographic characteristics: year in school,  $\chi^2(4, N = 496) = 1.63, p = 0.802$ ; ethnicity;  $\chi^2(8, N = 498) = 8.59, p = .38$ ; and sexual orientation,  $\chi^2(3, N = 498) = 2.16, p = 0.54$ . There was a significant relationship between maltreatment and gender,  $\chi^2(1, N = 497) = 9.54, p = 0.00$ , such that there were a greater proportion of females in the maltreated sample than in the non-maltreated sample. However, the effect size was small ( $V = 0.139$ ; Pallant, 2007). Out of the 125 participants that reported physical abuse, 32 (25.6%) were male and 93 (74.4%) were female. Out of the 69 participants that reported sexual abuse, 6 (8.7%) were male and 63 (91.3%) were female. Out of the 194 participants that reported emotional abuse, 40 (20.6%) were male and 154 (79.4%) were female. Out of the 63 participants who reported neglect, 12 (19%) were

male and 51 (81%) were female. Lastly, an independent samples t-test was conducted in order to compare age between the maltreated and non-maltreated sample. A t-test was chosen based on the continuous nature of the age variable. There was not a significant difference between ages in the samples,  $t(391) = -0.15, p = 0.884$  (two-tailed).

The correlations between the frequencies of the four types of maltreatment were highly variable, although they were all in a positive direction (see Table 2 for more information). The frequency of emotional abuse and neglect demonstrated the strongest relationship ( $r = 0.45$ ). In other words, more occurrences of emotional abuse were related to more occurrences of neglect. The frequency of sexual abuse and emotional abuse demonstrated the weakest relationship ( $r = 0.21$ ), but still a positive one, indicating that more occurrences of sexual abuse were related to more occurrences of emotional abuse. The moderate, positive correlations between the frequencies of the four types of maltreatment is not surprising given the comorbidity between abuse types in this sample. Indeed, 124 out of the 260 (48%) participants who reported maltreatment endorsed the occurrence of more than one type of maltreatment.

#### *Maltreatment and Posttraumatic Growth*

In order to address the second research question, whether maltreatment significantly predicted posttraumatic growth, the dummy-coded maltreatment variable was regressed on the transformed PTGI total score. Results revealed that maltreatment (MHS) significantly predicted posttraumatic growth (PTGI),  $t(499) = -4.32, p < 0.01$ . Additionally, 236 (91%) individuals who reported experiencing childhood maltreatment also reported some experience of posttraumatic growth as evidenced by scores of 1 or more on the PTGI ( $M = 39.57, SD = 29.35$ ). In terms of type of maltreatment and specific areas of growth, no differences existed between the type of maltreatment and the areas of growth reported. It should be noted, however, that differences

between type of maltreatment and area of growth could not be statistically explored due to a violation in the assumption of independence of observations (i.e., some participants reported experiencing multiple types of maltreatment). However, a descriptive account is given.

Many individuals who endorsed experiences of maltreatment reported growing the most in terms of relating to others. The relating to others items pertained to having compassion for others, feeling closer to others, and valuing relationships more. Analysis of qualitative responses revealed that after the maltreatment participants reported relying more on friends, valuing relationships more, feeling a greater empathy for others, and building stronger and more stable relationships. One participant stated: "I realized that the people I love care for me and would do anything to help me."

The New Possibilities subscale included items that encompassed developing new interests and feeling like there are new possibilities to explore or to be involved in. A number of participants reported feeling more passionate about pursuing careers in the helping professions and feeling more confident as a student. As one participant described, "I realized my passion of being an advocate for children as a future career."

The Personal Strength subscale included items that encompassed a greater sense of self-efficacy and greater feelings of independence and self-reliance. Analysis of qualitative responses revealed that participants reported feeling more independent, feeling better able to stand up for themselves, feeling like they had more power over their circumstances, and feeling better able to cope with negative life experiences. As one participant explained:

"I am a stronger woman, a survivor of sexual assault, and I wouldn't go in the past and change it if I could because I wouldn't be the same woman I am today if I did."

The Appreciation for life subscale encompassed items pertaining to exploring what priorities are important in life and a greater appreciation for the value of life. As one participant stated “It has changed the way I look at my parents for the better and for the worse, but definitely made me appreciate more of the pleasures in life.” Another participant reported: “since then my life has changed in a sense that I make myself grateful everyday I am alive and healthy.”

Participants reported growing the least in the area of spiritual change. These items pertained to having a stronger faith or a better understanding of spiritual matters. Analysis of qualitative comments revealed that participants mostly reported spiritual changes in the form of increased spirituality. As one participant stated:

“Until God came in the picture, the first (sexual) event caused me to close down. I was no longer the dancing, singing, and outgoing child. Once I found my faith though, I discovered healing. I am now stronger because of what happened to me.”

### *Maltreatment and College Adjustment*

The third research question pertained to the relationship between childhood maltreatment (MHS) and later college adjustment (CAQ). Good college adjustment in individuals who have experienced childhood maltreatment indicates a positive or successful outcome. For Masten and colleagues (1999), this positive or successful outcome is a necessary condition in order to demonstrate resiliency. Good adjustment was conceptualized in this study as a total score on the CAQ that was no more than 1 standard deviation below the average CAQ score for non-maltreated individuals. Poor adjustment was conceptualized as a score on the CAQ that was more than 1 standard deviation below the average CAQ score. In this sample, the average CAQ total score for non-maltreated individuals was 38.83 (SD = 9.56; see Table 3 for further descriptive information for the non-maltreated sample). Therefore, poor adjustment in the

maltreated sample would be indicated by a score on the CAQ that was lower than 29. In the sample reporting maltreatment, 78 participants (30%) reported poor adjustment while 182 (70%) reported good adjustment (see Table 4 for further descriptive information for the maltreated sample). In the non-maltreated sample, 37 participants (15.4%) reported poor adjustment while 204 participants (84.6%) reported good adjustment.

An independent samples t-test was conducted in order to assess whether there was a significant difference in college adjustment between the maltreated and non-maltreated participants. Results showed that the non-maltreated participants had significantly higher scores on the CAQ than the maltreated participants,  $t(499) = 4.78, p < 0.01$ .

An additional area of interest was the relationship between maltreatment, good college adjustment, and posttraumatic growth. In other words, do resilient individuals (e.g., those that experienced maltreatment and were adjusting well to college) display posttraumatic growth? In this sample, 182 individuals who had experienced maltreatment were adjusting well to college. Eighteen of these participants did not report any experience of posttraumatic growth on the PTGI, as evidenced by a score of 0. One hundred and sixty four participants (90% of the maltreated sample that was adjusting well to college) reported some experience of posttraumatic growth as evidenced by a score of one or more on the PTGI. Furthermore, 98 participants (40.2% of the participants who experienced maltreatment, were adjusting well to college and reported posttraumatic growth), fell no more than one standard deviation below the mean score (39.70) on the PTGI.

While this establishes that many individuals who endorsed maltreatment in childhood are reporting both good adjustment to college and posttraumatic growth, the nature of this relationship is still largely unclear. In order to explore this relationship further, a simple linear

regression was performed where the transformed PTGI total score was regressed on the CAQ total score. Results suggest that scores on the PTGI do not predict scores on the CAQ:  $t(499) = 1.23, p = 0.22$  for maltreated participants. Although there is not a predictive relationship between posttraumatic growth and college adjustment, there may be common characteristics underlying both constructs for individuals who report a history of maltreatment, which are investigated in the next section.

### *Maltreatment, Posttraumatic Growth and Protective Factors*

Hayes (2012) outlines advantages of the PROCESS macro in conducting moderation analyses. For one, the PROCESS macro generates confidence intervals for regression coefficients and allows for the computation of bootstrapped confidence intervals. For probing interactions, the PROCESS macro allows for more comprehensive estimates of the moderator at the 10th, 25th, 50th, 75th and 90th percentile. The PROCESS macro also allows for heteroscedasticity-consistent standard error estimates, which help ensure that the validity of inferences drawn from the analyses are not compromised by a potential violation in the assumption of homoscedasticity (Hayes, 2012). However, at this time multiple imputation techniques are not compatible with the PROCESS macro and with bootstrapping techniques. Since a missing values analysis indicated that missing values did not exceed more than 5% for any of the imputed variables and that data was missing at random, single imputation using the expectation-maximization (EM) algorithm was employed. When the percentage of missing data is low and data is missing at random, imputation using the EM algorithm yields unbiased parameter estimates and improves statistical power of the analyses (Enders, 2001).

In order to investigate the relationship between maltreatment, protective factors, and posttraumatic growth, a series of moderation analyses were conducted. Before a moderation analysis can be properly conducted, several assumptions need to be met. The first assumption is linearity of the variables included in the model. Linearity was assessed by obtaining residuals using regression analyses and then plotting these residuals against each other. The dependent variable (PTGI) was regressed on the mediator (a specific social/emotional resource) and the control variable (number of other traumatic life events). Then, the dummy-coded independent variable (MHS) was regressed on the moderator and the control variable. Residuals from these two models were saved and plotted in a scatterplot. The scatterplot revealed that a linear relationship was appropriate.

Next, the dependent variable was regressed on the independent and control variables. The moderator variable was then regressed on the independent variable and control variable. Residuals from these two models were plotted in a scatterplot. Results revealed that a linear relationship remained appropriate. Then, the dependent variable was regressed on the control variable and the independent variable was regressed on the control variable. Residuals from these two models were plotted in a scatterplot. Results revealed that a linear relationship remained appropriate. The moderator was then regressed on the control variable and the independent variable was regressed on the control variable. Residuals from these two models were plotted in a scatterplot. Results revealed a linear relationship remained appropriate. Lastly, the full model was analyzed. The dependent variable was regressed on the independent, moderator, and control variables. Both the residuals and predicted values for this model were obtained and plotted in a scatterplot. Results revealed that a linear model was appropriate for the full model. These

regression analyses were run for each moderator variable and results suggest that the assumption of linearity is met.

The second assumption that needs to be met in order to conduct moderation analyses is normality of the variables included in the model. Normality was assessed in several ways. The first was visual inspection of a histogram of the variables. Square root transformations were applied to the PTGI total score, emotional support, prosocial adults, optimism, and the SERI total score. A natural log transformation was applied to the self-esteem variable. Number of traumatic life events, acceptance, positive reframing and the CAQ total score variables were adequately normally distributed. Visual inspection of the histograms of the transformed variables indicated adequate normality. The second was visual inspection of the normality of residuals. Visual inspection of the P-P plots of the residuals for each model indicated that normality of the residuals for all of the moderation models tested was maintained.

Lastly, outliers were located by running the regression model and obtaining Cook's distance values. Cook's distance measures the effect on the regression equation when a particular datapoint is deleted (Cook & Weisberg, 1982). The model included the dummy-coded independent variable (maltreatment), dependent variable (posttraumatic growth), the mediator (a specific social/emotional resource), and the control variable (number of other traumatic life events). Since outliers may have undue effects on regression analyses, cases with Cook's distance values greater than  $4/n$  (.008 for this sample) were removed (Bolen & Jackman, 1990). Removal of these outliers did not significantly impact the models and thus all 501 cases were retained for analysis.

Linear regression with bootstrapping was used to assess how social and emotional resources moderate the relationship between childhood maltreatment and posttraumatic growth.



Interactions were examined using procedures described in Hayes (2013) and 'process syntax.' The HC3 correction was employed to provide heteroscedasticity-consistent standard error estimates for the linear regression models. Separate analyses were run for six different social and emotional resources based on previous research and exploratory hypotheses: (1) *self-esteem*, (2) *acceptance*, (3) *prosocial adults*, (4) *emotional support*, (5) *optimism* and (6) *positive reframing* (see Table 5 for moderation models). A seventh exploratory moderation model was run for total social and emotional resources (SERI Total). Before a moderation analysis could be effectively run, all continuous predictor variables were centered at their mean (Aiken & West, 1991). This helps to reduce potential issues with multicollinearity and increases interpretability of the results (Baron & Kenny, 1986). Additionally, all moderation models were run with both transformed and non-transformed variables. For all models the same results were significant and thus, the non-transformed results are provided to enhance interpretability.

To test the hypothesis that posttraumatic growth in individuals who report a history of maltreatment was related to social and emotional resources, and more specifically, whether *self-esteem* moderated the relationship between childhood maltreatment and posttraumatic growth, linear regression was conducted. Maltreatment significantly predicted posttraumatic growth,  $b = -11.34$ , 95% CI [-16.68, -5.99],  $t = -4.16$ ,  $p < 0.01$ . Self-esteem did not significantly predict posttraumatic growth,  $b = 0.46$ , 95% CI [-0.38, 1.30],  $t = 1.08$ ,  $p > 0.05$ . Furthermore, the interaction term (maltreatment\**self-esteem*) was not significant,  $b = -0.76$ , 95% CI [-1.85, 0.33],  $t = -1.36$ ,  $p > 0.05$ , 95% bootstrapped CI [-1.87, 0.42]. Results suggest that moderation was not occurring. Overall, the predictors in this model accounted for 5.7% of the variance in posttraumatic growth,  $R^2 = 0.057$ ,  $p < 0.01$ .

To test the hypothesis that *acceptance* moderated the relationship between childhood maltreatment and posttraumatic growth, linear regression was conducted. Maltreatment significantly predicted posttraumatic growth,  $b = -12.03$ , 95% CI [-17.08, -6.98],  $t = -4.68$ ,  $p < 0.01$ . Acceptance significantly predicted posttraumatic growth,  $b = 4.88$ , 95% CI [2.33, 7.43],  $t = 3.76$ ,  $p < 0.01$ . However, the interaction term (maltreatment\*acceptance) was not significant,  $b = -2.62$ , 95% CI [-6.39, 1.16],  $t = -1.36$ ,  $p > 0.05$ , 95% bootstrapped CI [-6.10, 1.27]. Results suggest that moderation was not occurring. Overall, the predictors in this model accounted for 8.5% of the variance in posttraumatic growth,  $R^2 = 0.085$ ,  $p < 0.01$ .

To test the hypothesis that the presence of *prosocial adults* moderated the relationship between childhood maltreatment and posttraumatic growth, linear regression was conducted. Maltreatment significantly predicted posttraumatic growth,  $b = -10.66$ , 95% CI [-15.78, -0.54],  $t = -4.09$ ,  $p < 0.01$ . The presence of prosocial adults significantly predicted posttraumatic growth,  $b = 1.63$ , 95% CI [0.69, 2.56],  $t = 3.42$ ,  $p < 0.05$ . The interaction term (maltreatment\*prosocial adults) was also significant,  $b = -1.75$ , 95% CI [-2.96, -0.54],  $t = -4.09$ ,  $p < 0.01$ , 95% bootstrapped CI [-2.90, -0.48]. Results suggest that moderation was occurring. Figure 1 plots the interaction and shows the simple slopes for the effect of prosocial adults on posttraumatic growth for individuals who report a history of maltreatment. Probing the interaction suggested that maltreated individuals who reported higher levels of prosocial adult involvement also reported more posttraumatic growth, whereas individuals who were maltreated and who reported less prosocial adult involvement reported less posttraumatic growth. Overall, the predictors in this model accounted for 7.3% of the variance in posttraumatic growth,  $R^2 = 0.073$ ,  $p < 0.01$ .

To test the hypothesis that *emotional support* moderated the relationship between childhood maltreatment and posttraumatic growth, linear regression was conducted.

Maltreatment significantly predicted posttraumatic growth,  $b = -10.65$ , 95% CI [-15.75, -5.54],  $t = -4.10$ ,  $p < 0.01$ . Emotional support significantly predicted posttraumatic growth,  $b = 4.49$ , 95% CI [2.53, 6.44],  $t = 4.52$ ,  $p < 0.01$ . However, the interaction term (maltreatment\*emotional support) was not significant,  $b = -2.39$ , 95% CI [-5.14, 0.35],  $t = -1.71$ ,  $p > 0.05$ , 95% bootstrapped CI [-4.96, 0.45]. Results suggest that moderation was not occurring. Overall, the predictors in this model accounted for 9.3% of the variance in posttraumatic growth,  $R^2 = 0.092$ ,  $p < 0.01$ .

To test the hypothesis that *optimism* moderated the relationship between childhood maltreatment and posttraumatic growth, linear regression was conducted. Maltreatment significantly predicted posttraumatic growth,  $b = -11.59$ , 95% CI [-16.96, -6.21],  $t = -4.23$ ,  $p < 0.01$ . Optimism did not significantly predict posttraumatic growth,  $b = 0.18$ , 95% CI [-0.75, 1.11],  $t = 0.39$ ,  $p > 0.05$ . Furthermore, the interaction term (maltreatment\*optimism) was not significant,  $b = -0.33$ , 95% CI [-1.46, 0.80],  $t = -0.57$ ,  $p > 0.05$ , 95% bootstrapped CI [-1.50, 0.82]. Results suggest that moderation was not occurring. Overall, the predictors in this model accounted for 5.4% of the variance in posttraumatic growth,  $R^2 = 0.054$ ,  $p < 0.01$ .

To test the hypothesis that the ability to engage in *positive reframing* moderated the relationship between childhood maltreatment and posttraumatic growth, linear regression was conducted. Maltreatment significantly predicted posttraumatic growth,  $b = -10.91$ , 95% CI [-15.96, -5.86],  $t = -4.24$ ,  $p < 0.01$ . Positive reframing significantly predicted posttraumatic growth,  $b = 3.83$ , 95% CI [1.57, 6.10],  $t = 3.32$ ,  $p < 0.01$ . However, the interaction term (maltreatment\*positive reframing) was not significant,  $b = -0.01$ , 95% CI [-3.07, 3.03],  $t = -0.01$ ,  $p > 0.05$ , 95% bootstrapped CI [-2.90, 3.05]. Results suggest that moderation was not occurring.

Overall, the predictors in this model accounted for 9.9% of the variance in posttraumatic growth,  $R^2 = 0.099$ ,  $p < 0.01$ .

A final exploratory moderation model was added to investigate whether or not social and emotional resources in general (SERI Total) moderated the relationship between childhood maltreatment and posttraumatic growth. Maltreatment significantly predicted posttraumatic growth,  $b = -8.60$ , 95% CI [-13.80, -3.40],  $t = -3.25$ ,  $p < 0.01$ . Total social and emotional resources significantly predicted posttraumatic growth,  $b = 0.21$ , 95% CI [0.10, 0.32],  $t = 3.87$ ,  $p < 0.05$ . The interaction term (maltreatment\*SERI total) was also significant,  $b = -0.22$ , 95% CI [-0.37, -0.07],  $t = -2.92$ ,  $p < 0.01$ , 95% bootstrapped CI [-0.36, -0.09]. Results suggest that moderation was occurring. Figure 2 plots the interaction and shows the simple slopes for the effect of social and emotional resources on posttraumatic growth for individuals who report a history of maltreatment. Probing the interaction suggested that maltreated individuals who reported more social and emotional resources also reported more posttraumatic growth, whereas individuals who were maltreated and who reported less social and emotional resources also reported less posttraumatic growth. Overall, the predictors in this model accounted for 7.9% of the variance in posttraumatic growth,  $R^2 = 0.079$ ,  $p < 0.01$ .

## CHAPTER IV

### **Discussion**

The primary goal of this study was to investigate the relationship between childhood maltreatment and posttraumatic growth. Specific focus was paid to how protective factors moderated this relationship and impacted an individual's ability to thrive after this type of trauma. Results indicated that maltreatment significantly predicted posttraumatic growth and that individuals who have experienced maltreatment report a variety of growth experiences resulting from this trauma including: stronger relationships with others, feelings of independence and empowerment, and confidence in their ability to handle negative life events. Results also suggest that acceptance, emotional support and positive reframing all significantly predicted posttraumatic growth while the presence of prosocial adults and greater access to social and emotional resources in general moderated the relationship between childhood maltreatment and posttraumatic growth.

#### *Maltreatment in College Students*

A goal of this study was to investigate the prevalence of maltreatment in college students. College student participants read the legal definitions of physical abuse, sexual abuse, emotional abuse, and neglect, and self-identified as having experienced any of these forms of maltreatment. Results indicated that a total of 260 participants out of the 501 (51.8%) reported experiencing maltreatment growing up. This rate is similar to other studies of maltreatment in college students (Arata et al., 2005; Maples et. al, 2013; Rich et al., 1997). However, studies have also reported lower rates of maltreatment. For example, Richmond and colleagues (2009) reported a childhood maltreatment prevalence rate of 30% in their investigation of victimization and distress in college women. Additionally, Clemmons and colleagues (2007), in a study of maltreatment in

college students, reported a prevalence rate of 20% for any single type of maltreatment (i.e., 20% of the sample reported experiences that met the threshold for physical abuse, psychological abuse, sexual abuse or neglect) and 14% for multiple types of maltreatment (i.e., 14% of the sample met the threshold for more than one type of maltreatment). A difference in the prevalence of maltreatment, even within college student samples, likely reflects differences in the measurement of maltreatment. Despite utilizing the legal definitions of maltreatment in this study, this variable still lacked specificity (e.g., by not following up about the extent of physical injuries suffered as a result of physical abuse) and may have resulted in a liberal classification of maltreatment.

Of the participants who reported experiencing maltreatment, 125 (24.9%) reported physical abuse, 69 (13.7%) reported sexual abuse, 194 (38.72%) reported emotional abuse and 63 (12.57%) reported neglect. According to the U.S. Department of Health and Human Services 678,810 children were victims of child abuse in 2012; 78.3% of the victims were neglected, 18.3% were physically abused, 9.3% were sexually abused, and 10.6% experienced "other" (e.g., threatened abuse). In an investigation of childhood maltreatment in college students, Maples and colleagues (2013) reported the following prevalence rates for type of maltreatment: 30.9% supervision neglect, 29.9% emotional abuse, 25.9% physical abuse, 24.3% emotional neglect, 10% sexual abuse and 5.3% physical neglect. Prevalence rates for types of maltreatment vary widely and depend largely on the classification system and operational definitions used as well as the sample. Additionally, correlations between abuse types in this study demonstrated a moderate, positive relationship and suggested a rather high comorbidity between abuse types. In this sample 124 out of the 260 (48%) participants who reported maltreatment endorsed the occurrence of more than one type of maltreatment. This percentage is slightly lower than other

estimates (e.g., Maples et al., 2013). However, Herrenkohl and Herrenkohl (2009) investigated the co-occurrence of multiple types of maltreatment and found that estimates of comorbidity varied widely, ranging from 40% to above 90% depending on the study and sample (e.g., college students, CPS cases).

Furthermore, the type of maltreatment differed based on gender. Women reported experiencing more of every type of maltreatment than men. This difference became particularly noteworthy for sexual abuse, where 91.3% of the participants reporting sexual abuse identified as female. Conversely, physical abuse was the most reported type of maltreatment experienced by men in this sample. This finding fits well with Maples and colleagues (2013), which found that men experienced significantly more physical abuse than women and with research on rates of sexual abuse. In a sample of sexual abuse cases reported to law enforcement, Snyder (2000) found that by the age of 13, 90% of individuals who reported sexual abuse were women.

#### *Maltreatment, College Adjustment, and Posttraumatic Growth*

This study also sought to investigate the relationship between maltreatment and posttraumatic growth. According to theory, the experience of posttraumatic growth is preceded by a traumatic event (e.g., Tedeshi & Calhoun, 2004). This study supported this relationship as the presence of maltreatment significantly predicted posttraumatic growth. Moreover, 91% of individuals who reported maltreatment also reported some form of posttraumatic growth related to new possibilities, a greater appreciation for life, increased personal strength, improved relationships with others, and spiritual growth. Participants who endorsed a history of maltreatment reported the most growth in the area of improved relationships, and specifically, relying on friends more, valuing relationships more, feeling a greater empathy for others, and building stronger and more stable relationships. Participants also reported growth experiences

related to feeling more independent and empowered, feeling better able to cope with negative life experiences, gaining a greater appreciation for the value of life, pursuing careers in the helping profession, and building a stronger sense of faith. These areas of growth are related to previous investigations of growth experiences following maltreatment (e.g., Woodward & Joseph, 2003).

Posttraumatic growth can also be seen as a meaning-making process. According to Park (2010), the meaning-making process is similar to the process described by Tedeschi and Calhoun (2004). According to Park (2010), meaning-making is driven by a situational event that violates an individual's global sense of meaning. Global meaning is typically comprised of general values (e.g., sense of justice and control), views of the self and long and short-term goals. The individual then tries to either modify the appraisal of the situational event in accordance with global meaning (assimilation), or modifies global meaning in the context of the situational event (accommodation). The end result includes meanings made, which may be posttraumatic growth, identity changes or changes in meaning systems. Park (2010) argues that meanings made should theoretically be related to better adjustment. However, this may not be the case if perceived growth (i.e., an individual's retrospective report of growth from the trauma) differs from actual growth (e.g., change in growth reported over time; Frazier et al., 2009). For instance, Frazier and colleagues found a small relationship when they compared retrospective self-reports on the PTGI (e.g., I feel like my relationships with others have improved as a result of my trauma) to self-reported measures of actual change (e.g., an assessment of current standing of positive relationships with others). Furthermore, Frazier and colleagues found that actual growth was more associated with better adjustment, whereas perceived growth was more associated with distress.



A second area of interest for this study was also the relationship between maltreatment, adjustment and posttraumatic growth. Of note, individuals who did not report maltreatment demonstrated significantly higher levels of adjustment to college than those individuals who did report maltreatment. This is also significant in that good college adjustment was conceptualized in this study as a reflection of resilience. According to Masten and colleagues (1990), individuals demonstrating resiliency have experienced challenging life circumstances (e.g., a trauma) and are able to adapt successfully to life tasks in the aftermath of these challenging circumstances. In this study, self-report of previous maltreatment and good college adjustment was deemed to have met the criteria set by Masten and colleagues to demonstrate resiliency. Moreover, 90% of the maltreated sample that was adjusting well to college reported some experience of posttraumatic growth. However, this study did not find a predictive relationship between posttraumatic growth and college adjustment. One explanation for this may be that individuals are reporting perceived growth rather than actual growth (e.g., Frazier et al., 2009). Another explanation suggests that resilience and posttraumatic growth may share a common or multiple common underlying characteristics that result in similar outcomes, but one is not predictive of the other.

#### *Protective Factors and Posttraumatic Growth*

With regard to the relationship between protective factors and posttraumatic growth, this study found that acceptance, emotional support and positive reframing significantly predicted posttraumatic growth. This finding fits well with previous research on posttraumatic growth, and highlights the importance of accessing support after a trauma (O'Leary & Ickovics, 1995). This finding also fits well with research supporting the importance of cognitive processes in posttraumatic growth. Tedeschi and Calhoun (2004) describe how a precursor to posttraumatic growth involves a traumatic event that is cognitively perceived as a threat to how the individual

sees her world and the people in it. In this way, coping mechanisms such as acceptance and positive reframing may help individuals address and modify maladaptive beliefs and cognitive distortions that develop after a trauma (e.g., 'why did this happen to me,' 'the world is not safe'). In other words, individuals may use acceptance to reframe 'why did this happen to me' to 'this happened to me and I can control how I handle it' and may use positive reframing to change 'the world is not safe' to 'certain people and situations are not safe.' In this way, positive reframing serves two purposes: one is the ability to reframe specific maladaptive thoughts and the other is the ability to reframe the traumatic experience overall. In the latter, individuals must be able to reflect back on their experience and demonstrate insight into ways in which they have grown since the trauma. In essence, the way that posttraumatic growth is identified is based on one's ability to positively reframe his trauma as a growth experience.

However, none of these particular variables moderated the relationship between childhood maltreatment and posttraumatic growth. In other words, none of these protective factors enhanced posttraumatic growth for individuals who reported a history of abuse and neglect in particular. One potential explanation for this may be that the moderation model did not take into account where individuals are in their healing process. For example, for some of the individuals in this study the maltreatment was recent, and they may not have had time to process and reframe their experiences. Along these same lines, it could be that certain protective factors are more important based on where the individual is in the healing process. For example, acceptance might be more related to posttraumatic growth in individuals who have already utilized positive reframing and other coping skills to manage symptoms that may have arisen in the aftermath of the trauma. Furthermore, research suggests that acceptance in particular may be an outcome more so than a moderator (Park, 2010). Park (2010) suggests that acceptance may be

indicative of meanings made (similar to posttraumatic growth), rather than a factor that enhances the growth process.

Importantly, the presence of prosocial adults and social and emotional resources did moderate the relationship between childhood maltreatment and posttraumatic growth. Individuals who reported both maltreatment and endorsed feeling supported by adults outside of family members reported greater experiences of posttraumatic growth. This finding highlights the importance of mentorship, and particularly for individuals who report a history of abuse and neglect. This finding also highlights how mentorship may differ from emotional support. Whereas emotional support was not found to moderate the relationship between maltreatment and posttraumatic growth, the presence of prosocial adults did have a moderating effect. Items comprising the emotional support variable highlighted the presence or absence of emotional support. Items comprising the prosocial adults subscale described an adult who is active and involved in the individual's life. The distinction between these two variables highlights the importance of an active mentor for individuals who were maltreated over the availability of emotional support that may or may not be utilized. The moderating effect of prosocial adults on posttraumatic growth also highlights the importance of social support and the social context for individuals who report a history of maltreatment. Results suggest that individuals who have an identified person outside of the family who cares about and looks out for them may help these individuals grow from adversity. Although the prosocial adults scale did not specify who the prosocial adult is, it could be that teachers, coaches, religious leaders, or even individual therapists may play this role. Helping individuals who have experienced maltreatment connect with mentors outside of the family may be an important intervention.

Individuals who endorsed a history of maltreatment and reported greater presence of social and emotional resources in general also reported greater posttraumatic growth. This finding lends itself well to the idea that multiple protective factors, and their relationships with each other, may be implicated in the experience of posttraumatic growth for individuals who report a history of abuse and neglect. This finding also draws attention to the connection between posttraumatic growth and resiliency. Research has found that social and emotional resources (and specifically the SERI) predict resiliency in college students who report a history of maltreatment (Maples et al., 2013). This study found that social and emotional resources moderated the relationship between childhood maltreatment and posttraumatic growth. In both cases, protective factors appear to play a key role in helping individuals manage and thrive after a trauma. The difference appears to be in how the outcomes (resiliency and posttraumatic growth) are measured. For resiliency, the focus is on adaptation and measures of current functioning (e.g., college adjustment). For posttraumatic growth, the focus is on a self-identified process involving insight and reflection. However, the two constructs appear to be tapping in to and appear highly related to the underlying construct of access to social and emotional resources.

#### *Limitations and Directions for Future Research*

Although this study sought to investigate the prevalence of maltreatment in a college student sample, studying posttraumatic growth in a college student sample presents a limitation. Given the developmental challenges associated with enrolling in college, many students are already functioning well, complicating the study of the relationship between maltreatment and posttraumatic growth. In other words, given that this study tapped in to a high functioning population results may reflect this restriction in range and may not be generalizable to all individuals who have experienced maltreatment. Future research should seek to investigate

posttraumatic growth in a wider range of age and education level. Another interesting area of study would be to investigate what, if any, protective factors are associated more with posttraumatic growth in college students compared to posttraumatic growth in individuals who are not currently attending college.

Another limitation of this study is the reliance on self-report of maltreatment. College students read the legal definitions of physical abuse, sexual abuse, emotional abuse and neglect and were asked to report if they had experienced this. Although the use of legal definitions allowed for consistency, it also introduced a certain amount of subjectivity in the ratings and assumes that participants are accurate in their ability to report on previous life experiences. Additionally, the high prevalence of co-occurring types of maltreatment complicates defining and measuring these categories. For the purposes of this study participants were placed in to a "maltreated" or "non-maltreated" category based on their endorsement of the legal definitions of maltreatment. However, even within the "maltreated" group there is a large amount of variance in the experiences that comprise this group. Future research should seek to investigate posttraumatic growth quantitatively within different categories of maltreatment.

Similarly, the classification of maltreatment used in this study may have been too liberal. While the classification of maltreatment and non-maltreatment was based on legal definitions, follow up questions in order to further clarify whether these experiences would meet a reportable threshold (e.g., by asking about physical injuries sustained from reported physical abuse) may have increased the specificity of the maltreatment variable and resulted in a more stringent categorization. A more stringent categorization of maltreatment may have lead to different prevalence rates and a higher threshold for individuals to be categorized as experiencing maltreatment in childhood.

Lastly, this study was cross-sectional in nature limiting the understanding and interpretation of the posttraumatic growth process over time. Since the cross-sectional design of this study captured only a snapshot of posttraumatic growth in individuals who report a history of maltreatment, the nature of how posttraumatic growth develops is largely unknown. Future research should focus on studying posttraumatic growth over time, and what, if any, protective factors may be more important at different stages of the growth process. Also since this study was cross-sectional in nature it limits causal interpretations of the results. For instance, we cannot say that certain social and emotional resources cause individuals to experience posttraumatic growth, but we can say that protective factors appear to be highly important and related to the posttraumatic growth process and to an individual's ability to reflect on a trauma as a growth experience.

### *Implications*

These findings are also particularly relevant for designing and implementing interventions for individuals who report a history of maltreatment. Previous studies as well as this study have supported the idea that protective factors play a crucial role in helping individuals recover after a trauma. This study highlighted the importance of the presence of prosocial adults in particular for individuals who report a history of maltreatment. This finding fits with a recent movement in the mental health field to involve peer support specialists in recovery, particularly for individuals with severe and persistent mental illness (SPMI; Lloyd-Evans et. al, 2014). While research in this area is still largely developing, it suggests that, for individuals with SPMI, the involvement of peer support specialists and counselors improve an individual's sense of empowerment, hope, and awareness of symptom triggers (Chinman et al., 2014; Cooks et al.,

2010). Results from this study and from the research on peer support specialists highlight the importance of mentorship and how mentors can have a profound impact on growth and recovery.

In order to help mental health care providers assess for and conceptualize an individual's access to protective factors, a measure of social and emotional resources that is not proprietary, quick, and able to be incorporated into an intake or screening assessment may be helpful. A focus on protective factors in addition to mental health symptoms is consistent with strength-based perspectives and a movement in the mental health field to conceptualize what is both going well for a client and what is not. This may lead to a more well-rounded understanding of the client and may help inform treatment interventions. For example, if a client reports deficits in certain protective factors (e.g., family or social support, self-esteem) treatment may directly address helping the individual build up these protective factors. On the other hand, if the individual reports the presence of protective factors (e.g., having a talent or feeling good at something), interventions may focus on helping an individual utilize this protective factor in order to build up an area of weakness. For example, a client may be confident in her artistic abilities. A mental health care provider might encourage her to become involved in art classes or groups in order to build up social support, may encourage her to share their artwork with others in order to increase praise and self-esteem, or may help her utilize art as a coping skill.

### *Conclusion*

This study sought to investigate the relationship between maltreatment and posttraumatic growth in a college student sample. Particular focus was paid to which protective factors enhance an individual's ability to experience posttraumatic growth. Results revealed that about 52% of the sample identified as having experienced maltreatment growing up. An overwhelming majority of participants who reported maltreatment growing up also reported growth from the experience,

including strengthened relationships, new interest areas and increased personal strength. Positive reframing, acceptance, and emotional support all significantly predicted posttraumatic growth. The presence of prosocial adults and greater access to social and emotional resources in general moderated the relationship between childhood maltreatment and posttraumatic growth, such that greater number of these protective factors was associated with greater posttraumatic growth. This study also emphasizes the importance of prosocial adults and mentorship. Results also help inform treatment and interventions for individuals who report a history of maltreatment. Mental health care providers are encouraged to gather information related to an individual's access to protective factors, to target interventions based on increasing an individual's social and emotional resources, and to pay particular attention to the importance of mentorship and modeling.



Table 1

*Correlations, Means and Standard Deviations*

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. CAQ Total	1	0.29**	0.38**	0.21**	0.18**	0.29**	0.19**	0.04	-	-	-0.02	0.11*
2. SERI Total	0.29**	1	0.45**	0.31**	0.74**	0.72**	0.25**	0.78	-	0.47**	0.13**	-0.05
3. Optimism	0.38**	0.45**	1	0.27**	0.25**	0.51**	0.32**	0.07	-	0.39**	0.01	-0.07
4. Emotional Support	0.21**	0.31**	0.27**	1	0.30**	0.18**	0.49**	0.31**	-	0.18**	0.20**	-0.03
5. Prosocial Adults	0.18**	0.74**	0.25**	0.30**	1	0.45**	0.21**	0.65	-	0.25**	0.11*	-0.05
6. Self-Esteem	0.29**	0.72**	0.51**	0.18**	0.46**	1	0.24**	0.07	-	0.38**	0.02	-0.11
7. Positive Reframe	0.19**	0.25**	0.32**	0.49**	0.21**	0.24**	1	0.39**	-	-0.14	0.30**	-0.02
8. Acceptance	0.04	0.78	0.071	0.31**	0.07	0.07	0.39**	1	-	0.03	0.07	0.15**
9. Maltreatment	-	-	-	-0.06	0.13**	0.33**	-0.07	0.03	1	0.42**	0.17**	0.02
10. CMQ Total	0.25**	0.47**	0.39**	0.18**	0.25**	0.38**	0.14**	0.68	0.42**	1	0.09	0.01
11. PTGI Total	-0.02	0.13**	0.1	0.20**	0.11*	0.02	0.22**	0.15**	-	0.09	1	0
12. NUMTLE	-0.11*	-0.05	-0.07	-0.03	-0.05	-0.01	-0.02	0.07	0.02	0.01	0	1
Mean	36.52	147.65	14.99	3.91	11.78	13.35	3.54	3.96	0.52	13.98	44.22	2.09
SD	10.64	33.56	4.89	1.73	4	5.14	1.63	1.35	0.5	18.08	29.44	1.34

\*\* Correlation is significant at the 0.01 level (two-tailed)

\*Correlation is significant at the 0.05 level (two-tailed)

Table 2  
*Maltreatment Frequencies and Correlations (n = 260)*

Abuse Type	N	Percent	<i>r</i>			
			Physical	Sexual	Emotional	Neglect
<i>Physical</i>			1	0.30**	0.44**	0.37**
1 time	46					
2-5 times	51					
6-10 times	6					
More than 10	22					
Total	125	48.08				
<i>Sexual</i>			0.30**	1	0.21**	0.23**
1 time	29					
2-5 times	21					
6-10 times	8					
More than 10	11					
Total	69	26.54				
<i>Emotional</i>			0.44**	0.21**	1	0.45**
1 time	36					
2-5 times	58					
6-10 times	18					
More than 10	82					
Total	194	74.62				
<i>Neglect</i>			0.37**	0.23**	0.45**	1
1 time	18					
2-5 times	23					
6-10 times	10					
More than 10	12					
Total	63	24.23				

Table 3  
*Descriptive Statistics for the No Maltreatment Sample (n = 241)*

Variable	Mean	SD	Good Adjustment	Poor Adjustment
CAQ	38.83	9.56	N = 204	N = 37
PTGI	49.23	28.68		
SERI	157.01	30.1		
Prosocial Adults	12.32	3.53		
Self-Esteem	15.11	4.25		
Emotional Support	4.03	1.67		
Optimism	16.48	4.07		
Acceptance	3.91	1.4		
NUMTLE	2.07	1.17		
Positive Reframe	3.64	1.60		

Table 4  
*Descriptive Statistics for the Maltreatment Sample (n = 260)*

Variable	Mean	SD	Good Adjustment	Poor Adjustment
CAQ	34.39	11.15	N = 182	N = 78
PTGI	39.57	29.38		
SERI	138.99	34.28		
Prosocial Adults	11.27	4.32		
Self-Esteem	11.72	5.33		
Emotional Support	3.81	1.78		
Optimism	13.61	5.18		
Acceptance	4.00	1.32		
Positive Reframe	3.43	1.65		
NUMTLE	2.11	1.43		

Table 5  
Moderation Analyses

Moderator	Level	Conditional Effect	SE	t	p
Self-Esteem	High	-17.39	1.92	-1.36	0.17
	Low	-6.92			
Prosocial Adults	High	-18.07	0.61	-2.85	0.005**
	Low	-0.56			
Emotional Support	High	-15.65	1.40	-1.71	0.09
	Low	-6.08			
Acceptance	High	-17.39	1.92	-1.36	0.17
	Low	-6.92			
Positive Reframe	High	-10.95	1.55	-0.01	0.99
	Low	-10.87			
Optimism	High	-13.59	0.58	-0.57	0.57
	Low	-9.28			
SERI Total	High	-18.17	0.08	-2.92	0.004**
	Low	0.59			

\*\* Model is significant at the 0.01 level (two-tailed)

\*Model is significant at the 0.05 level (two-tailed)

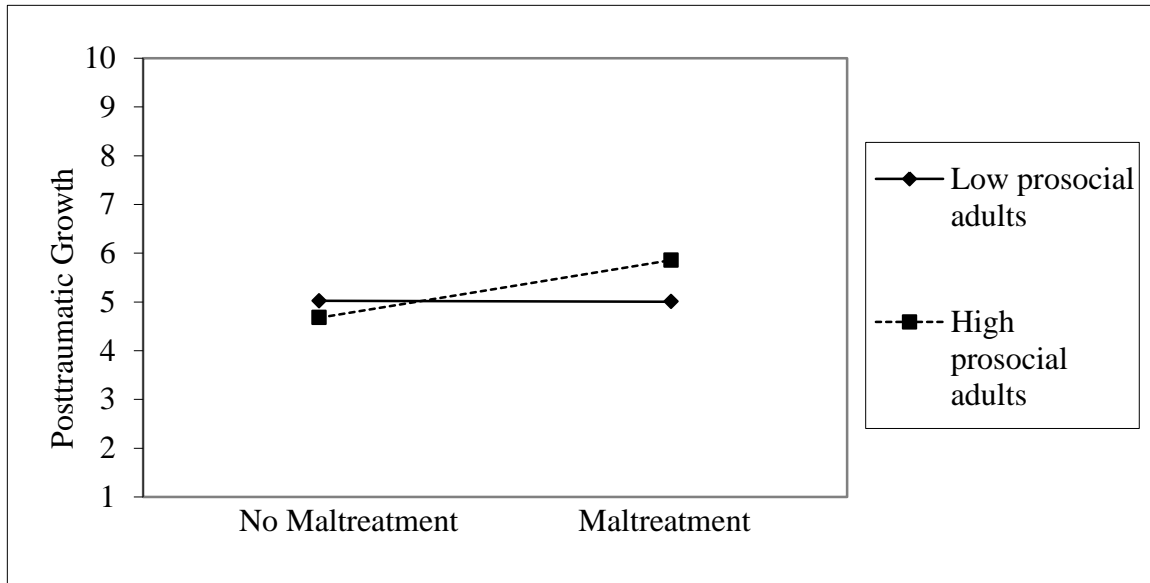


Figure 1  
*Prosocial adults moderate the relationship between childhood maltreatment and posttraumatic growth*

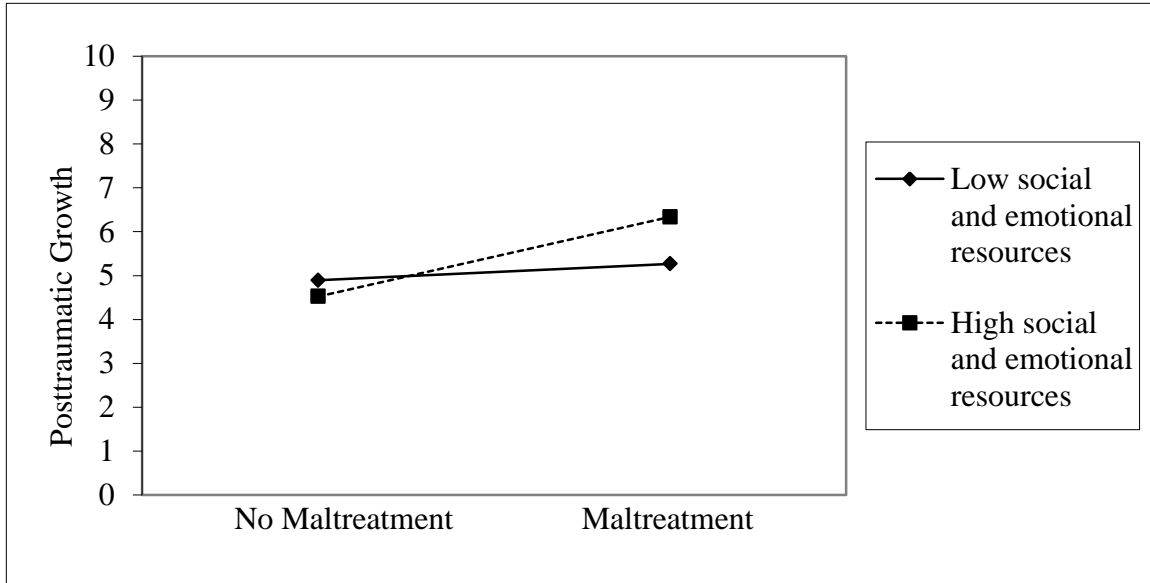


Figure 2  
*Social and emotional resources moderates the relationship between childhood maltreatment and posttraumatic growth*

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## APPENDIX A

*The Childhood Maltreatment Questionnaire for Abuse (CMQ-A)*

Listed below are statements that describe experiences with maltreatment that people may have had when they were growing up. Some of the experiences can be very common and others not as common. **Please indicate how often each of the following occurred while you were a child.** So that you can describe your experiences in an honest manner, your responses will be kept in absolute confidence. Please read each statement carefully, and then circle the number that best describes your experience.

**Response Options**

0-4 Likert scale: 0 = Never, 1 = Rarely, 2 = Sometimes, 3 = Often, 4 = Very Often.

<b>When I was a child:</b>	Never					Very Often				
1. I was hit hard enough by a parent/guardian to have to receive medical care.	0	1	2	3	4	0	1	2	3	4
2. I was touched in a sexual way by a person older than me.	0	1	2	3	4	0	1	2	3	4
3. I felt cared for by my parents/guardians.*	0	1	2	3	4	0	1	2	3	4
4. One of my caregivers said degrading things to me.	0	1	2	3	4	0	1	2	3	4
5. I was physically hurt by a parent/guardian.	0	1	2	3	4	0	1	2	3	4
6. I felt safe with all of my caregivers.*	0	1	2	3	4	0	1	2	3	4
7. I was emotionally maltreated by a parent/guardian.	0	1	2	3	4	0	1	2	3	4
8. I was hit hard enough by a parent/guardian to leave marks on my skin.	0	1	2	3	4	0	1	2	3	4
9. I was sexually molested by a person older than me.	0	1	2	3	4	0	1	2	3	4
10. I could trust that none of my caregivers would intentionally hurt me.*	0	1	2	3	4	0	1	2	3	4
11. I was sexually abused as a child.	0	1	2	3	4	0	1	2	3	4
12. A caregiver said things that indicated they cared very little for my wellbeing.	0	1	2	3	4	0	1	2	3	4
13. One of my caregivers physically abused me.	0	1	2	3	4	0	1	2	3	4

14. A person older than me made me show them my genitals for their sexual gratification.	0	1	2	3	4
15. I felt supported by all of my caregivers.*	0	1	2	3	4
16. A parent/guardian emotionally abused me.	0	1	2	3	4
17. I experienced non-accidental physical injury from a parent/guardian.	0	1	2	3	4
18. I was coerced into unwanted sexual behavior.	0	1	2	3	4
19. All of my caregivers were “there for me” when I was growing up.*	0	1	2	3	4

Factors and items are listed below:

Physical Abuse: 1, 5, 8, 13, 17

Sexual Abuse: 2, 9, 11, 14, 18

Emotional Abuse: 4, 7, 12, 16

Love: 3, 6, 10, 15, 19

\* indicates reverse-scoring

*The Childhood Maltreatment Questionnaire for Neglect (CMQ-N)*

Listed below are statements that describe experiences with maltreatment that people may have had when they were growing up. Some of the experiences can be very common and others not as common. **Please indicate how often each of the following occurred while you were a child.** So that you can describe your experiences in an honest manner, your responses will be kept in absolute confidence. Please read each statement carefully, and then circle the number that best describes your experience.

**Response Options**

0-4 Likert scale: 0 = Never, 1= Rarely, 2 = Sometimes, 3 = Often, 4 = Very Often.

<b>When I was a child:</b>	Never					Very Often				
1. I was left alone and unsupervised for significant periods of time as a young child.	0	1	2	3	4	0	1	2	3	4
2. One of my caregivers did not bathe me, even when I was clearly dirty.	0	1	2	3	4	0	1	2	3	4
3. One of my caregivers failed to provide adequate emotional care for me.	0	1	2	3	4	0	1	2	3	4
4. I felt cared for by my parents/guardians.*	0	1	2	3	4	0	1	2	3	4
5. My physical care was neglected by a parent/guardian.	0	1	2	3	4	0	1	2	3	4
6. A parent/guardian refused or failed to provide the affection I needed.	0	1	2	3	4	0	1	2	3	4
7. I felt safe with all of my caregivers. *	0	1	2	3	4	0	1	2	3	4
8. My emotional needs were not met by a parent/guardian.	0	1	2	3	4	0	1	2	3	4
9. I had to fend for myself because there was no one around to supervise me.	0	1	2	3	4	0	1	2	3	4
10. I went hungry because a parent/guardian did not feed me.	0	1	2	3	4	0	1	2	3	4
11. I felt supported by all of my caregivers. *	0	1	2	3	4	0	1	2	3	4
12. A parent/guardian left me by myself even though there should have been someone watching me.	0	1	2	3	4	0	1	2	3	4

13. All of my caregivers were “there for me” when I was growing up. *	0	1	2	3	4
14. I was emotionally neglected by a parent/guardian.	0	1	2	3	4
15. A caregiver did not dress me appropriately for the weather.	0	1	2	3	4
16. I could trust that none of my caregivers would intentionally hurt me. *	0	1	2	3	4

For researchers, factor and items are listed below:

- Physical Neglect: 2, 5, 10, 15
- Emotional Neglect: 3, 6, 8, 14
- Supervision Neglect: 1, 9, 12
- Love: 4, 7, 11, 13, 16
- \* indicates reverse-scoring

## APPENDIX B



## History of Maltreatment Survey

1) Physical abuse can be defined as "nonaccidental physical injury to the child and can include striking, kicking, burning, or biting the child, or any action that results in a physical impairment of the child."

A. Based on this definition, how many times from the ages of 0-18 have you experienced physical abuse?

0 Times   1 Time   2-5 Times   6-10 Times   More than 10 times

B. If the answer to A. was one time or more, over what period of time did this abuse last?

Less than 1 Month   1-6 Months   6-12 Months   1-2 Years   Over 2 Years

C. If the answer to A. was one time or more, how distressing were these experiences for you? (0 – not distressing, 4 = very distressing)

0   1   2   3   4

2) Sexual abuse can be defined as "the employment, use, persuasion, inducement, enticement or coercion of any child to engage in, or assist any other person to engage in, any sexually explicit conduct or simulation of such conduct for the purpose of producing a visual depiction of such conduct; or the rape, molestation, prostitution or other form of sexual exploitation of children or incest with children."

A. Based on this definition, how many times from the ages of 0-18 have you experienced sexual abuse?

0 Times   1 Time   2-5 Times   6-10 Times   More than 10 times

B. If the answer to A. was one time or more, over what period of time did this abuse last?

Less than 1 Month   1-6 Months   6-12 Months   1-2 Years   Over 2 Years

C. If the answer to A. was one time or more, how distressing were these experiences for you? (0 – not distressing, 4 = very distressing)

0   1   2   3   4

3) Emotional Abuse can be defined as a "pattern of behavior that impairs a child's emotional development or sense of self-worth. This may include constant criticism, threats, or rejection as well as withholding love, support, or guidance. "

A. Based on this definition, how many times from the ages of 0-18 have you experienced emotional abuse?

0 Times 1 Time 2-5 Times 6-10 Times More than 10 times

B. If the answer to A. was one time or more, over what period of time did this abuse last?

Less than 1 Month 1-6 Months 6-12 Months 1-2 Years Over 2 Years

C. If the answer to A. was one time or more, how distressing were these experiences for you? (0 – not distressing, 4 = very distressing)

0 1 2 3 4

4) Neglect can be defined as "the failure of a parent, guardian, or other caregiver to provide for a child's basic needs. Neglect can be physical (e.g., failure to provide necessary food or shelter), medical (e.g., failure to provide necessary medical or mental health treatment), educational (e.g., failure to educate a child or attend to special education needs), or emotional (e.g., failure to provide psychological care). "

A. Based on this definition, how many times from the ages of 0-18 have you experienced neglect?

0 Times 1 Time 2-5 Times 6-10 Times More than 10 times

B. If the answer to A. was one time or more, over what period of time did this abuse last?

Less than 1 Month 1-6 Months 6-12 Months 1-2 Years Over 2 Years

C. If the answer to A. was one time or more, how distressing were these experiences for you? (0 – not distressing, 4 = very distressing)

0 1 2 3 4

## APPENDIX C

## Trauma History Survey

Have you ever experienced any of the following events? (Check all that apply)

**1) Death of a close loved one \_\_\_\_\_**

- If yes, rate the severity of this event in terms of personal distress (circle number).

**0** – *Not at all*      **1** – *Very small*      **2** – *Small*      **3** – *Moderate*      **4** – *Extreme*

- If yes, how many times have you experienced this? \_\_\_\_\_
- When was your most recent experience of this event (month/year)? \_\_\_\_\_

**2) Very serious medical problem \_\_\_\_\_**

- If yes, rate the severity of this event in terms of levels of distress (circle number).

**0** – *Not at all*      **1** – *Very small*      **2** – *Small*      **3** – *Moderate*      **4** – *Extreme*

- If yes, how many times have you experienced this? \_\_\_\_\_
- When was the most recent experience of this event (month/year)? \_\_\_\_\_

**3) Close friend, significant other, or family member experienced a serious medical condition \_\_\_\_\_**

- If yes, rate the severity of this event in terms of levels of distress (circle number).

**0** – *Not at all*      **1** – *Very small*      **2** – *Small*      **3** – *Moderate*      **4** – *Extreme*

- If yes, how many times have you experienced this? \_\_\_\_\_
- When was your most recent experience of this event (month/year)? \_\_\_\_\_

**4) Accident that led to serious injury to yourself or someone close to you \_\_\_\_\_**

- If yes, rate the severity of this event in terms of levels of distress (circle number).

**0** – *Not at all*      **1** – *Very small*      **2** – *Small*      **3** – *Moderate*      **4** – *Extreme*

- If yes, how many times have you experienced this? \_\_\_\_\_
- When was your most recent experience of this event (month/year)? \_\_\_\_\_

**5) Place of residence being damaged by fire or other natural causes \_\_\_\_\_**

- If yes, rate the severity of this event in terms of levels of distress (circle number).  
**0** – *Not at all*      **1** – *Very small*      **2** – *Small*      **3** – *Moderate*      **4** - *Extreme*
- If yes, how many times have you experienced this? \_\_\_\_\_
- When was your most recent experience of this event (month/year)? \_\_\_\_\_

**6) Endured a divorce** \_\_\_\_\_

- If yes, rate the severity of this event in terms of levels of distress (circle number).  
**0** – *Not at all*      **1** – *Very small*      **2** – *Small*      **3** – *Moderate*      **4** - *Extreme*
- If yes, how many times have you experienced this? \_\_\_\_\_
- When was your most recent experience of this event (month/year)? \_\_\_\_\_

**7) Physically assaulted** \_\_\_\_\_

- If yes, rate the severity of this event in terms of levels of distress (circle number).  
**0** – *Not at all*      **1** – *Very small*      **2** – *Small*      **3** – *Moderate*      **4** - *Extreme*
- If yes, how many times have you experienced this? \_\_\_\_\_
- When was your most recent experience of this event (month/year)? \_\_\_\_\_

**8) Sexually assaulted** \_\_\_\_\_

- If yes, rate the severity of this event in terms of levels of distress (circle number).  
**0** – *Not at all*      **1** – *Very small*      **2** – *Small*      **3** – *Moderate*      **4** - *Extreme*
- If yes, how many times have you experienced this? \_\_\_\_\_
- When was your most recent experience of this event (month/year)? \_\_\_\_\_

**9) Victim of a crime such as robbery or mugging** \_\_\_\_\_

- If yes, rate the severity of this event in terms of levels of distress (circle number).  
**0** – *Not at all*      **1** – *Very small*      **2** – *Small*      **3** – *Moderate*      **4** - *Extreme*
- If yes, how many times have you experienced this? \_\_\_\_\_

- When was your most recent experience of this event (month/year)? \_\_\_\_\_

**10) Being stalked** \_\_\_\_\_

- If yes, rate the severity of this event in terms of levels of distress (circle number).

**0** – *Not at all*      **1** – *Very small*      **2** – *Small*      **3** – *Moderate*      **4** - *Extreme*

- If yes, how many times have you experienced this? \_\_\_\_\_

- When was your most recent experience of this event (month/year)? \_\_\_\_\_

## APPENDIX D

## Posttraumatic Growth Inventory

Before answering the following questions, focus on one traumatic or life altering event that has occurred in your life.

Please indicate the general experience you are thinking of:

- Loss of a loved one
- Chronic or acute illness
- Violent or abusive crime
- Accident or injury
- Disaster
- Job loss
- Financial hardship
- Career or location change/move
- Change in family responsibility
- Divorce
- Retirement
- Combat
- Other

Time lapsed since event occurred:

- 6 months - 1 year
- 1 - 2 years
- 2 - 5 years
- More than 5 years

Indicate for the statement below the degree to which the change reflected in the question is true in your life as a result of your crisis, 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.

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. I know better that I can handle difficulties.
11. I am able to do better things with my life.
12. I am better able to accept the way things work out.
13. I can better appreciate each day.
14. New opportunities are available which wouldn't have been otherwise.
15. I have more compassion for others.
16. I put more effort into my relationships.
17. I am more likely to try to change things which need changing.
18. I have a stronger religious faith.
19. I discovered that I'm stronger than I thought I was.
20. I learned a great deal about how wonderful people are.
21. I better accept needing others.

## Posttraumatic Growth Inventory

Please answer the following questions related to the instance(s) of maltreatment reported earlier.

Time lapsed since event occurred:

- 6 months - 1 year
- 1 - 2 years
- 2 - 5 years
- More than 5 years

Indicate for the statement below the degree to which the change reflected in the question is true in your life as a result of your crisis, 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.

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.
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16. I put more effort into my relationships.
17. I am more likely to try to change things which need changing.
18. I have a stronger religious faith.
19. I discovered that I'm stronger than I thought I was.
20. I learned a great deal about how wonderful people are.
21. I better accept needing others.

## APPENDIX E

## College Adjustment Questionnaire (CAQ)

Listed below are some statements that describe how college students might be feeling about their experience with college. **Please use the rating scale below to indicate how accurately each statement describes you *at this point in time*.** Please read each statement carefully, and then circle the number that corresponds to how accurately the statement describes you.

### Response Options

- 1: Very Inaccurate
- 2: Moderately Inaccurate
- 3: Neither Inaccurate nor Accurate
- 4: Moderately Accurate
- 5: Very Accurate

### Right now:

	Very Inaccurate				Very Accurate
1. I am succeeding academically	1	2	3	4	5
2. I don't have as much of a social life as I would like	1	2	3	4	5
3. I feel that I am doing well emotionally since coming to college	1	2	3	4	5
4. I am happy with my social life at college	1	2	3	4	5
5. I am doing well in my classes	1	2	3	4	5
6. I am happy with how things have been going in college	1	2	3	4	5
7. I am happy with the grades I am earning in my classes	1	2	3	4	5
8. I feel that I am emotionally falling apart in college	1	2	3	4	5
9. I have had a hard time making friends since coming to college	1	2	3	4	5
10. I am as socially engaged as I would like to be	1	2	3	4	5
11. I have felt the need to seek emotional counseling since coming to college	1	2	3	4	5
12. I am meeting my academic goals	1	2	3	4	5
13. I have performed poorly in my classes since starting college	1	2	3	4	5
14. I am satisfied with my social relationships	1	2	3	4	5

## APPENDIX F

## SERI

The following statements describe things that may or may not have been true of you while you were growing up. **Please use the rating scale below to indicate how accurately each statement describes your childhood.** Please read each statement carefully, and then circle the number that corresponds to how accurately the statement describes you.

### Response Options

- 1: Very Inaccurate
- 2: Moderately Inaccurate
- 3: Neither Inaccurate nor Accurate
- 4: Moderately Accurate
- 5: Very Accurate

<b>When I was growing up:</b>	Very Inaccurate			Very Accurate	
1. I was intelligent	1	2	3	4	5
2. I received warm parenting	1	2	3	4	5
3. My school met students' academic needs	1	2	3	4	5
4. I had strong self-confidence	1	2	3	4	5
5. I had a talent (i.e., talented in sports, music, drama, academics, etc.)	1	2	3	4	5
6. I had positive connections to my extended family (e.g., grandparents, aunts, uncles, etc.)	1	2	3	4	5
7. I had a strong sense of faith or spirituality	1	2	3	4	5
8. I felt connected to a parent/guardian	1	2	3	4	5
9. My family did not have to worry excessively about money	1	2	3	4	5
10. I was smart	1	2	3	4	5
11. My parents were loving	1	2	3	4	5
12. I had an adult mentor other than my parents	1	2	3	4	5
13. I received a good education	1	2	3	4	5
14. I felt positively about myself	1	2	3	4	5
15. I was skilled in at least one activity	1	2	3	4	5
16. My faith or spirituality was important to me	1	2	3	4	5
17. My family was financially comfortable	1	2	3	4	5
18. I was bright	1	2	3	4	5

19. I was emotionally close to my parents	1	2	3	4	5
20. An adult outside of my family motivated me to succeed	1	2	3	4	5
21. My school had skilled teachers	1	2	3	4	5
22. I had high self-esteem	1	2	3	4	5
23. My family had access to adequate health care	1	2	3	4	5
24. Others noticed my special ability in an activity (e.g., sports, music, drama, academics, etc.)	1	2	3	4	5
25. I could depend on family members other than my parents and siblings	1	2	3	4	5
26. Religion/spirituality was a central part of my life	1	2	3	4	5
27. I had a parent/guardian I could rely on	1	2	3	4	5
28. My family was able to afford the things we needed	1	2	3	4	5
29. I was involved in groups that served others	1	2	3	4	5
30. My parents were emotionally available	1	2	3	4	5
31. There was an adult outside my family who cared about me	1	2	3	4	5
32. I believed in myself	1	2	3	4	5
33. My family and I had access to good health services	1	2	3	4	5
34. I had a skill that I was proud of	1	2	3	4	5
35. I felt that my extended family was there for me	1	2	3	4	5
36. I attended religious services	1	2	3	4	5
37. I was connected to my family	1	2	3	4	5
38. I was involved in a group that did good things for the community	1	2	3	4	5
39. I did well academically	1	2	3	4	5
40. My parents cared about me	1	2	3	4	5
41. Someone other than family made sure that I was okay	1	2	3	4	5
42. I went to a good school	1	2	3	4	5
43. I viewed myself as a capable individual	1	2	3	4	5
44. I felt that there was something special I could do (i.e., I was talented at something)	1	2	3	4	5
45. My extended family was there for me when my parents couldn't be	1	2	3	4	5
46. I believed in a higher power or spiritual energy	1	2	3	4	5

47. My parent(s) made enough money at their job for my family to be able to live comfortably	1	2	3	4	5
48. I was involved with a group or organization that focused on helping others	1	2	3	4	5
49. I was seen as a “talented kid”	1	2	3	4	5
50. I took comfort in my faith or spirituality	1	2	3	4	5



## APPENDIX G

## Brief COPE

These items deal with ways you've been coping with the stress in your life since you found out you were going to have to have this operation. There are many ways to try to deal with problems. These items ask what you've been doing to cope with this one. Obviously, different people deal with things in different ways, but I'm interested in how you've tried to deal with it. Each item says something about a particular way of coping. I want to know to what extent you've been doing what the item says. How much or how frequently. Don't answer on the basis of whether it seems to be working or not—just whether or not you're doing it. Use these response choices. Try to rate each item separately in your mind from the others. Make your answers as true FOR YOU as you can.

1 = I haven't been doing this at all

2 = I've been doing this a little bit

3 = I've been doing this a medium amount

4 = I've been doing this a lot

1. I've been turning to work or other activities to take my mind off things.
2. I've been concentrating my efforts on doing something about the situation I'm in.
3. I've been saying to myself "this isn't real."
4. I've been using alcohol or other drugs to make myself feel better.
5. I've been getting emotional support from others.
6. I've been giving up trying to deal with it.
7. I've been taking action to try to make the situation better.
8. I've been refusing to believe that it has happened.
9. I've been saying things to let my unpleasant feelings escape.
10. I've been getting help and advice from other people.
11. I've been using alcohol or other drugs to help me get through it.
12. I've been trying to see it in a different light, to make it seem more positive.
13. I've been criticizing myself.
14. I've been trying to come up with a strategy about what to do.
15. I've been getting comfort and understanding from someone.
16. I've been giving up the attempt to cope.
17. I've been looking for something good in what is happening.
18. I've been making jokes about it.
19. I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.
20. I've been accepting the reality of the fact that it has happened.
21. I've been expressing my negative feelings.
22. I've been trying to find comfort in my religion or spiritual beliefs.
23. I've been trying to get advice or help from other people about what to do.
24. I've been learning to live with it.
25. I've been thinking hard about what steps to take.
26. I've been blaming myself for things that happened.
27. I've been praying or meditating.
28. I've been making fun of the situation.

## APPENDIX H

### Life Orientation Test – Revised (LOT-R)

Please be as honest and accurate as you can throughout. Try not to let your response to one statement influence your responses to other statements. There are no "correct" or "incorrect" answers. Answer according to your own feelings, rather than how you think "most people" would answer.

A = I agree a lot

B = I agree a little

C = I neither agree nor disagree

D = I DISagree a little

E = I DISagree a lot

1. In uncertain times, I usually expect the best.
2. It's easy for me to relax.
3. If something can go wrong for me, it will.
4. I'm always optimistic about my future.
5. I enjoy my friends a lot.
6. It's important for me to keep busy.
7. I hardly ever expect things to go my way.
8. I don't get upset too easily.
9. I rarely count on good things happening to me.
10. Overall, I expect more good things to happen to me than bad.

## APPENDIX I

## Demographic Questionnaire

- 1) What is your age? \_\_\_\_\_ years old
- 2) What is your gender? (please choose one)
  - Male
  - Female
  - Transgender
- 3) What is your year in school?
  - Freshman
  - Sophomore
  - Junior
  - Senior
  - Fifth year or above
- 4) What race/ethnicity do you identify with the most? (please choose one)
  - African American/Black
  - Alaska Native
  - American Indian/Native American
  - Asian American
  - Caucasian/White
  - Hawaiian/Pacific Islander
  - Latino or Hispanic
  - Middle Eastern American
  - Other (Please specify: \_\_\_\_\_)
- 5) What is your sexual orientation? (please choose one)
  - Heterosexual (sexually interested in the opposite sex)
  - Homosexual (sexually interested in the same sex)
  - Bisexual (sexually interested in both the opposite and same sex)
  - Other (Please specify: \_\_\_\_\_)

## APPENDIX J

Consent to Participate in a Research Study  
Colorado State University

**TITLE OF STUDY**

Stressful Life Events

**PRINCIPAL INVESTIGATOR**

Lee A. Rosen, Ph.D., Psychology Department  
207 Behavioral Sciences Building, (970) 491-5925  
[Lee.Rosen@colostate.edu](mailto:Lee.Rosen@colostate.edu)

**CO-PRINCIPAL INVESTIGATORS**

Danielle Mohr, M.S.  
Doctoral Candidate, Psychology Department  
Clark C-52A, (970) 480-7592  
[danielle.mohr@colostate.edu](mailto:danielle.mohr@colostate.edu)

Stacey Park, M.S.  
Doctoral Candidate, Psychology Department  
Clark C31, 970-599-1587  
[stacey.park@colostate.edu](mailto:stacey.park@colostate.edu)

**WHY AM I BEING INVITED TO TAKE PART IN THIS RESEARCH?**

You are being asked to participate in this study because you are currently enrolled at Colorado State University and we are interested in learning more about how individuals are affected by stressful life experiences.

**WHO IS DOING THE STUDY?**

The study is being conducted by doctoral students, Danielle Mohr and Stacey Park, under the guidance of their advisor, Lee Rosen, Ph.D.

**WHAT IS THE PURPOSE OF THIS STUDY?**

The purpose of the study is to better understand changes that sometimes take place after experiencing negative life events. This study is also concerned with looking at what factors may help some individuals experience changes.

**WHERE IS THE STUDY GOING TO TAKE PLACE AND HOW LONG WILL IT LAST?**

You will be asked to complete the study on-line at a time and place that is convenient for you. Participation will take approximately a half an hour of your time.

**WHAT WILL I BE ASKED TO DO?**

You will be asked to complete a few questionnaires regarding your experience with negative life events, changes that occurred as a result of these events, life enhancing and life threatening behaviors, adjustment to college, childhood maltreatment (sexual, physical, and emotional



abuse), anxiety, depression, and protective factors. The surveys include some questions that may seem sensitive or personal. You are free to skip any question or item for any reason.

**ARE THERE REASONS WHY I SHOULD NOT TAKE PART IN THIS STUDY?**

Participation requires that you are at least 18 years of age and currently enrolled in college courses.

**WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?**

Due to the sensitive nature of some of the questionnaires, there is a slight risk of emotional distress associated with this study. If any of the questions cause you emotional distress, please feel free to contact Lauren Millard, M.S. at the CSU Health Network-Counseling Services at (970) 491-3520 or call (970) 491-6053 to speak to a CSU-Health Network counselor.

**ARE THERE ANY BENEFITS FROM TAKING PART IN THIS STUDY?**

There are no direct benefits from your participation in this study, although it will help us to better understand how individual's deal with negative life events.

**DO I HAVE TO TAKE PART IN THE STUDY?**

Your participation in this research is voluntary. If you decide to participate in the study, you may withdraw your consent and stop participating at any time without penalty or loss of benefits to which you are otherwise entitled.

**WHO WILL SEE THE INFORMATION THAT I GIVE?**

This study is anonymous. We are not obtaining your name or other identifiable data from you, so no one, not even members of the research team, will be able to identify you or your data. Your information will be combined with information from other people taking part in the study. When we write about the study to share it with other researchers, we will write about the combined information we have gathered. We may publish the results of this study. You will not be identified in any of these written materials.

**WILL I RECEIVE ANY COMPENSATION FOR TAKING PART IN THIS STUDY?**

If you are taking this survey to fulfill your PSY 100 or PSY 210 requirement, you will receive a 1/2 experimental credit for your participation today. If you are taking this survey from an upper division class, you may receive two points of extra credit.

**WHAT HAPPENS IF I AM INJURED BECAUSE OF THE RESEARCH?**

The Colorado Governmental Immunity Act determines and may limit Colorado State University's legal responsibility if an injury happens because of this study. Claims against the University must be filed within 180 days of the injury.

**WHAT IF I HAVE QUESTIONS?**

Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions about the study, you can contact the investigator, Dr. Lee Rosén at 970-491-5925 or Danielle Mohr, at [danielle.mohr@colostate.edu](mailto:danielle.mohr@colostate.edu) or at 970-480-7592 or Stacey Park at [Stacey.park@colostate.edu](mailto:Stacey.park@colostate.edu) or at 970-599-1587. If you have any questions about your rights as a volunteer in this research,

contact Janell Barker, Human Research Administrator at 970-491-1655. You are free to print out a copy of this consent form to take with you for your records.

If you have read and understood the above information and consent to participating in the study, please click the next button below to indicate your consent.

**Please make sure you have a half an hour to complete these surveys since you will not be able to stop and come back to the surveys at a later time.**

## APPENDIX K

Participant Debriefing Form:  
Stressful Life Events

***Objective of the Research***

This study was concerned with the interaction between early experiences of childhood abuse and neglect, protective factors, and positive benefits that are sometimes experienced as a result of these events (posttraumatic growth). In other words, the researchers are hoping to better understand what protective factors may help individuals who have been abused and neglected experience posttraumatic growth. We also hope to examine the relationship between posttraumatic growth and psychological adjustment and functioning in individuals who may have experienced abuse or neglect. Relevant sections of your PSY 100 textbook include pages 608-609, 556-557, and 160. A second goal of this study was to validate a measure of childhood abuse and neglect and college adjustment.

***General Information***

Your participation is greatly appreciated and will help psychologists better understand the experience of posttraumatic growth in individuals who have been abused and neglected. It will also help psychologists better understand the interaction between abuse and neglect, protective factors, and posttraumatic growth. Lastly, this study will result in a validated measure of childhood abuse and neglect and college adjustment. If you would like to receive a report of this research when it is completed or a summary of the findings, please contact Danielle Mohr, M.S. at [danielle.mohr@colostate.edu](mailto:danielle.mohr@colostate.edu) or Lee A. Rosén, Ph.D. at [Lee.Rosen@colostate.edu](mailto:Lee.Rosen@colostate.edu).

***Safety***

If your participation in this study has contributed to any emotional distress or significant discomfort, you may contact the CSU Counseling Center at 970-491-6053. In case of emergency or crisis, on-call counselors are also available 24/7 and can be reached at 970-491-7111. For a nationwide crisis hotline, please call 1-800-273-8255. Additional community resources include Touchstone Health Partners, who can be reached at 970-494-4300 and the Psychological Services Center on the CSU campus, who can be reached at 970-491-5212. Finally, please contact the research investigators directly for assistance and additional debriefing if you experience any distress as a result of this study. Danielle Mohr can be reached at 970-480-7592 or [danielle.mohr@colostate.edu](mailto:danielle.mohr@colostate.edu) and Stacey Park can be reached at 970-599-1587 or [stacey.park@colostate.edu](mailto:stacey.park@colostate.edu). To contact Lee Rosén, call 970-491-4925 or send an email to [Lee.Rosen@Colostate.edu](mailto:Lee.Rosen@Colostate.edu). If you have any questions about your rights as a volunteer in this research, contact Janell Barker, Human Research Administrator, at 970-491-1655.

***Confidentiality***

All information collected in today's study will be confidential and there will be no identifying information connected to your responses. This research will be focused on examining general patterns when the data are aggregated together.

**Please do not disclose research procedures and hypotheses to anyone who might participate in this study between now and the end of data collection, as this could affect the results of the study. Thank you for your participation!**