PERCEPTIONS OF CORRECTIVE INTERPERSONAL EXPERIENCES
IN PROMOTING POST-TRAUMATIC GROWTH
IN A SAMPLE OF COLLEGE STUDENTS

A Dissertation in Counselor Education
by
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ABSTRACT

The mental health profession has traditionally focused research and clinical practice on the deleterious effects of adversity to the exclusion of positive effects. An essential shift in trauma literature has recently occurred, however, as researchers have begun exploring the phenomenon of transformative growth as a post-trauma outcome. Despite this movement, minimal research exists on this positive change, and studies have yet to adequately establish the factors that contribute most to the development of post-traumatic growth. This quantitative dissertation begins with a broad overview of the extant research on post-trauma outcomes, drawing upon direction from current empirical literature on traumatic stress, interpersonal bonding, and resilience in order to isolate and address the gaps in the research. Specifically, the purpose of the study was to examine the relation between trauma exposure and various interpersonal bonding experiences within the context parental, romantic, and platonic relationships on the development of post-traumatic growth qualities in a sample of undergraduate college students. These qualities included Relating to Others, New Possibilities, Personal Strengths, Spiritual Change, and Appreciation for Life. The final sample included in the study consisted of 202 undergraduate students enrolled at a Mid-Atlantic institution of higher education. Hierarchical multiple regression analyses were employed in order to explore each research question. Major findings indicated that close platonic relationships had moderate, negative effects on the development of each outcome variable (Relating to Others, New Possibilities, Personal Strengths, Spiritual Change, and Appreciation for Life), indicating that close and dependable friendships served as the most significant attachment-oriented predictor of positive change in students with trauma history. Additionally, repeated traumatic experiences demonstrated a significant positive relation to the development of several post-traumatic growth
domains, including Relating to Others, Personal Strengths, and Spiritual Change. A discussion and implications of these and other findings are presented at the close of this dissertation. Finally, recommendations for future research are offered to encourage the continued trajectory toward a greater understanding of strength-based considerations for post-trauma outcomes.
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In loving memory of those who lost the struggle against their personal traumas:

My mother, Lisa Heatwole

My friend, Elise Freeman

Their loss ended an era of my life. Advocating began a new one.
CHAPTER ONE: INTRODUCTION

This dissertation includes five chapters. The first chapter presents the background of the topic, statement of the problem, purpose of the study, and research questions. The significance of the study, limitations and delimitations, and definition of terms are also addressed. The second chapter offers a review of the literature on issues of trauma, including multi-level considerations of post-traumatic growth and interpersonal factors that contribute to positive change. The proposed research model and research questions are also presented. Chapter three presents the methodology of the study, incorporating the research design, participants, instruments, variables, procedures, and data analyses. Chapter four describes the research results and outlines the univariate analyses and bivariate analyses, followed by the results of hierarchical multiple regression analyses. Lastly, chapter five offers the major findings of this study. The strengths and implications of the findings, limitations of the study, and recommendations for future research, are also presented.

Background

Within every suffering human being exists a potential for meaning-making and positive transformation. The innate longing for a fulfilled and meaningful life is a common experience, especially for those struggling with personal hardships and traumas. The ambition for humankind is to answer this calling by seeking positive psychological growth and resilience-oriented change. Researchers in the mental health discipline entered this area of study relatively late compared to some of the great thinkers and philosophers 2500 years ago.

The ancient writings of Chinese philosopher, Confucius, explain the importance of compassion and reverence for humanity. Interpersonal connection and altruism is central to a meaningful life, as it promotes healing within the self and enhances the welfare of others. The ancient tradition of Buddhism similarly encourages the cultivation of compassion for others and
detachment from the things that cause suffering in the individual. According to the Noble Truths, life is characterized by pain and sorrow (Wetzel et al., 2007). The pathway to a state of positive meaning-making and transformation occurs through the recognition of one’s suffering, allowing the self to grow in empathy and understanding of the suffering experienced by others.

Greek philosopher, Aristotle, reasoned that the mental and emotional tendencies experienced by each individual serve a purpose. The degree, timing, context, and direction of these tendencies are important to consider, as extreme reactions can have negative consequences and cause further harm to the self, while a more centered and reflective response promotes the cognitive and affective wellbeing necessary to appreciate life. The concept of the golden mean is the state of balance, presence, and harmony with the self in between the extremes of excess and deficiency (Bok, 2011). When this sense of balance is achieved and maintained as a result of distressing experiences, one can pursue a life of meaning, appreciation, and happiness. Aristotle believed that this state was the goal for the totality of one’s life, which should be strived for not as a passing experience, but as a final state of being after a willful and determined journey through difficult situations.

An overarching theme linking each of these ancient traditions and philosophies is the idea that human beings have the innate ability to overcome suffering through meaningful connection with others. Human connection is the outlet needed for meaning-making after a distressing experience. It is through this interpersonal channel that those who suffer can attain a higher level of transformative growth.

My belief in the human potential and people’s capacity for positive transformation shaped my conceptualization of those with a history of trauma exposure. My professional endeavor became researching and promoting the connection between traumatic stress,
interpersonal engagement, and transformative growth. This aspiration was validated at the 2014 Mind and Life Symposium on Contemplative Studies during a keynote presentation by His Holiness, the 14th Dalai Lama, and a panel of scientific scholars and academics from top universities. One of the panelist expressed a limitation currently faced by the scientific research community: There is a lack of empirical understanding of what defines happiness and wellbeing, and there is no effective measure to assess for these positive states in the human experience. His Holiness advised that to initiate an empirical investigation on the science of happiness, researchers must first seek out those who suffer most and still experience resilience. It is those that transcend their suffering to attain a higher level of positive functioning that serves their healing and others around them who can inform the direction of future research and provide new insights into the meaning of positive transformation.

The current study responds to this call for research by investigating the relation between interpersonal bonding and traumatic exposure on positive transformative change. Utilizing various measures, the researcher aimed to link variations in adult attachment styles experienced within different relationships to the development of post-traumatic growth in a sample of college-age students with reported exposure to adverse experiences.

**Statement of the Problem**

College is a time of transitioning and adjustment for most young adult students. According to Arnett (2000), emerging adulthood is characterized by self-exploration and identity development. Young adult development in college is fostered by new experiences and relationships that contribute to cognitive growth, refining of value systems and worldviews, and the developing a sense of self and identity (Iarussi, 2013). It is apparent why this developmental stage is particularly vulnerable to adverse life experiences, and why evidence stress the
importance of forming and maintaining quality relationships in order to promote a sense of connection and belonging (Hassan, 2008).

Experiencing adversity in the midst of transitioning to a new social environment can add to the concern of developing traumatic stress or poor coping mechanisms. Of the more informative studies, O’Connor and Alklit (2008) conducted a cross-sectional investigation to examine the association between post-traumatic stress disorder (PTSD) and young adult attachment in a student population. Results indicated that after experiencing a trauma, those with insecure attachment styles were found to have a greater number of PTSD-related symptoms, presence of somatization, poor emotional coping, negative affectivity, and limited social support. This finding is indicative of a nation-wide concern on university campuses regarding college students’ ability to overcome adversity without an established social support system or sense of community. There is limited research in how young adults overcome and cultivate positive transformation after an adverse experience or trauma, especially as it relates to variations in their adult relationship. It is the hope for this study that findings will inform the counseling profession on the interpersonal factors that contribute to resiliency and transformative growth so that more advocacy, education, resources, and collaborations can be implemented on university campuses, and inspire the direction of future studies.

**Purpose of the Study**

Healthy adaptation with stress can either lead to a homeostatic state characterized by recovering and returning to baseline, or a positive transformational state and thriving into a higher level of functioning (Tedeschi & Calhoun, 2004; Zoellner, & Maercker, 2006). For the purpose of this study, focus was given specifically to the adaptive factors and outcomes that contribute to the latter experience, identified as post-traumatic growth. The objective of the current research was to determine the relation between current impact of adverse experiences,
number of reported traumatic events, and perceptions of relationships with various interpersonal target figures on the development of features related to post-traumatic growth. Implications of the study include evidence that the deleterious effects of traumatic stress may be remedied by corrective experiences within certain healthy relationships in college-age young adults, supporting the philosophy that human connection fosters the context needed for transformative change.

**Study Variables**

Quantitative assessment instruments were utilized to measure and refine the variables of interest for the purpose of this study. The following operational definitions serve to describe relevant terminology and the objective of the variables:

**Life stressors.** Events that are characterized as sudden, prolonged, harmful, destructive, or anxiety-provoking in combination with a moderate to high perception of severity defines adverse life experiences in the current study. Events that are perceived as distressing, threatening, and severe can be specifically harmful to development and wellbeing, and can alter biological and psychological development in chronic and pervasive ways. (Cook et al., 2005; Spinazolla et al., 2005; Reese et al., 2011). This study investigated both the perceived impact and total number of life stressors.

**Attachment orientation.** Unlike many definitions of adult attachment styles that focus primarily on one’s relationship with a romantic partners, adult attachment orientation for the purpose of this study is defined as one’s perceived level of security with closeness and independence within the context of multiple interpersonal targets. One’s attachment orientation in each specific relationship is impacted by how they experience attachment-related anxiety or
avoidance. This study explored how high levels of insecure attachment orientations to interpersonal targets impact their ability to experience positive change.

**Interpersonal target.** The conceptual framework in this study is used to promote the idea that various relationships can have different attachment orientations depending on the history and nature of the bond. An interpersonal target figure is defined as a specific individual that represents a type of relationship. For the purpose of this study, there is an interpersonal target identified by each participants to represent a mother-figure, father-figure, romantic partner, and close friend.

**Post-traumatic growth.** The positive social, emotional, mental, and spiritual transformation some individuals experience as a result of overcoming adverse experiences is referred to as post-traumatic growth (PTG) in this study. It is considered the subjective positive psychological change and personal development as a result of coping in the aftermath of a traumatic event (Calhoun, Cann, Tedeschi, & McMillan, 2000; Joseph & Linley, 2006; Zoeller & Maercker, 2006).

**Research Questions**

The relation between reported impact of life stressors, number of life stressors, and perceptions of attachment orientation to a mother-figure, father-figure, romantic-partner, and close-friend in the development of features of PTG (including Relating to Others, New Possibilities, Personal Strengths, Spiritual Change, and Appreciation for Life) was examined in this study. Through the current research, I aimed to answer the following research questions based off of data collected in the demographic questionnaire and the formal assessment measures:
1. What are the effects of Current Impact of Life Stressors, Number of Life Stressors, perceived Attachment Orientation to Parental Figures, and perceived Attachment Orientation to Romantic Partners and Close Friends on Relating to Others?

2. What are the effects of Current Impact of Life Stressors, Number of Life Stressors, perceived Attachment Orientation to Parental Figures, and perceived Attachment Orientation to Romantic Partners and Close Friends on New Possibilities?

3. What are the effects of Current Impact of Life Stressors, Number of Life Stressors, perceived Attachment Orientation to Parental Figures, and perceived Attachment Orientation to Romantic Partners and Close Friends on Personal Strengths?

4. What are the effects of Current Impact of Life Stressors, Number of Life Stressors, perceived Attachment Orientation to Parental Figures, and Perceived Attachment Orientation to Romantic Partners and Close Friends on Spiritual Change?

5. What are the effects of Current Impact of Life Stressors, Number of Life Stressors, perceived Attachment Orientation to Parental figures, and perceived Attachment Orientation to Romantic Partners and Close Friends on Appreciation for Life?

**Significance of the Study**

Post-traumatic growth is a topic that only recently started receiving increased attention in trauma research and clinical practice, and is still limited in its empirical understanding as it relates to trauma severity and perceptions of growth (Joseph, Murphy, & Regel, 2012). Given the potential deleterious impacts of traumatic stress, this proposed study offers many vital endeavors for the clinical mental health field to support. The study has the potential to inform universities, the mental health field, and broader public health policies of this vulnerable population. The results of this study offers important empirical findings based on a university
undergraduate student population sample with reported exposure to adverse life experiences, including loss, neglect, abuse and maltreatment, natural disasters, and more.

Findings were expected to present that even with a history of trauma exposure, positive attachment orientations to an interpersonal target figure can promote features relating to PTG. The implications of this study provide support to my proposed suggestion that traumatic stress as a result of significant life stressors may be remedied by corrective interpersonal experiences in college-age young adults, and provide valuable direction for future resilience research. By drawing on attachment-inspired theories and trauma-informed treatments, long-term implications may also foster the resilience-oriented conceptual foundation needed to develop effective interventions aimed at empowering transformative growth in the college student population, informing university programming and campus-wide resource provision.

**Limitations and Delimitations**

The current study was structured to address the research questions and uphold the requisites needed for credible research as effectively as possible. Selection of measures with sound psychometric properties and literature support were also regulated. Despite these thorough considerations, there were strengths and limitations to this study relating to data collection and research design.

The current study utilized quantitative research methods. Creswell (2010) describes the strengths and weaknesses of utilizing quantitative methods and its different types of statistical analyses. Benefits of quantitative research include its usefulness for studying large numbers of people, the ability to reduce likelihood of confounding variables, and usefulness for obtaining precise numerical data. Limitations include its inability to draw upon deeper phenomena experienced by individuals, and the possibility that categories and theories selected might not reflect the actual experiences of the population. There is also the threat of participants providing
answers they think the researcher wants to hear. I addressed this concerns by selecting an outcome measure tool that controls for social desirability responses.

Data analyses involved correlational and regression approaches. Correlational analysis is particularly beneficial in determining associations between two variables of interest, which can then be easily expressed visually. The fact that correlation allows for the investigation of naturally occurring variables that are unethical and impractical to test experimentally makes the studying of trauma and relationships feasible. Due to the inability to isolate and manipulate the independent variables of exposure to trauma and adult attachment bonding, however, a correlational approach was not able to establish a cause-and-effect relationship to PTG in the student sample. Finally, multivariate analyses have significant importance in psychological research, and were helpful in statistically explaining the potential link between life stressors and adult attachment orientation in various relationships on PTG in college students. Using regression analyses in this study was also useful in controlling associations between the variables and other factors, and specifying the conditions under which associations take place. Similar to correlations, the major conceptual limitation of regression analysis was that unfortunately I could only ascertain associations and not a causal mechanism.

The source of data was from self-report questionnaires. Questionnaires are one of the most common methods used for data collection in psychological research, and are particularly beneficial for the purpose of this current study. This method is time efficient, flexible, inexpensive, and easy to implement. I was able to collect large amounts of data from college students in a relatively short amount of time. Most importantly, participants were able to indicate their own experiences instead of me relying only on my observations. Self-report studies are known to have validity issues, however. There is the threat that participants may
either exaggerate their experiences and perceptions or under-report the severity symptoms in order to minimize their problems. Self-report questionnaires can also be affected by an unrepresentative sample or poorly constructed survey questions. Similarly, random sampling of participants was not feasible due to the voluntary nature of the study and the need for convenience sampling to recruit a large number of participants for a quality sample size.

**Definition of Terms**

**Undergraduate Students**

Undergraduate students include those individuals who matriculate at a college or university following their secondary education experience. Undergraduate students are typically individuals emerging into adulthood, a developmental time period characterized by self-exploration and identity development (Arnett, 2000). They generally pursue programs of interests up to the level of a bachelor’s degree. In order to take into account developmental considerations and general experiences of the average student, the current study defines the undergraduate student specifically as individuals between the ages of 18 and 23 who were pursuing a post-secondary education up to the level of a bachelor’s degree.

**Trauma-Informed Treatment**

Trauma-informed treatment consists of the effective approaches aimed at caring for individuals experiencing traumatic stress. Therapies are considered effective and trauma-informed when there is greater empirical support specifically for the trauma population than other theoretical modalities (Follette & Ruzek, 2006). In one review of trauma-informed treatment modalities, effective care consisted of multi-level considerations, such as cognitive interpretations, developmental considerations, affect regulations, social connections, and more (Black, Woodworth, Tremblay, & Carpenter, 2012). These components are used in the current study’s definition of trauma-informed treatment in order to address the complexity of trauma.
Trauma Exposure

The current study defines trauma exposure as an individual’s history of experiencing significant life stressors that were either impersonal or interpersonal in nature. A sudden, terrifying, or prolonged experience from an individual’s past that impacted their psycho-social functioning would be considered relevant information in an individual’s trauma exposure (Courtois, 2008; Ferentz, 2014). This study specifically measured the number of life stressors in order to conceptualize traumatic history.

Perception

Perception can be defined as an individual’s recognition and interpretation of sensory information, and the process in which one responds to the information (Gerrig & Zimbardo, 2003). People’s interpretation and resulting ways in which they interact with their environment demonstrates how meaning is developed and unique to each individual. Perception is central to many of the variables in this study. Participants were asked to report their perception on their relationships to parents, partners, and friends, current impact of experienced life stressors, and perceived growth across several domains of PTG.

Resilience-Orientation

The resilience-orientation is a strength-based term developed for this study to describe the innate human ability to overcome threatening circumstances and, at a minimum, return to their baseline level of functioning before the event occurred. An individual’s ability to overcome adversity and develop stress-related adaptations is an important feature in conceptualizing resilience (Park, Cohen, & Murch, 1996). Resilience involves the healthier adaptability certain individuals demonstrate, and is often attributed to developmental and interpersonal influences (Philippe et al., 2011).
Bonding

Social connection describes the patterns of interpersonal relationships, interpersonal development, and attachment considerations in a variety of relationships (Ainsworth, Blehar, Waters, Wall, 1988; Bowlby, 1978). I was specifically interested in adult bonding in the current study, referring to the connection established between participants and their parental-figures, romantic partners, and close friends. The definition also includes the level of closeness, dependability, or anxiety they feel within the context of the relationships (Collins, 1996; Feder et al., 2009; Olff, 2012).

Parental-Figures

Early attachment to a mother-figure or father-figure is of significant importance for personal development and how future relationships are experienced (Ainsworth et al., 1988; Bowlby, 1978). Parental-figures are defined in this study as the primary attachment individuals had to their caregivers throughout their lifespan. This includes one’s biological mother or father, adoptive parents, or any primary caretakers identified as a parental-like figure in their life. Attachment was measured by studying the levels of attachment-related avoidance and anxiety experienced within the participant’s relationship with his or her parental-figures.

Romantic Partner

For the purpose of this study, a romantic partner is differentiated between friendships and other associations in that it involves identifying a single individual that is mutually committed and invested in an affectionate, loving, and romantic relationship with the participant. This relationship can also be sexual in nature. Romantic partners are of particular interest for the current study because they are developed later in life, and therefore may possess qualities that could promote new interpersonal learning experiences.
Close Friend

Similar to the qualities of romantic partners, many friendships may provide opportunities for new interpersonal growth. A close friend is considered a relationship of mutual affection between two or more people. This study defines a close friend as the individual in a participant’s life that is identified as having the strongest form of an interpersonal bond that is also strictly platonic and non-sexual or romantic in nature.
CHAPTER TWO: LITERATURE REVIEW

A thorough review of the literature delivered a sound understanding of potential variability in adult attachment orientations, and emphasized the importance of social bonding in the treatment of traumatic stress. This chapter offers an investigation of empirical research and clinical literature specifically aimed to address how traumatic stress and PTG both influence subsequent psychological, physiological, and interpersonal functioning, promoting a multi-level conceptualization of the phenomenon. It is of vital importance to include the innovative amalgamation of adult attachment orientations to current interpersonal target figures and severity of adverse life experiences when conceptualizing student trajectories toward PTG. A review of trauma-informed research, a PTG conceptual framework, and trending phenomena of PTG, along with a comprehensive examination of the literature on adult attachment and exposure to life stressors, were specifically conducted in this chapter to meet this need.

Understanding Traumatic Stress and Post-Traumatic Growth

Thousands of published studies investigating and documenting the negative sequelae resulting from trauma have been conducted over the past several decades. Trauma events can be categorized into impersonal or interpersonal experiences (Sanderson, 2006). Despite impersonal traumas being sudden, terrifying, and life threatening, the severity of the psychological and physiological consequences resulting from physical, sexual, and emotional abuse make interpersonal traumas an inimitable concern. Interpersonal trauma, in particular, violates human connection and harms the building blocks needed to form healthy connections with others. The compounded psychological and physiological effects of repeated trauma exposure can lead to the development of debilitating symptomology on various levels of bio-psycho-social functioning later in life.
Interpersonal trauma is specifically unique in its multidimensional and complicated ramifications. Interpersonal complex trauma refers to repeated abuse by another individual or within the context of a relationship, and involves compounding impacts of various types of abuse. Symptoms of interpersonal trauma cited in clinical treatment literature include regulation problems in the areas of affect, behaviors, physiology, thoughts, and perceptions (Christopher, 2004; Cohen et al., 2012). There is also an increase likelihood of developing co-occurring mood disorders and maladaptive coping strategies to deal with the trauma symptoms. Research indicates a significant increase in severity of emotional dysregulation, dissociation, problematic memory integration, isolation and insecure relationships, PTSD, and co-occurring psychiatric disorders in individuals who are victims of interpersonal trauma compared to individuals who either experienced one type of trauma, impersonal trauma, or no trauma (Fowler, 2013; Van der Kolk, 2002; Wilkinson, 2003).

O’Connor and Alklit (2008) conducted a cross-sectional investigation to examine the association between PTSD and adult attachment in a student population. Findings indicated that after experiencing a traumatic event, those with insecure attachment styles were associated with a greater number of PTSD-related symptoms, presence of somatization, poor emotional coping, negative affectivity, and limited social support. While interpersonal trauma impacts all sexes and genders, research consistently demonstrates that college-age women are particularly at-risk of experiencing interpersonal trauma and its resulting symptomology. In the largest retrospective study to examine the relationship between child abuse, adult rape, and interpersonal experiences, Schumm et al. (2006) reported that females who experienced complex trauma, specifically child maltreatment and adult rape, were almost 3 times more likely to develop PTSD than women with a single-episode of child abuse or adult rape.
Similarly, research also demonstrates a significant association between the repeated traumatization and the number of different types of psychological symptoms experienced in adulthood (Cloitre et al., 2009). Repeated traumatization is of particular concern because of the complexity and severity of subsequent psychological and physiological effects (Hodges et al., 2013). For example, women who experienced a single episode of interpersonal trauma in their life were 6 times more likely to develop PTSD, while women who experienced complex, prolonged, and repeated trauma were 17 times more likely to develop PTSD (Schumm et al., 2006). Research indicates that accumulated exposures to multiple types of traumas increase the likelihood of a victim developing deleterious psychological symptoms including severe panic, suicidality, dissociation and flashbacks, PTSD, and other co-occurring mental health disorders (Arata, et al., 2005; Putnam, 2003; Cloitre et al., 2009). Clinical literature also emphasizes symptoms of dysregulation in consciousness, bodily processes, self-perception, interpersonal processes, and existential meaning (Van der Kolk, 2005). Traumatic stress specifically has been found to be predicted by high emotional responses without rational coping, and often related to lower levels of self-worth and perceived benevolence in other people (Dekel, Solomon, Elklit, & Ginzburg, 2004; Gil, 2005; Nielson, 2003). Fowler (2012) found a significant relationship between interpersonal trauma and increased depression severity that was not observed in those who experienced an impersonal traumatic event.

Without a secure support system established to seek safety and comfort, it is more likely that a victim of abuse or molestation will develop severe trauma symptomology after an adverse life stressor. These studies suggest that the presence of reliable, trustworthy, and engaged relationships with others nurture protective factors against the development of traumatic stress, indicating that interpersonal relationships are an important dimension in cultivating resilience.
Developing Post-Traumatic Growth

Research across various helping disciplines, such as psychology, sociology, and medicine, has tended to focus on the negative sequelae of traumatic events. Nonetheless, the positive outcomes of resilience and PTG that may result from adversities are phenomena deserving of equal exploration. Resilience has been described as psychological adjustment, adapting, stable functioning, and stress-related growth, demonstrating that there is not a single collective term in the mental health field. There is a qualitative difference, however, between resilience and PTG, despite the terms often being used interchangeably. While resilience refers to the recovering from stressful life events and returning to pre-event functioning, PTG involves significant positive development across many levels of individual functioning after a period of mental and emotional distress (Zoellner & Maercker, 2006). Pioneers of PTG research, Tedeschi and Calhoun (2004), define PTG as the “positive psychological change experienced as a result of the struggle with highly challenging life circumstances” (p. 1). Post-traumatic growth, and the focus on personal growth and transformative change after an adverse life experience, is a topic that only recently started receiving increased attention in trauma research and clinical practice, and is still limited in its empirical understanding as it relates to traumatic stressful life events (Joseph & Linley, 2006).

Individuals demonstrating PTG are considered as those who achieve thriving effects after overcoming adversity. They can often develop insight into a more integrative sense of identity and self-reliance, increased empathy and sensitivity to others, self-disclosure, compassion and altruism that enhances depth of intimate relationships with others, greater competence and self-protection to deal with life’s challenges, more openness to new experiences, improved existential meaning, developed recognition of values and priorities, and enhanced appreciation for life
Meaning-making after a severe life stressor has been an important component implemented in trauma-informed counseling to promote healing. The process involves trauma survivors moving from causal meaning to a more existential interpretation of the event, making PTG both a therapeutic process and an adaptive outcome (Davis, Nolen-Hoeksems, & Larson, 1998; Flipp, 1999; Maercker & Zoellner, 2004).

Research and clinical literature indicate a link between traumatic experiences and transformative positive change (Calhoun & R. Tedeschi, 2006; Christopher, 2004; Levin et al., 2008), specifically suggesting the necessary experience of traumatic stress as a prerequisite to PTG. Other studies expand on this suggestion, revealing that the prerequisite of traumatic stress is indeed linked to PTG; however, the relationship between the two experiences may be curvilinear in nature (Levine et al., 2008; Schnurr, Rosenberg, & Friedman, 1993; Solomon & Dekel, 2007; Tedeschi & Calhoun, 1996). Specifically, perceived low levels of severity to stress exposure are associated with minimal growth, moderate to high severity levels are associated with optimal growth, but extreme severity resulting from exposure to stressful events is linked to overwhelming distress, psychopathology, and impeded adaptation (Butler et al., 2005).

Transformative change and PTG is a dynamic process that requires a complex conceptualization across all domains of human functioning and adjustment (Olsson et al, 2003). Despite identifying several common factors that exists across measurements, Connor and Davidson (2003) note that too many variations exist amongst approaches to PTG assessment that it is difficult to determine what internal experiences nurture curative factors in the face of trauma that encourage significant positive growth. Upholding the need for a dynamic perspective of
PTG and keeping with the empirical literature that connects relationships to healthy coping, the following commonalities have been identified that inform the definition of PTG for this study.

Some of the main themes addressed in the research that indicate PTG involve the subjective perception of individuals’ internal experiences, the consistency and reliability of their relationships, and the safety of the world around them. A healthy sense of identity and positive perception of others directly relate with the resilience-orientation regarding one’s perception of accessibility to supportive resources (Ravitz et al., 2010). Mikulincer and Shaver (2007) describe self-agency as a product of trust and intimacy, which is also noted as an important internal resource needed to promote positive change in individuals who experience potential traumatizing events (Olsson et al., 2003). Other factors found to be important features of PTG consist of the presence of empathy, positive self-esteem, altruism, compassion, optimism, and connection (Seligman, Martin & Csikszentmihalyi, 2000).

**Multi-Level Considerations for Post-Traumatic Growth**

Guided by the research, it is clear that an understanding of PTG should include multi-level considerations that emphasize the importance of the interactive nature of biology, psychology, and social relationships. The dualistic nature of the medical model, separating the body from the mind, and limiting the human experience to mechanistic properties, does not take into account variations of individual psychological processes and social levels of organization (Alvrez, Sabela, Pagani, & Meucci, 2012).

It is important to consider both the psychological and physiological implications of stress when considering perceived trauma severity and how it influences psychopathology or adaptation. There is limited research in counseling literature, however, that specifically addresses the biological contributions to resilience and PTG (Boardman et al., 2008; Kim-Cohen
et al., 2004). Christopher (2004) challenged that subsequent trauma psychopathology is a result of maladaptive coping skills and social support that have disrupted an individual’s stress response system. For example, individuals with quality relationships and social support were found to exhibit lower levels of biological stress responsivity measured by cortisol and heart rate levels following exposure to stress (Ditzen et al., 2010). Later research added to these findings by revealing that certain maladaptive attachment styles were more likely linked to bio-markers that indicated actual elevated stress response than others attachment styles (Maunder, Lance, Nolan, Hunter, & Tannenbaum, 2006). Those identified as being distant and disconnected in their relationships, for example, reported lower levels of perceived stress but high-frequency heart-rate variability, while participants with attachment anxiety reported experiencing significant distress without demonstrating altered autonomic functioning.

Intimacy and closeness are important features in the emotionally connected relationships that contribute to healthy adaptation after a traumatic event (Bogar & Hulse-Killacky, 2006; Williams, 2001). Oxytocin, a hormone released during moments of close interpersonal engagement, is thought to be a key ingredient in emotionally connected human pair-bonding (Olff, 2012). Helping to biologically create feelings of trust and safety, oxytocin is associated with helping friends and intimate partners establish a greater sense of belongingness, possibly predicting the potential for PTG by decreasing the stress response system and contributing to interpersonal connection (Feder et al., 2009). Interpersonal elements of compassion, optimism, and gratitude were also found to be components to PTG. Oxytocin is found to promote these elements and play a factor in developing healing emotional climates of warmth, affection, emotional support, and structure.
Biological health and the quality of interpersonal relationships are factors often present when PTG is observed, demonstrating the interplay between biology, psychology, and relationships (Christopher, 2004). Biological processes of the stress response system is a universal reaction to threat. It is the individual’s cultural and interpersonal relationships, however, that influence perception, functioning, and positive growth. DiMatteo, Haskard, and Williams (2007) suggest that individual perceptions of positive growth as a result of social engagement will influence the likelihood that one will engage in healthy coping in the face of adversity. These findings contribute to understanding the complexity of stress coping and positive change as it is impacted by social bonding variations. Through interpersonal engagement and the innate human mechanisms for PTG, the stress response system should stabilize and positive growth should be expected as a normal outcome of life stressors instead of psychopathology (Christopher, 2004).

Post-traumatic growth is indeed best conceptualized in terms of the compounding effects of human’s biology, psychology, and relationship factors (Santrock, 2007). It is vital to conceptualize the human potential for positive transformation, specifically the college student population for the focus of the current study, as an entire system (Christopher, 2004; Engal, 1982; Fava & Sonino, 2008, Masten, 2007). Biology seeks to explain how PTG may be impacted by the physiological functioning of an individual’s body, such as understanding levels of oxytocin, cortisol, and heart rate variability. Psychology addresses the possible mental or emotional contributions to one’s overall health, such as the presence of self-esteem and adaptability. Lastly, relationship factors look to consider environmental and contextual factors that contribute to PTG, which mostly include relationships with family, friendships, and romantic partnerships for the college student. Investigating the ways in which bonding outlets
may directly contribute to PTG is of primary interest for studying college students in the current study. Siegel (2010, 2012) emphasizes how interpersonal relationships impact the functioning of the mind and body across the lifespan. This finding signifies how relational experiences for college students can restore their once ruptured sense of security and promote PTG.

The utilization of such integrative considerations is clearly vital in the understanding of the college-age population, and for the purpose of understanding the relationship between attachment orientation and exposure to life stressors in the development of PTG in this young adult population. Alvarez et al. (2012) note that while a more holistic concept of human dimensions has been adapted in conceptual and academic concepts, many researchers, educators, and mental health professionals are still challenged with implementing this knowledge into practical service. Counselors are in need of a model that details the interaction within the multi-level system to promote PTG, informing service provision to best serve the college student population.

Theoretical Model

Functional Descriptive Model of Post-Traumatic Growth

The college transition for youths can be marked by many novel experiences, some of which may put them at risk for encountering distressing events that challenge their coping abilities and compromise their well-being (Rew & Horner, 2003). College students, along with the entire human population, also encounter stressors, losses, and difficult situations as a part of life. In addition to the thorough investigation of risk factors over the decades, research encourages continued empirical investigation of the potential factors that contribute to healthy coping and the fostering of PTG (Davey, Eaker, & Walters, 2003; Haase, 2004; Rew & Horner, 2003).
Most research studies on positive change focus on a single traumatic event (e.g., a natural disaster, having cancer) and then examine the level of PTG experienced by study participants. A limitation with this approach is that it negates individual variations and varying life circumstances before, during, and after the trauma. Specifically, past research has not investigated the aggregate relationship between trauma exposure, perception of experiences, and variations of relationships across the lifespan in understanding trauma outcomes. There is specifically minimal research investigating the factors that contribute to the phenomena of resiliency and positive growth during college, and no research that compares the attachment variations with parental-figures, romantic partners, and close friends to determine if certain relationships mediate the impacts of multiple life stressors on PTG. The current study takes into consideration a multi-level perspective when conceptualizing PTG, but also calls for a more detailed model of PTG in order to explore the interpersonal factors across the lifespan that are linked to expected transformative growth. Based on their empirical investigations and clinical experience, Calhoun and Tedeschi (1995; 1999; 2004) developed the functional-descriptive model (FDM), detailed in Figure 1 below, to understand how traumatic events disrupt individuals’ life trajectories, causing emotional distress and forcing a reconceptualization of their identity, purpose, connection with others, and value system.
Tedeschi and Calhoun’s (1995, 1996, 2004) FDM is the most empirically supported, established, and comprehensive model of PTG (Joseph & Linley, 2006). It is widely accepted in the PTG literature. This model illustrates that PTG results from a perceived threatening and catastrophic event that disrupts the foundational schemas, beliefs, and goals of the individual. This experience is followed first by automatic ruminations, including intrusive thoughts and flashbacks, about the event. The model posits that the initial automatic rumination may consist of the development of intrusive thoughts, flashbacks, and other trauma-related symptomology. Calhoun and Tedeschi (2004) then describe the benefits of more deliberate ruminations, which lead to schema change and narrative development, potentially resulting in positive
transformation. Rumination is a central component of the FDM. The most comprehensive understanding of this model posits the PTG is predominantly influenced by intentional adjustments to cognitive schemas, but can also promote changes related to connecting and interacting with others, existential meaning and spiritual growth, and a greater appreciation for life and personal wellbeing. A trauma survivor may, therefore, experience meaning-making and have the opportunity to make positive adjustments to their life schemas and reauthor their personal narrative. New life schemas and meaning-making represent the higher level of complex thought that characterize PTG.

The resilience-orientation frames traumatic stress as normal and necessary for transformative development. Post-traumatic growth is an outcome of a period of psychological distress and deliberate rumination, followed by the challenge of integrating the adverse events into one’s identity and personal narrative. The FDM highlights this process by beginning with the assumption that traumatic events initially cause the emotional struggle that prompts the impetus for change (Calhoun & Tedeschi, 2008).

**Direction for Future Model**

The concept of PTG is still in development (Joseph, Murphy, & Regel, 2012). The FDM developed my Calhoun and Tedeschi (1998) is the most empirically supported model of PTG established in current literature (Joseph & Linley, 2006). Despite the model’s thorough conceptualization of individual perception and cognitive restructuring, it emphasizes only limited sociocultural influences and fails to adequately address the role of new interpersonal learning experiences through healing, healthy relationships. At best, it only mentions the importance of individual characteristics and qualities of the critical events that predict PTG, including the nature and context of the potential trauma, interpersonal support, and coping factors (Tedeschi & Calhoun, 2004). A review of PTG literature by Joseph et al. (2012) indicate that relationship
enhancement, compassion for others, and longing for more intimate bonding are enhanced during the development of PTG. Secure relationships may, therefore, provide a setting for trauma survivors to develop a greater sense of resiliency, recover their personal strengths, and cultivate new appreciation and meaning in their life.

I conducted a narrowed review of literature on the sociocultural considerations of PTG in order to address the limitations of the FDM. Specifically, I aimed to elaborate on the FDM’s components of contextual factors, social support, and coping factors. These social influences also provide support for the current study in that it addresses why interpersonal bonding, like early attachment and adult relationships, may impact the development of PTG.

**Contextual factors.** Outcomes of life stressors can be profoundly impacted by the context in which the events are experienced. Consistent with the current research, Calhoun and Tedeschi (2013) suggest that proximity and perception of life stressors influence disruption of cognitive processes and heighten emotional responses. Repeated traumas and their cumulative negative effects may increase the likelihood of developing acute stress and PTSD-related symptomology. Traumatic experiences often suffered by the college student population are specifically associated with stress-related outcomes when healthy coping and social support are not present.

According to Luther et al. (2000), positive change involves a dynamic process encompassing positive adaptations within the context of the threat or adversity. The polyvagal theory explains how the experience of a life threatening event is significantly altered if the victim has immediate access to interpersonal engagement. Porges (2009) explains that a face–heart connection during meaningful social interactions help regulate the heightened visceral state after a trauma. Safe and supportive bonding from friends and family during a life stressor establishes
a context for refuge and support. Healthy bonding helps an individual access the internal resources within that context to develop PTG, while emotional and social disconnect relate to a lifetime diagnosis of traumatic stress and severity of trauma-related symptomology (Dorahya et al., 2009).

Those who develop less traumatic stress symptoms after experiencing significant adversity are shown to have a greater sense of connection and perception of interpersonal supports (Mitani, Fujita, Nakata, & Shirakawa, 2006). It is therefore apparent as to why a context of meaningful interpersonal engagement should be emphasized for adaptive coping strategies in a PTG model. It is also vital to investigate potential variations within different relationship experiences that may identify why some individuals experience PTG while other do not.

**Social Support.** The American Psychological Association (2007) defines social support as “the provision of assistance or comfort to others, typically in order to help them cope with a variety of biological, psychological, and social stressors” (p. 869). Bonding creates a sense of reassurance by surrounding one’s self with people who care about their happiness and wellbeing (Dunn & O’Brien, 2009). It is well established in research that stressful early childhood experiences and dysfunctional parental attachment support the developmental pathways to poor mental health, interpersonal engagement problems in adulthood, difficulty engaging in relationships, increased severity of unhealthy affective symptoms, psychiatric co-morbidity, and poor coping strategies (Berry et al., 2007; Gajwani et al., 2013, & Gumley et al., 2013, Kesslet et al., 2010; Michail & Birchwood, 2014). The link between attachment and resilience is also present in adult relationships. There may be experiences, such as bonding and emotional engagement, that can contribute to heathier adaptive development and provide the initial
resources for resilience (Philippe et al., 2011; Porges, 2009). Emotionally supportive relationships help with the development of self-regulation and co-regulation skills, high self-regard, and safety in pursuing other interpersonal engagements (Bogar & Hulse-Killacky, 2006; Kagan & Spinazzola, 2013; Porges, 2009), experiences which are vital in the transformative growth of at-risk college students.

College students who experience threatening life stressors and have been victimized by another desperately require corrective interpersonal experiences to improve their current perception of relationships, while also addressing their individual trauma recovery. Chaos and crises often dominate one’s life who has traumatic stress. Trusting others can be perceived as an unbearable and life-threatening thought. Intimacy seems to be impossible while safety seems to be only experienced in isolation. When a traumatized individual falls within this interpersonally-impaired system and does not have secure and compassionate engagement with others, they often will engage in avoidant, ambivalent, and disorganized ways of managing their systems and life in general (Feld, 2004). Different methods of measuring avoidant and ambivalent attachment styles in research provide guidance for the current study in determining how the quality of adult bonding may impact adaptability to traumatic experiences (Brennan, Clark, & Shaver, 2001; George & West, 2001; Maunder & Hunter, 2009; West & Sheldon-Kellar, 1992). However, a thorough investigation of how different types of adult relationships are compared and experienced continues to be lacking in PTG research and literature.

Variations of subjective perceptions of one’s inner world and adult relationships exist across dimensions (George, Kaplan, & Main, 1984). Avoidance and anxiety are key insecure attachment dimensions found in this study’s identified measures that highlight the difference between one’s negative sense of self versus one’s negative perception of others (Ravitz,
Maunder, Hunter, Sthankiya, Lancee, 2010). Those with avoidance attachment are characterized by evading the intimacy of close relationships and putting excessive value on self-reliance. Those with an anxious attachment to others are constantly expecting and fearing abandonment and receiving insufficient love. Common positive outcomes and factors related to quality bonding include openess to new possibilities, enhanced empathy and ability to relate to others, improved personal strength and self-agency, developed sense of spirituality and existential meaning, and appreciation for life. Calhoun and Tedeschi (2013) note that their model supports quality adult bonding as a factor that encourages adaptive cognitive schemas needed to reshape the individual’s narrative of the trauma. However, the model fails to address the potential for variation in attachment orientations and the possibility for other adult relationships to possess the characteristics needed to mediate the adverse experiences on post-trauma outcomes.

**Coping strategies.** Self-awareness and self-agency in managing interpersonal-related states, such as separation and loss, and trust and intimacy, provide insight into coping strategies in the face of trauma (Mikulincer & Shaver, 2007). Healthy coping is demonstrated through higher levels of emotional closeness and comfort with trusting others, and lower levels of anxiety and fear about being abandoned and unloved (Collins, 1996). According to the PTG model by Tedeschi and Calhoun (1995), coping strategies that promote transformative growth often involve connecting with others and re-establishing a sense of belonging. Avoidance, isolation, and withdraw are consistently found in research to increase traumatic stress symptomology (Brown, Mulhern, & Joseph, 2002). Healthy attachment styles relate to adaptive coping mechanisms in that those who are able to form emotionally intimate and trusting relationships with others are projected to have a greater sense of self-worth and confidence, positive self-agency, self-sufficiency, positive social behaviors and romantic relationships, warm regard for
others, appropriate assertiveness, security in their personality to be open and expressive, desire for closer affectionate bonds, and healthy psychosocial functioning (Collins 1996; Ravitz et al., 2010; West & Sheldon-Kellor, 1992; West & Sheldon-Kellor, 1994). Unfortunately, the deterministic perception of the model regarding an overall attachment style does not account for the possibility of corrective interpersonal experiences and the development of a secure adult attachment orientation to a single identified interpersonal target figure.

While research often frames resilience as a process or potential outcome of encountered trauma and stress, Blum and Ireland (2004) encourage further exploration of the strengths, and protective and curative factors within the lives of at-risk young adults. I hypothesize that these characteristics are a product of a meaningful and secure relationship with a bonding figure, and are in fact the same features found in PTG.

**Proposed Factors to Enhance Conceptualization of Post-Traumatic Growth**

There is overwhelming evidence indicating that individuals with a history of adversity can experience profound positive changes in their lives. Joseph and Linley (2006) emphasize the importance of adaptive stress-appraisal, healthy coping strategies, and optimistic personality characteristics in experiencing such transformation after life stressor. While these qualities may be ideal to possess as protective factors against traumatization, this emphasis neglects to consider the interpersonal nature that is foundational to all of these features. I assert in this research that it is the presence of quality interpersonal bonding that nurtures the development of such features, which can be experienced both as protective against a future trauma and, in the case of the current study, mediating of the impacts of experienced life stressors.

Little is known about the processes and outcomes of the experience of transformative growth despite apparent qualitative changes in functioning (Calhoun & Tedeschi, 2004). No
research has been done to specifically address the variations among different relationships across the lifespan in impacting the outcome of adverse experience and process toward PTG. While informative, most studies only address adult bonding either in terms of one’s attachment to a romantic partner or as a general way of connecting in all relationships due to childhood attachment to parental-figures. They do not adequately detail how variations among different relationship across the lifespan influence the consequences of a potential trauma and enhance the likelihood of experiencing transformative growth.

A detailed model is needed to elaborate on the weaknesses of the FDM developed by Calhoun and Tedeschi (1998) to specifically frame the impact that trauma has on PTG through the lens of potential mediating relationships. Iarussi (2013) supports this extension by calling for a deeper understanding of the ways students internally experience and externally interact with their world. Examining variations in different relationships and attachment orientations can provide that insight into how students are engaging with their various bonding figures, how they find meaning and self-worth within themselves, and how they perceive others in the world around them. Based on the gaps in current PTG research and the call for a more thorough understanding of the process toward positive change, the design of the current study is structured to investigate the potential for variations across several adult relationships, and demonstrate how this variability may impact the relation between trauma exposure and transformative growth.

A research model is proposed in Figure 2 below to illustrate bonding considerations in the development of PTG, which will be useful in understanding the statistical approach to analyze the suggested associations. Specifically, the research model outlines the process to which one’s attachment orientation with several interpersonal targets (Mother-Figure, Father-Figure, Romantic Partner, and Close Friend) impact the relation between life stressors and the
development of PTG features, while controlling for current impact of life stressor(s). Guided by attachment theory, parental attachment was considered separately as early childhood attachment to caregivers often remains constant across the lifespan and plays an important role in development. Attachment to a romantic partner and a close friend may offer insight into how bonding relationship later in life can alter the trajectory toward PTG after a traumatic experience.

*Figure 2: Model of the Impact of Attachment Orientation and Life Stressors on the Development of Post-Traumatic Growth Factors*

<table>
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<tr>
<th>Current Impact of Life Stressors</th>
<th>Number of Life Stressors</th>
<th>Attachment to Mother-Figure</th>
<th>Attachment to Father-Figure</th>
<th>Attachment to Romantic Partner</th>
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<td>3. Personal Strengths</td>
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<td>4. Spiritual Change</td>
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<td>5. Appreciation for Life</td>
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1. Relating to Others
2. New Possibilities
3. Personal Strengths
4. Spiritual Change
5. Appreciation for Life
Summary

A review of the literature and various measures was conducted to identify what general qualities are often demonstrated in resilient individuals and those with PTG, and how these characteristics are observed within the context of interpersonal engagement (Joseph & Linley, 2006; Tedschi & Calhoun, 2004; Zoellner & Maercker, 2006). There has been an increase in research that focuses on transformative growth in recent years, potentially impacting the mental health field in terms of future trauma-informed care, public policy, education, and funding in the future if this trend continues (Haskett, Nears, Ward, & McPherson, 2006; Luthar & Cicchetti, 2000).

Despite movement toward promoting resiliency in clinical practice and research, the literature continues to lack a thorough examination of how adults experience different types of relationships and attachment orientations that may impact both their internal and external perceptions, thus impacting their ability to experience positive growth after a life stressor. Current frameworks that focus on PTG, such as the FDM (Calhoun & Tedeschi, 2013), have limited emphasis on quality attachment as a factor that encourages adaptive cognitive schemas necessary to reshape the individual’s perception around the negative experience.
CHAPTER THREE: METHODOLOGY

The methodology for the study is presented in this chapter, which includes the purpose of the study, research design, a description of the target population, and the procedure for collecting data. The measurements used in this study are also described, and the statistics used for analyzing the data are identified.

Purpose of the Study

The human potential to experience PTG has enormous implications for the mental health field and specifically the counseling profession. The purpose of the study is to describe how potential variability in various relationships may influence how life stressors impact PTG. Understanding how PTG characteristics are enhanced in life can provide valuable information to mental health researchers who can empirically investigate ways to clinically incorporate these factors in evidenced-based treatment and trauma-informed care. Counselors can then implement new strength-based and resilience-oriented techniques to promote healing and well-being. In order to do this, a well-constructed research design with reliable and valid instruments are required to assess PTG. The study will answer the following research questions:

1. What are the effects of Current Impact of Life Stressors, Number of Life Stressors, perceived Attachment Orientation to Parental Figures, and perceived Attachment Orientation to Romantic Partners and Close Friends on Relating to Others?

2. What are the effects of Current Impact of Life Stressors, Number of Life Stressors, perceived Attachment Orientation to Parental Figures, and perceived Attachment Orientation to Romantic Partners and Close Friends on New Possibilities?
3. **What are the effects of Current Impact of Life Stressors, Number of Life Stressors, perceived Attachment Orientation to Parental Figures, and perceived Attachment Orientation to Romantic Partners and Close Friends on Personal Strengths?**

4. **What are the effects of Current Impact of Life Stressors, Number of Life Stressors, perceived Attachment Orientation to Parental Figures, and Perceived Attachment Orientation to Romantic Partners and Close Friends on Spiritual Change?**

5. **What are the effects of Current Impact of Life Stressors, Number of Life Stressors, perceived Attachment Orientation to Parental figures, and perceived Attachment Orientation to Romantic Partners and Close Friends on Appreciation for Life?**

**Research Design**

The design of the current study is a quantitative research methodology, including correlation and multiple regression to analyze data. A review of design approaches in other research studies was conducted in order to gain support for selected methodology and research design, resulting in identifying correlational and non-experimental survey approaches as the research design for the study.

For the purpose of addressing the aims and research questions of the current research, a correlational design was useful for describing how one phenomenon is related to another in natural contexts where the researcher cannot influence any of the variables of interest (Lappe, 2000). Ben-Natan et al. (2014) utilized a correlational design to study risk factors typical of different types of suspected child abuse in a sample of 114 cases. Similarly, the aim of the current research study was to identify relationship variations typical of individuals who demonstrate PTG by examining the association among two or more variables at one time: Attachment Orientation, Number of Life Stressors, Current Impact of Life Stressors, and features
relating to PTG in a sample of undergraduate college students. An advantage of correlational studies is that with high internal validity, it can determine if valuable associations exist between different factors of human experiences and reduce the likelihood of confounding variables (Creswell, 2013). Sampling university students in a natural setting will help provide insight into potential similar trends on other campuses, adding to the benefits of external validity. This design is best suited for the aims of this study, as it provides methods to observe, describe, and predict variables and variable relationships to explore interpersonal bonding and resilience.

A self-report questionnaire packet, consisting of a demographic form and three instruments with sound psychometric properties, was the primary tool for data collection. A non-experimental survey research design is one of the most used research methods in the social sciences field used to explore the nature of frequency of variables (Heppner, Wampold, & Kivlighan, 2008). The advantages of survey research designs have been well documented. The primary advantage involves the ease of collecting large amounts in a short time frame and in a cost-effective way (Heppner et al., 2008; Tian, Tang, Liu, Tan, and Tang, 2011). The accumulation of descriptive data for all variables also allows the researcher to make comparisons across demographic variables and to describe the levels of each variable. The current study consists of two trauma-related variables, four attachment-oriented variables, and five PTG-related variables.

Three anonymous self-report assessments and a demographic form were distributed as a questionnaire packet in classrooms to the participants in this study. The assessments and demographic were important in order to obtain an overview of the target population, and consider their thoughts, feelings, perceptions, behaviors, and experiences without influencing them in any way (Creswell, 2013). For calculating an appropriate and sufficient sample size for
testing multiple correlations, Tabachnick and Fidell (2007) recommended using the formula $N \geq 50 + 8m$, where $m$ is equal to the number of variables. I used this formula by treating $m$ as the number of variables in the study (i.e., two trauma-related independent variables, four attachment-oriented independent variables, and five PTG-related outcome variables) in order to obtain an appropriate sample size for the study. The minimum number of participants for the study was 138 using the formula: $N \geq 50 + 8m$, where $m$ was equal to 11 (the sum of the independent and dependent variables). I continued to collect data until the sample size reached at least this number.

As the researcher, I looked for potential influences of attachment orientation within parental, romantic, and platonic relationships on the impacts of traumatic life events on PTG and PTG-related characteristics. Qualities that demonstrate PTG include enhancement in one’s ability to relate to others, optimism for new possibilities in life, confidence in one’s personal strengths, positive spiritual change, and improved appreciation for life. While it was projected that relationships can be corrective interpersonal experiences for individuals with histories of trauma exposure in order to instill the features needed for PTG, this research also addressed the lack of knowledge of the strength of this relation. The direction of the relation between the various interpersonal targets and the development of PTG was also confirmed.

**Participants**

Individuals recruited to participate in this study were young adult, undergraduate college students who were matriculating at a large Mid-Atlantic public university in the United States. The university serves approximately 35,000 undergraduates from around the country and world. According to the university admissions website, the undergraduate population in the 2014-2015 academic year was 46% women and 54% men. The diversity undergraduate enrollment for the
same year consisted of approximately 70% European American, 8% international, 6% African American, 6% Asian American, 6% Hispanic, and 5% multiple races or other.

While student participants came from various backgrounds and were of different genders, ages, cultural identities, and sexual orientations, it was expected that the majority of the sample would likely be European-American women from the U.S, due to the population statistics of the university and of participating classes. The participants’ ages ranged from 19 to 23 years with a mean age of 20.49 (SD = 0.92). Women represented 70.8% (n = 148), men made up 22.5% (n = 47), and those who identified as transgender represented 3.3% (n = 7) of the sample. The majority of participants were white/Caucasian (65.6%, n = 137), followed by Hispanic/Latino (9.1%, n = 19), black/African American (7.7%, n = 16), Asian/Pacific Islander (7.7%, n = 16), and other (6.7%, n = 14). Participants needed to be able to read and write in the English language in order to understand the instructions and complete the assessments successfully.

**Instruments**

**Demographic Questionnaire**

Demographic variables were collected by an author-developed measure to describe the sample, identify the personal characteristics and individual variations, and control for extraneous variables (Creswell, 2010). Items on the demographics questionnaire included age, gender, cultural identity, major, relationship status, and sexual orientation, with gender and major identified in literature as having stronger correlations with the trauma, attachment, and PTG. Several items were also included in the demographics form for future studies and was not used in the analyses for this dissertation. These items included perceived childhood attachment to parental figures, perceived closest relationship, perceived connection to university resources, and perceived social support from peers.
A number of demographic variables relevant to PTG have been identified in the literature, thus providing support to their inclusion in my demographics form. Helgeson and colleagues (2006) conducted a meta-analysis of 87 cross-sectional studies examining benefit findings after trauma and found that age, gender, education, and ethnicity all predicted PTG. Younger individuals were found to experience more growth than older adults, a finding that is consistent with much of the literature (Bellizzi, 2004; Polatinsky & Esprey, 2000; Stanton, Bower, & Low, 2006). Tedeschi and Calhoun (2004) suggest that younger people are more open to changing their schemas and thus experience greater PTG. Women were also found to experience more growth than men; however, this finding has been mixed in the literature with only limited studies producing similar results (Park et al., 1996; Tedeschi & Calhoun, 1996), and others suggesting gender has no relationship to PTG at all (Stanton et al., 2006). Ethnicity also predicts PTG since non-whites tend to report significantly more growth than their white counterparts. Helgeson and colleagues hypothesize that ethnic group differences exist because minorities generally have greater exposure to adversity as a result of their social status. Certain personality characteristics are also related to PTG. Individuals who are open to change, optimistic, self-confident, and extroverted tend to experience more growth (Abraído-Lanza et al., 1998; Helgeson et al., 2006; Tedeschi & Calhoun, 1996; Tennen et al., 1992). Religiousness has also been associated with PTG, as those who engage in greater religious participation tend to exhibit greater PTG (Calhoun, Cann, 23 Tedeschi, & McMillan, 2000; Koenig, Pargament, & Nielsen, 1998; Park et al., 1996). Clearly, a variety of personal characteristics must be considered when examining PTG, and a comprehensive model that incorporates all of them into its framework is needed in order to understand the process of transformative growth.
Experiences in Close Relationships- Relationship Structures Questionnaire (ECR-RS; Fraley, Niedenthal, Marks, Brumbaugh, & Vicary (2006).

A variety of strategies and specialized instruments for the assessment of adult attachment are available for clinical practice and research. Self-report surveys on adult attachment styles focus on an individual’s perceptions about themselves and their close relationships, specifically encouraging reflection and insight on affect regulation, social awareness, and behaviors within the context of relationships.

The ECR-RS used for the current study is one of the most recent measures of adult attachment. This instrument is a revised version of Fraley, Waller, and Brennan’s (2000) Experiences in Close Relationships- Revised measure, the original of which was developed by Brennan, Clark, and Shaver (1998). The scale consists of 9 repeating items for each interpersonal target, with reverse scaling items 1-6 to prevent method-bias, to assess attachment styles to a variety of interpersonal targets. It is scored on a 7-point Likert-type scale ranging from 1 as strongly disagree to 7 as strongly agree. The ECR-RS is designed to assess individual differences regarding a respondent’s attachment-related avoidance (6 items) and anxiety (3 items) to a Mother-Figure, Father-Figure, Romantic Partner, and Close Friend, with a resulting insecure attachment score for each figure. This total attachment score for each interpersonal target was used to analyze how variability in relationships impact PTG in students with a history of trauma. An additional unique quality of the instrument is that it considers perceptions of bonding and engagement across the lifespan. It prompts respondents to consider their sense of security about the availability and responsiveness of others, and comfort in being close and depending on others, within various relationships that are fostered at different stages of social
development. This may be useful in determining if attachment orientations can change with new relationships, and if healthy romantic partnerships and friendships impact responses to trauma.

Informed by Bartholomew and Horowitz (1991) adult attachment prototypes, The ECR-RS assesses for healthy bonding with secure attachment represented at the low ends of the avoidance and anxiety dimensions. Examples of attachment-related avoidance items include: “I don't feel comfortable opening up to this person,” and “I prefer not to show this person how I feel deep down.” Examples of attachment-related anxiety items include: “I'm afraid that this person may abandon me,” and “I worry that this person won't care about me as much as I care about him or her.”

Research is supporting the new ECR-RS as it continues to demonstrate sound psychometric properties and cross-cultural adequacy (Donbaek & Elklit, 2014; Fraley, Heffernan, Vicary, & Brumbaugh, 2011a; Fraley, Vicary, Brumbaugh, & Roisman, 2011b; Gouveia, Moreira, Canavarro, & Martins, 2015). Assessing for reliability in the current study, Chronbach’s coefficient alpha of the ECR-RS was .929, indicating high reliability. Past studies confirm good reliability and construct validity, including factor-specific links to the model of adult attachment (Donbaek & Elklit, 2014; Gouveia et al., 2015). The test-retest reliability over 30 days of the individual scales are approximately .65 for the domain of romantic relationships and .80 in the parental domain. Cronbach’s alpha reliability estimates of the scores are highly comparable to other recent multi-item adult attachment measures, despite the ECR-RS scales being based on fewer items. The internal consistency across the four target domains (Mother-Figure, Father-Figure, Romantic Partner, and Close Friend) specifically ranged from .81 to .92 for the Avoidance scale and .83 to .87 for the Anxiety scale.
Fraley et al. (2011a) also describe the associations between attachment across a variety of relational domains, such as relationship quality, intrapersonal functioning, and personality traits. For example, the Investment Model Scale (IMS) (Rusbult, Martz, & Agnew, 1998) assesses commitment, investment, satisfaction in a relationship, and the quality of alternatives. The alpha reliabilities for the scores in these domains in Fraley’s study ranged from .79 to .91. Finally, alpha reliabilities for individual differences in the Big Five personality traits of Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience (John, Srivastava, & Pervin, 1999) ranged from .81 to .90. Research therefore supports the reliability and validity of the ECR-RS, indicating its appropriateness for future research studies.


There are many stress-related instruments assessing for history, exposure, and severity to crises and difficult life events. A screening tool that is used universally, time efficient, and designed to assess exposure to major life crises and events was necessary to measure the independent variable of stress exposure for the purpose of this study. The LSCL-R is a self-report measure created by professionals at the VA National Center for PTSD. It was selected for the current study to assess both the number of experienced life stressors and the current impact of those potentially traumatizing events.

The measure focuses on 30 life events, including both impersonal and interpersonal stress events (Wolfe & Kimerling, 1996). The measure follows a “yes or no” or Likert scale format, and addresses experiences with victimization, loss of a loved one, natural disasters, emotional neglect, separation or divorce, and more. Participants were prompted to provide further information for endorsed experiences, including age when the event began and ended, if they
perceived their lives or someone else’s life to be threatened (“yes” or “no”), whether they experienced a sense of helplessness or fear (“yes” or “no”), and the extent to which the event impacted their current life (scored on a 5-point Likert scale with 1 indicating “not at all” and 5 indicating “extremely”). As the researcher for the current study, I was particularly interested in the number of endorsed life stressors and the perceived impact those life stressors had on a participant’s current life.

The list of life stressors include impersonal to interpersonal events, with a range in prevalence among society. Examples of items include: “Have you ever been in a serious disaster (for example, an earthquake, hurricane, large fire, explosion),” “Did your parents ever separate or divorce while you were living with them,” “When you were young (before age 16) did you ever see violence between family members (for example, hitting, kicking, slapping, punching),” and “After age 16, were you ever touched or made to touch someone else in a sexual way because he/she forced you in some way or threatened to harm you if you didn't?”

Strengths of the LSCL-R are that it separates life stressor inquiries to facilitate recall of events, and provides a wide range of experiences for respondents to consider in order to remove the label of “trauma” (Breslau, 2002; Zlotnick et al., 2006). A limitation of using the LSCL-R is that its psychometric properties have only been assessed in a small number of research studies. The reliability estimates providing Cronbach’s coefficient alpha of the LSCL-R in the current study was moderate, at .614 for items measuring Number of Life Stressors and .645 for items measuring Current Impact of Life Stressors. Other studies demonstrated good to moderate test-retest reliability and criterion-related validity with diverse populations of women (Brown, Stout, & Mueller, 1999; Kimerling et al., 1999). The most notable review of the LSCL-R was the use of the instrument as part of the Women, Co-Occurring Disorders, and Violence Study (McHugo
et al., 2005). Test–retest reliability was re-administered approximately a week apart with a sample of community-based women (N = 186). Item test–retest reliability demonstrated that the LSCL-R exceeds the criteria for acceptable psychometrics, with kappa ranging from k = .52 to .95, and an average of .70 among the items. The findings in research, along with the item diversity and comprehensiveness of the measure, supported the use of the LSCL-R in the current study.

Post-Traumatic Growth Inventory (PTGI; Tedeschi and Calhoun, 1996).

Understanding how characteristics of positive growth are developed in life after a traumatic event can provide valuable information to mental health researchers who can improve evidenced-based treatment and trauma-informed care in the clinical field. Participants were asked to complete the PTGI, a 21-item measure used to assess the PTG dependent variables in this study. The measure was a 5-point Likert format. Respondents indicate the extent to which they experienced changes as a result of their life stressors, ranging from 0 (not at all) to 5 (a very great degree). Items correspond to five dimensions that represent PTG-related characteristics, consisting of “Relating to Others” (7 items), “New Possibilities” (5 items), “Personal Strengths” (4 items), “Spiritual Change” (2 items), and “Appreciation for Life” (3 items). Each dimension received a score, with the option of using the summation of these dimensions to provide a total PTG score that ranges from 0 to 105. The larger the number of each dimension, the greater perception of personal growth. The ability to distinguish dimensions from a total score was useful for the current study in determining what factors were influenced most by life stressors and attachment orientations.

I conducted a reliability testing of the 21 items in the PTGI for the current study, finding a Chronbach’s alpha coefficient of .965. Similarly, Taku, Cann, Tedeschi & Calhoun (2008)
provided support for the items within the PTGI, consisting of the dimensions of “Relating to Others,” “New Possibilities,” “Personal Strengths,” “Spiritual Change,” and “Appreciation for Life.” Findings indicated a high internal consistency at .94, along with sound internal consistency with an alpha of .90 and individual factors emerging between .67 and .85 (Taku, 2008). A recent study examining gender differences in PTG and PTSD in a sample of earthquake survivors (N = 2,080) demonstrated an internal reliability to be at 0.82, with internal reliabilities for the subscales to range between .80 and .84, respectively (Jin, Xu, Liu, 2014). The test-retest reliability was acceptable at $r = .71$ after two months. This PTGI has shown good test–retest reliability for western and Asian samples, with an internal consistency for the total PTGI being 0.90 (Dekel, 2007; Tedeschi & Calhoun, 2004).

Responses to the PTGI were found to be unrelated to the social desirability motive when analyzed against the Marlowe-Crowne Social Desirability Scale upon development of the measure (Tedeschi and Calhoun, 1996). Examples of items include “Having compassion for others” (Relating to Others), “I established a new path for my life” (New Possibilities), “I am more likely to change things which need changing” (Personal Strengths), “A better understanding of spiritual matters” (Spiritual Change), and “My priorities about what is important in life” (Appreciation for Life). The scale appears to have utility in determining how successful individuals, coping with the aftermath of a traumatic event, are in reconstructing or strengthening their perceptions of self, others, and the meaning of events.

Variables

Demographic Variables

**Gender.** Gender was a self-reported nominal variable in the study. Participants selected one answer from “Male,” “Female,” “Transgender,” or “Other” on the demographic
questionnaire. This variable was used to address the mixed findings from other literature regarding whether gender predicted PTG.

**Cultural identity.** Ethnicity was a self-reported nominal variable in the study. Participants selected one answer from “White,” “Hispanic,” “Black,” “Native American,” “Asian American,” or “Other” on the demographic questionnaire. Participants were also asked to specify their Cultural Identity if they selected “Other.” This variable was used in coherence with past research findings that found non-whites to show more growth than their white counterparts after experiencing adversity.

**Independent Variables**

**Current impact of life stressors.** Also measured by the LSCL-R (Wolfe at al., 2003), the Current Impact of Life Stressors was an additional predictor variable for the present study. Endorsed life stressors received a self-reported score to measure the extent to which they affected the respondent in the past year. Since traumatization is defined not as the presence of adverse experience, but as an individual’s response to the experience, assessing for impact is crucial in understanding trauma and resilience. Higher scores correspond to higher levels of perceived trauma as a result of identified life stressors. This score on the LSCL-R was used for the six research questions.

**Number of life stressors.** Number of Life Stressors was a self-reported predictor variable measured by the Life Stressor Checklist- Revised (LSCL-R) (Wolfe et al., 2003). The 30 items assess the number of traumatic stressors and negative events occurring over one’s lifetime, the age at which the event occurred, the duration and perceived impact of these event. The total amount of endorsed experiences was used to address the curve-linear nature often
trauma experiences on resiliency. This score on the LSCL-R was used for the six research questions.

**Attachment orientation to interpersonal targets.** Adult attachment orientation was selected as a mediator-like variable that was measured by the Relationship Structures Questionnaire (ECR-RS)(Fraley et al., 2006). To calculate this variable, two scores, one for attachment-related avoidance and the other for attachment-related anxiety, were computed separately for each interpersonal target (Mother-Figure, Father-Figure, Romantic Partner, Close Friend). These two scores were then averaged for each interpersonal targets’ total score, defined for this study as one’s Attachment Orientation. Higher scores represent greater levels of relationship-specific insecure attachment, while lower scores represent greater relationship-specific security. These scores from the ECR-RS were used for the six research questions.

**Dependent Variable**

**Post-traumatic growth factors.** Five domains of were the outcome variables in this study, measured by the Post-Traumatic Growth Inventory (PTGI)(Tedeschi and Calhoun, 1996). It is a 21-item self-report inventory that uses a 6-point Likert scale to measure positive outcomes that result from traumatic experiences. The total score of all 21 items represents the respondent’s overall PTG with higher scores corresponding to a higher level of perceived positive transformation. The total score of each of the five PTGI factors was calculated, including “Relating to Others,” “New Possibilities,” “Personal Strength,” “Spiritual Change,” and “Appreciation for Life.” The individual scores for each of these dimensions correspond to the five research questions.
Procedure

This study intended to examine the association among life stressors, various attachment orientations, and PTG in college students. Ethical approval was obtained from the Institutional Review Board (IRB) of the University at the beginning of the spring 2015 semester. Five graduate-level students were recruited to complete all measures in a paper-pencil format for the purpose of piloting the study procedures, and to evaluate the data gathering process prior to collection of data on a larger scale. The pilot group was offered the choice to immediately complete the questionnaire packet or take it with them to finish at a later time. Three students completed and returned the measures immediately upon receiving the questionnaire packet. Two students opted to complete the packet at a later time, reporting back to me several days later after I made a follow-up contact. The pilot group provided feedback in individual meetings regarding their opinions on the questionnaire format, the length of time it took them to complete all measures, and any confusion or additional input they had as a result of their participation. They indicated that it took them approximately 15 minutes to complete the questionnaire packet, and that all measures seemed straightforward in their items and paper/pencil format. Feedback from the pilot group revealed that those who opted to complete the questionnaire at a later time felt less motivated to do so than those who immediately engaged in the process. I used this feedback to inform the final format of the questionnaire and the most effective way to recruit undergraduate participants. Specifically, I chose to offer the questionnaire only in paper-pencil format and focused on recruiting student who could participate during in-class visits.

The research presented minimal to no risk to participants. All undergraduates participating in the study received the same informed consent, involving an instructional script approved by IRB explaining the voluntary nature, purpose, and directions for completing the
questionnaire packet (Appendix A). Faculty educators that could provide access to large undergraduate lecture classes were contacted to schedule times to administer the questionnaires for dates in Spring, 2015 (Appendix B). On the days of administering the questionnaire packets, which included a demographic inquiry and three self-reporting measures, an explanation of and instructions for the study was given. Permissions for using the various instruments were secured beforehand from the researchers who developed the scales. Students were reassured of the anonymous and voluntary nature of the study, and were educated on the sensitive material that the study aimed to explore as potential risks of participating. Students that agreed to participate received an informed consent document and the questionnaire packet containing the various instruments (Appendix C). The demographic inquiry was the first form for participants to complete. Participants continued to the three other instruments (i.e., The Relationships Structures Questionnaire, Life Stressor Checklist- Revised, and Post Traumatic Growth Inventory) at their own pace. The researcher collected the questionnaire packets and remained in the classroom to answer any questions.

Data Analysis

The data was analyzed using Statistical Package for Social Science (SPSS) 23.0, employing descriptive and inferential statistics that included correlation and hierarchical multiple regression. Sufficient sample size was exceeded at 202 participants in order to effectively implement a hierarchical regression approach to analyze multiple variables of interest.

For the five research questions addressed the various relations among the trauma-related variables (Current Impact of Life Stressors and Number of Life Stressors) and the four attachment-oriented variables to interpersonal targets (Mother-Figure, Father-Figure, Romantic Partner, and Close Friend) on the five PTG-related dependent variables (Relating to Others, New Possibilities, Personal Strength, Spiritual Change, and Appreciation for Life). A review of the
dataset examined accuracy, distributions, outliers, and missing values. Creswell (2013) guided the direction of analyzing the data using univariate, bivariate, and multivariate statistics. Demographics of the sample were first examined to include frequencies, ranges, means, and standard deviation. To set criterion for inclusion of demographics in the current study, I developed a correlation matrix among all potential variables. The screening process for relevant demographics involved reviewing the correlation matrix for significant relations between demographic variables and at least one independent variable and one dependent variable. Descriptives of the variables included in the current study are provided in Table 1 below.

Table 1: Descriptive Statistics for All Original Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Impact</td>
<td>.00</td>
<td>60.00</td>
<td>13.97</td>
<td>9.49</td>
</tr>
<tr>
<td>Number of Events</td>
<td>.00</td>
<td>15.00</td>
<td>5.17</td>
<td>3.00</td>
</tr>
<tr>
<td>Mom Attachment</td>
<td>1.00</td>
<td>7.00</td>
<td>2.25</td>
<td>1.36</td>
</tr>
<tr>
<td>Dad Attachment</td>
<td>1.00</td>
<td>7.00</td>
<td>2.78</td>
<td>1.70</td>
</tr>
<tr>
<td>Partner Attachment</td>
<td>1.00</td>
<td>4.50</td>
<td>2.14</td>
<td>.81</td>
</tr>
<tr>
<td>Friend Attachment</td>
<td>1.00</td>
<td>4.00</td>
<td>1.71</td>
<td>.77</td>
</tr>
<tr>
<td>PTG Relationships</td>
<td>.00</td>
<td>35.00</td>
<td>20.66</td>
<td>9.69</td>
</tr>
<tr>
<td>PTG Possibilities</td>
<td>.00</td>
<td>25.00</td>
<td>12.74</td>
<td>7.07</td>
</tr>
<tr>
<td>PTG Strengths</td>
<td>.00</td>
<td>20.00</td>
<td>12.57</td>
<td>5.53</td>
</tr>
<tr>
<td>PTG Spirituality</td>
<td>.00</td>
<td>10.00</td>
<td>4.41</td>
<td>3.44</td>
</tr>
<tr>
<td>PTG Appreciation</td>
<td>.00</td>
<td>27.00</td>
<td>9.82</td>
<td>4.36</td>
</tr>
</tbody>
</table>
The correlation matrix was also used to identify the effect of attachment orientations on the relation between life stressors and PTG. Specifically, bivariate correlations were implemented to study the strength and direction of the individual relations between the Current Impact of Life Stressors, Number of Life Stressors, the four Attachment Orientations (Mother-Figure, Father-Figure, Romantic Partner, and Close Friend), and the five PTG dimensions (Relating to Others, New Possibilities, Personal Strength, Spiritual Change, and Appreciation for Life). Correlation analyses were appropriate for investigating the relationship among variables in this study to compare two selected variables at a time to determine their simultaneous covariance. Pearson coefficients were calculated for the variables to assess the magnitude and direction of the correlations, and visuals and percentages demonstrating results were provided. The strength and direction of these correlations informed the stages of the regression model used for the present study.

Hierarchical multiple regressions are used to measure the relationship among a single dependent variable and two or more independent variables, and to predict changes in the dependent variable (Creswell, 2013; Hair, Black, Babin, Anderson, & Tatham, 2006). This regression analysis required the assumptions of normality, linearity, homoscedasticity, independence, and normal distribution of residuals, which necessitated square root and power transformations for many of the original variables. As recommended by Tabachnick and Fidell (2007), I also checked for outliers and multicollinearity.

The process of hierarchical multiple regression evaluates variability changes in the outcome variables as different predictor variables are added (Field, 2009). Hierarchical multiple regression analyses were employed in the present study to investigate whether Attachment Orientations among each Interpersonal Target may change the effects of the Number of Life
Stressors on the five PTG dimensions individually, while controlling for Current Impact of Life Stressors. Analyses specifically examined the link among these variables using a sample of undergraduate college students. A reminder of the research model is provided again in Figure 2 below. Modeling the approach to hierarchical regression, which Bryk and Raudenbush (2002) described in their recommendations for applications and data analysis of hierarchical linear models, the regression model in the current study follows several steps provided below:

1. Demonstrate that the independent variable in Block 1 (Current Impact of Life Stressors) is significantly related to the outcome variable (PTG).

2. Determine if a significant correlation exists between variable in Block 1 (Current Impact of Life Stressors) and independent variable in Block 2 (Number of Life Stressors).

3. Determine if relations exist between Block 2 (Number of Life Stressors) and the independent variables in Block 3 (Attachment Orientations to Mother-Figure and Father-Figure), which demonstrated positive correlations with the outcome variable.

4. Determine if relations exist between Block 3 (Attachment Orientation to Mother-Figure and Father-Figure) and the independent variables in Block 4 (Attachment Orientation to Romantic Partner, and Close Friend), which demonstrated negative correlations with the outcome variable.

5. Examine whether Block 4 (Attachment Orientation to Romantic Partner and Close Friend) significantly change the strength and direction toward one of the outcome variables (PTG dimension).

6. Repeat steps 1-6 for each of the five dimensions of PTG.
Figure 2: Model of the Impact of Attachment Orientation and Life Stressors on the Development of Post-Traumatic Growth Factors

<table>
<thead>
<tr>
<th>Current Impact of Life Stressors</th>
<th>Number of Life Stressors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attachment to Mother-Figure</td>
<td>Attachment to Romantic Partner</td>
</tr>
<tr>
<td>Attachment to Father-Figure</td>
<td>Attachment to Close Friend</td>
</tr>
</tbody>
</table>

1. Relating to Others
2. New Possibilities
3. Personal Strengths
4. Spiritual Change
5. Appreciation for Life
CHAPTER FOUR: RESULTS

This chapter describes the results of the preliminary analyses, the univariate analyses, and the bivariate analyses. In addition, it presents the results of hierarchical multiple regression analyses for the study’s six research questions.

Preliminary Analysis

Data Cleaning

I gathered survey data for this study through questionnaire facilitation during undergraduate classroom visitation. From the full dataset (N = 210), the study only included participants who were undergraduate students, between the ages of 18 and 23, and enrolled at a Mid-Atlantic institution of higher education. Based on these criteria, I removed two respondents from the original dataset for not meet age requirements. Among the remaining respondents (N = 208), I removed six participants because they either did not answer one of the interpersonal target domains in the ECR-RS instrument or did not complete the PTGI measure. As a result, I analyzed a total of 202 participants for missing data. Pallant (2007) provides further guidelines for screening and cleaning data, which involves checking variables for errors and correcting mistakes. Following these recommendations, I inspected the frequencies for each of the variables and all of the items that made up the scales. An inspection of minimum and maximum values was helpful in determining if any values fell outside of what should be expected. Values that were entered in error were identified and corrected.

Missing data. I turned to the literature to determine how to precisely handle missing data. Graham (2012) recommends that missing data type should first be determined before performing a remediation of the data. A review of what constitutes unanswered values as (1) missing completely at random, (2) missing at random, or (3) missing not at random indicated that the remaining missing values were not at random. Most items of the LSCL-R were left blank by
participants because they were instructed to only endorse the items that they experienced. The values of the missing variables were therefore related to the reason they were missing. Missing values were remediating by coding them as “0” and labeled as “not applicable.”

**Outliers.** Following the remediation of missing values, I proceeded to check for outliers by looking at histogram distributions of the variables of interest. Next, I inspected a boxplot that resulted in the identification of several genuine outlier scores. Noticing that the scores were still within the range of possible scores for the variables, I determined that the values were not entered in error. Tabachnick and Fidell (2007) offer two options to deal with outliers: (1) change the value to a less extreme value, allowing the participant to remain in the analysis but not allowing the score to distort the statistic, and (2) remove all extreme outliers from the data file. However, Sundram (2003) warns against violation of the sample by failing to maintain participants’ responses. Not wanting to disrupt the sample due to outlier samples containing sufficient information to support study findings and recognizing that outlier scores naturally occur, I decided to include these values in the data. Additionally, all the measures and variables of interests were either categorical or measured on a Likert scale, resulting in scores not extreme enough to warrant removal from the dataset.

**Univariate Analysis**

The data was analyzed to check that it met the assumptions for multivariate procedures, including normality, linearity, and homoscedasticity. Weinberg and Abramowits (2002) note that a variable meets the normality assumption when the skewness statistic divided by the standard error of skewness is less than or equal to the absolute value of two. Results from the original data indicated both positively and negatively skewed data across several of the variables, which required normality transformations.
Tabachnick and Fidell (2007) directed to implement a square root transformation of a variable with a positively skewed distribution and a power transformation for a variable with a negatively skewed distribution to generate a normally distributed variable. The independent variables measured by the LSCL-R (Current Impact of Life Stressors, Number of Life Stressors) were positively skewed and needed square root transformations. The four interpersonal targets (Mother-Figure, Father-Figure, Romantic Partner, Close Friend) measured for the ECR-RS were also positively skewed. Square roots transformations were conducted to generate a normal distribution for the variables: Current Impact of Life Stressors, Number of Life Stressors, and Attachment Orientation to Romantic Partner. Unfortunately, square root transformations were not successful in reaching the required coefficient for normality for the variables, Attachment Orientation to Mother-Figure, Father-Figure, and Close Friend. Three square root transformations were helpful in achieving skewness coefficients closer to the recommended value, however, and were used for the hierarchical regression. Additional power transformations were conducted on the outcomes variables, Relating to Others and Personal Strengths, measured by the PTGI to generate a normal distribution.

Finally, Tabachnick and Fidell (2007) indicated that variables are homoscedastic when they meet normal assumption. The majority of variables in this study met the assumptions for normality, linearity, and homoscedasticity upon transformation, with skewness coefficients approaching normality for Attachment Orientation to Mother-Figure, Father-Figure, and Close Friend. Thorough examination of the results, especially as they relate to Attachment Orientation to Mother-Figure, Father-Figure, and Close Friend, were attended to and considered with caution.
Bivariate Analysis

Developing a correlation matrix among all variables of interest was useful in setting the criteria for inclusion in the current research model, and also assessing for variables that were highly correlated. I calculated bivariate correlations for all original data and then transformed data to determine relations between the various variables of interest for the current study, including demographic, four independent variables, and five outcome variables. The only demographic variable that significantly correlated with at least one original independent variable and one original outcome variable was “sexual orientation.” The “sexual orientation” variable had a moderate positive correlation with Number of Life Stressors \( (r = .518) \) and Current Impact of Life Stressors \( (r = .407) \), a small positive correlation with Attachment Orientation to a Mother-Figure \( (r = .242) \), Attachment Orientation to a Father-Figure \( (r = .266) \), and Attachment Orientation to a Close Friend \( (r = .153) \), and a small positive correlation each PTG dimension with a Pearson Correlation range between .230 and .238. My original research questions and research model did not address “sexual orientation,” and I received only a small response of participants identifying as non-heterosexual \( (N = 16) \) in my sample. Therefore, I used no demographic variables as control variables in the subsequent regression analyses.

Calculating bivariate correlations also enabled the examination of multicollinearity. Tabachnick and Fidell (2007) indicated that researchers should eliminate one of the two variables if they are highly related to each other with a correlation equal to or greater than .90. Upon review of the correlation matrix, there were no variables that indicated multicollinearity, with the exception of the relation between Current Impact of Life Stressors and Number of Life Stressors \( (r = .919) \). To account for this high correlation, the regression model controlled for Current Impact of Life Stressors in determining the trajectory toward PTG.
Examining the relations between the two trauma-related variables (Current Impact of Life Stressors and Number of Life Stressors) showed significant relations with all PTG domains and three attachment-oriented variables (Attachment Orientations to Interpersonal Targets). Current Impact of Life Stressors had a positive, moderate correlation to New Possibilities ($r = .437$), Personal Strengths ($r = .427$), and Appreciation for Life ($r = .431$), and a weak, positive correlation to Relating to Others ($r = .351$) and Spirituality Change ($r = .257$), all significant at $p < .001$. Similar significant findings were observed between Number of Life Stressors and Relating to Others ($r = .398$), New Possibilities ($r = .446$), Personal Strengths ($r = .481$), Spirituality Change ($r = .313$), and Appreciation for Life ($r = .448$).

Current Impact of Life Stressors and Attachment Orientation to Mother-Figure correlated at $.207$ ($p < .001$), to Father-Figure at $.203$ ($p < .001$), and had no significant link to Romantic Partner. The correlations between Number of Life Stressors and Attachment Orientation to these three Interpersonal Targets had a similar trend, with Mother-Figure at $.319$ ($p < .001$), Father-Figure at $.347$ ($p < .001$), and no significant association with Romantic Partner. An interesting finding was the negative correlations observed between Attachment Orientation to Close Friend and the trauma variables, Impact of Life Stressors ($-.272$, $p < .001$) and Number of Life Stressors ($-.295$, $p < .001$).

Correlations were also observed between three attachment variables (Attachment Orientation to Mother-Figure, Father-Figure, and Close Friend) and the five outcome variables relating to PTG. Attachment Orientation to Mother-Figure had a weak, positive relationship to Relating to Others ($.174$, $p = .013$), New Possibilities ($.238$, $p = .001$), Personal Strengths ($.192$, $p = .006$), Spirituality Change ($.151$, $p = .032$), and Appreciation for Life ($.183$, $p = .009$). A weak, positive relationship was also observed with Attachment Orientation to Father-Figure and
two outcome variables, New Possibilities (.071, p = .016) and Personal Strengths (.173, p = .014).

There were negative correlations observed between Attachment Orientation to Romantic Partners and all outcome variables; however, these associations were not significant. Attachment Orientation to Close Friend again provided an interesting result with a moderate, negative correlation to all outcome variables, including Relating to Others (−.429, p < .001), New Possibilities (−.496, p < .001), Personal Strengths (−.484, p < .001), Spirituality Change (−.354, p < .001), and Appreciation for Life (−.444, p < .001). Relations between the variables used in the study are defined in the correlation matrix below (Table 2).

Table 2: Correlation Matrix of all Variables (N = 202)

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Current Impact+</td>
<td>.919**</td>
<td>.207**</td>
<td>.203**</td>
<td>.027</td>
<td>-.272**</td>
<td>.341**</td>
<td>.437**</td>
<td>.427**</td>
<td>.257**</td>
<td>.431**</td>
<td></td>
</tr>
<tr>
<td>2. Number of Events+</td>
<td>.246**</td>
<td>.266**</td>
<td>.073</td>
<td>-.295**</td>
<td>.398**</td>
<td>.446**</td>
<td>.481**</td>
<td>.313**</td>
<td>.448**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Mom Attachment+</td>
<td>.622**</td>
<td>.384**</td>
<td>-.045</td>
<td>.174*</td>
<td>.238**</td>
<td>.192**</td>
<td>.151*</td>
<td>.183**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Dad Attachment+</td>
<td>.472**</td>
<td>.039</td>
<td>.114</td>
<td>.170*</td>
<td>.173*</td>
<td>.105</td>
<td>.105</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>5. Partner Attachment+</td>
<td>.223**</td>
<td>-.053</td>
<td>-.127</td>
<td>-.073</td>
<td>-.097</td>
<td>-.113</td>
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<td>6. Friend Attachment+</td>
<td>.429**</td>
<td>.496**</td>
<td>.484**</td>
<td>.354**</td>
<td>.444**</td>
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<td>7. PTGI Relationships+</td>
<td>.722**</td>
<td>.812**</td>
<td>.662**</td>
<td>.735**</td>
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</tr>
<tr>
<td>8. PTGI Possibilities</td>
<td>.804**</td>
<td>.613**</td>
<td>.747**</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. PTGI Strengths+</td>
<td>.628**</td>
<td>.774**</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>10. PTGI Spirituality</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.565**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. PTGI Appreciation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

+ Transformed Variables  
** Correlation is significant at the .01 level (2-tailed) 
* Correlation is significant at the .05 level (2-tailed)
Hierarchical Multiple Regression

Five corresponding hierarchical multiple regressions analyses were conducted to address the five research questions presented in the current study. After conducting the transformations for normality, I administered hierarchical multiple regressions for the purpose of examining the impact of: 1.) a control variable (Current Impact of Life Stressors); 2.) an independent variable (Number of Life Stressors); 3.) two subscales of attachment orientation representing early life bonding (Attachment Orientation to Mother-Figure, and Father-Figure); 4.) two subscales of attachment orientation representing interpersonal bonding that often occurs throughout the lifespan (Romantic Partner and Close Friend); and 5.) five PTG subscales representing the outcome variables (Relating to Others, New Possibilities, Personal Strengths, Spiritual Change, and Appreciation for Life).

Applying hierarchical regression analyses served to address the five research questions presented in this study. I examined the research model in this study by adhering to the following procedures:

1. Demonstrate that the independent variable in Block 1 (Current Impact of Life Stressors) is significantly related to the outcome variable (PTG).
2. Determine if a significant correlation exists between variable in Block 1 (Current Impact of Life Stressors) and independent variable in Block 2 (Number of Life Stressors).
3. Determine if relations exist between Block 2 (Number of Life Stressors) and the independent variables in Block 3 (Attachment Orientations to Mother-Figure and Father-Figure), which demonstrated positive correlations with the outcome variable.
4. Determine if relations exist between Block 3 (Attachment Orientation to Mother-Figure and Father-Figure) and the independent variables in Block 4 (Attachment Orientation to Romantic Partner, and Close Friend), which demonstrated negative correlations with the outcome variable.

5. Examine whether Block 4 (Attachment Orientation to Romantic Partner and Close Friend) significantly change the strength and direction toward one of the outcome variables (PTG dimension).

6. Repeat steps 1-6 for each of the five dimensions of PTG.

Each of the research questions considers the relation between Number of Life Stressors on the four Attachment Orientations to Interpersonal Targets on a single domain of PTG, while controlling for Current Impact of Life Stressors. Five separate, four-stage hierarchical multiple regressions were conducted with the five factors of PTG as the dependent variables. Current Impact of Life Stressors was entered in Block 1 of the regression as a control variable, followed by the Number of Life Stressors entered in block 2, Attachment Orientations to Mother-Figure and Father-Figure variables entered in Block 3, and Attachment Orientation to Romantic Partners and Close Friend variables were entered in Block 4. The Attachment Orientation variables were entered in this order as it seemed important based on literature and bivariate findings of the current study to separate early life relationships from relationships formed later in life. The effects of life stressors and attachment-oriented variables on the five PTG factors are defined in Table 3A-3E.
**Research Question 1.** What are the effects of Current Impact of Life Stressors, Number of Life Stressors, perceived Attachment Orientation to Parental Figures, and perceived Attachment Orientation to Romantic Partners and Close Friends on Relating to Others?

*Table 3A*

*Result of Multiple Regression Analyses for Effects of Various Attachment Orientations and Life Stressors on Relating to Others (N = 202)*

<table>
<thead>
<tr>
<th>Block</th>
<th>Variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Current Impact of Life Stressors</td>
<td>.341**</td>
<td>-.153</td>
<td>-.157</td>
<td>-.154</td>
</tr>
<tr>
<td>2</td>
<td>Number of Life Stressors</td>
<td>.538**</td>
<td>.532*</td>
<td>.418*</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Mother-Figure</td>
<td>.120</td>
<td>.104</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Father-Figure</td>
<td>-.071</td>
<td>.004</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Romantic Partner</td>
<td>-.047</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Close Friend</td>
<td>-.333**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Significant at the .01 level  
* Significant at the .05 level

Table 3A above explains the effects of life stressor and attachment orientation variables on Relating to Others. The first hierarchical multiple regression revealed that in Block 1, Current Impact of Life Stressors contributed significantly to the regression model, $F(1,200) = 26.394, p < .001$ and accounted for 11.7% of the initial variation in the PTG outcome variable, Relating to Others. The standardized beta coefficients demonstrated that Current Impact of Life Stressors had a moderate, positive effect on Relating to Others ($\beta = .341, p < .001$). Introducing the Number of Life Stressor variable in Block 2 explained an additional 4.5% of variation in
Relating to Others, and this change in $R^2$ was significant, $F (2,199) = 19.194$, $p = .001$. Among the trauma-related factors included in Block 2, Number of Life Stressors had the largest standardized beta with a moderate, positive effect ($\beta = .538$, $p = .001$) on Relating to Others, and was determined by a t-test to be significant. The standardized beta coefficient for Impact of Life Stressors decreased from .341 in Block 1 to -.153 in Block 2, confirming the multicollinearity relationship between the two trauma-related variables.

Adding Attachment Orientation to Mother-Figure and Father-Figure in Block 3 to the regression model explained less than 1% of change, and this statistic was not found to be significant, $F (4,197) = 10.120$. An examination of standardized beta coefficients indicated that Number of Life Stressors was the only significant variable in Block 3 with a moderate, positive effect ($\beta = .532$, $p = .002$), therefore contributing most to the variation change in Relating to Others. Although t-tests determined the impact of Attachment to each Parental Figure to be insignificant, analyzing Block 3 did demonstrate an interesting result showing standardized beta coefficients for Mother-Figure to be .120 and Father-Figure to be -.071. Finally, the addition of Attachment Orientation to Romantic Partner and Close Friend in Block 4 explained a significant 10.7% of the variation in Relating to Others, with $F (6,195) = 12.467$, $p < .001$.

When all six independent variables were included in Block 4 of the regression model, Number of Life Stressors ($\beta = .414$, $p = .009$), with a moderate and positive effect, and Attachment Orientation to Close Friends ($\beta = -.333$, $p < .001$), with a moderate and negative effect, were found to be significant predictors of Relating to Others. Together the six independent variables accounted for 27.8% of the variance in Relating to Others.
Research question 2. What are the effects of Current Impact of Reported Life Stressors, Number of Life Stressors, perceived Attachment Orientation to Parental Figures, and perceived Attachment Orientation to Romantic Partners and Close Friends on New Possibilities?

Table 3B
Result of Multiple Regression Analyses for Effects of Various Attachment Orientations and Life Stressors on New Possibilities (N = 202)

<table>
<thead>
<tr>
<th>Block</th>
<th>Variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Current Impact of Life Stressors</td>
<td>.437**</td>
<td>.174</td>
<td>.184</td>
<td>.173</td>
</tr>
<tr>
<td>2</td>
<td>Number of Life Stressors</td>
<td>.286</td>
<td>.246</td>
<td>.125</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Mother-Figure</td>
<td></td>
<td>.160*</td>
<td>.159*</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Father-Figure</td>
<td>-.032</td>
<td>.094</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Romantic Partner</td>
<td>-.163*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Close Friend</td>
<td>-.372**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Significant at the .01 level
* Significant at the .05 level

Table 3B above illustrates the effects of life stressor and attachment orientation variables on New Possibilities. The second hierarchical multiple regression revealed that in Block 1, Current Impact of Life Stressors contributed significantly to the regression model, F (1,200) = 47.2, p < .001) and accounted for 19.1% of the variation in the PTG outcome variable, New Possibilities. The standardized beta coefficient for Current Impact of Life Stressors demonstrated an initial moderate, positive effect (β = .437, p < .001) on New Possibilities. Introducing the Number of Life Stressor variable explained an additional 1.3% of variation in
New Possibilities. This change in $R^2$ was not significant, $F(2,99) = 25.457$. Analyzing standardized beta scores in Block 2 indicated a weak, positive effect for Current Impact of Life Stressors and a moderate, positive effect for Number of Life Stressors; however, both trauma-related variables were confirmed to be insignificant.

Adding Attachment Orientation to Mother-Figure and Father-Figure to the regression model in Block 3 explained an additional 1.9% that was not found to be significant, $F(4,197) = 14.130$. Of the trauma-related variables and attachment-oriented variables to Parental-Figures included in Block 3, only Attachment Orientation to Mother proved to be significant with a weak, positive effect on New Possibilities ($\beta = .160$, $p = .049$). The inclusion of Attachment Orientation to Romantic Partner and Close Friend in Block 4 explained a significant 16.7% of the variation in New Possibilities, with $F(6,195) = 20.811$, $p < .001$.

When all six independent variables were included in Block 4 of the regression model, three attachment-oriented variables (Attachment Orientation to Mother-Figure, Romantic Partner, Close Friend) were found to be significant predictors of New Possibilities. Specifically, standardized beta coefficients demonstrated that Attachment Orientation to Mother-Figure had a weak, positive effect ($\beta = .159$, $p = .030$), Romantic Partner had a weak, negative effect ($\beta = -.163$, $p = .014$), and Close Friend had a moderate, negative effect ($\beta = -.371$, $p < .001$) on New Possibilities. Together, the six independent variables accounted for 39% of the variance in New Possibilities.
**Research question 3.** What are the effects of Current Impact Life Stressors, Number of Life Stressors, perceived Attachment Orientation to Parental Figures, and perceived Attachment Orientation to Romantic Partners and Close Friends on Personal Strengths?

*Table 3C*

*Result of Multiple Regression Analyses for Effects of Various Attachment Orientations and Life Stressors on Personal Strengths (N = 202)*

<table>
<thead>
<tr>
<th>Block</th>
<th>Variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Current Impact of Life Stressors</td>
<td>.427**</td>
<td>-.094</td>
<td>-.085</td>
<td>-.086</td>
</tr>
<tr>
<td>2</td>
<td>Number of Life Stressors</td>
<td>.567**</td>
<td>.540**</td>
<td>.417*</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Mother-Figure</td>
<td>.078</td>
<td>.066</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Father-Figure</td>
<td>-.002</td>
<td>.095</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Romantic Partner</td>
<td>-.090</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Close Friend</td>
<td>-.365**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Significant at the .01 level
* Significant at the .05 level

The effects of life stressor and attachment orientation variables on Personal Strengths are described in Table 3C above. The third hierarchical multiple regression revealed that in Block 1, Current Impact of Life Stressors contributed significantly to the initial regression model, $F(1,200) = 44.606, p < .001$ and accounted for 18.2% of the variation in the PTG outcome variable, Personal Strengths. The standardized beta coefficient indicated that this variable had a moderate, positive effect ($\beta = .427, p < .001$) on Personal Strengths. In Block 2, introducing the Number of Life Stressor variable explained an additional 5% of variation in Personal Strengths,
and this change in $R^2$ was significant, $F (2,199) = 30.142, p < .001$. Number of Life Stressors was the only significant trauma-related variable in Block 2, demonstrating a moderate, positive effect ($\beta = .567, p < .001$) on Personal Strengths. The standardized beta coefficient for Impact of Life Stressors decreased from .247 in Block 1 to -.094 in Block 2, again indicating the multicollinearity relationship between the two trauma-related variables.

Adding Attachment Orientation to Mother-Figure and Father-Figure to the regression model only explained an additional less than 1%, and was not significant, $F (4,197) = 15.389$. Examining the standardized beta coefficients indicated that Number of Life Stressors was the only significant variable in Block 3 with a moderate, positive effect ($\beta = .540, p = .002$), therefore contributing most to the variation change in Personal Strengths. A t-test determined the impact of Attachment to each Parental Figure to be insignificant; however, Block 3 again showed standardized beta coefficients for Mother-Figure to be weak and positive at .120 and Father-Figure to be weak and negative at -.002. Finally, the addition of Attachment Orientation to Romantic Partner and Close Friend in Block 4 explained a significant 13.8% of the variation in Personal Strengths, with $F (4,195) = 19.621, p < .001$.

When all six independent variables were included in Block 4 of the regression model, Number of Life Stressors and Attachment Orientation to Close Friends were found to be the significant predictors of Personal Strengths. Number of Life Stressors had a moderate, positive effect ($\beta = .417, p = .005$) and Attachment Orientation to Close Friends had a moderate, negative effect ($\beta = -.365, p < .001$) on Personal Strengths. Together, the six independent variables accounted for 37.6% of the variance in Personal Strengths.
**Research Question 4.** What are the effects of Current Impact of Life Stressors, Number of Life Stressors, perceived Attachment Orientation to Parental Figures, and perceived Attachment Orientation to Romantic Partners and Close Friends on Spiritual Change?

*Table 3D*

*Result of Multiple Regression Analyses for Effects of Various Attachment Orientations and Life Stressors on Spiritual Change (N = 202)*

<table>
<thead>
<tr>
<th>Block</th>
<th>Variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
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<td>-.195</td>
<td>-.204</td>
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<td>Number of Life Stressors</td>
<td>.492*</td>
<td>.479</td>
<td>.394*</td>
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</tr>
<tr>
<td>3</td>
<td>Mother-Figure</td>
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<td>.103</td>
<td>.103</td>
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</tr>
<tr>
<td>3</td>
<td>Father-Figure</td>
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<td>.045</td>
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<td>4</td>
<td>Romantic Partner</td>
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<td>Close Friend</td>
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<td>-.263**</td>
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** Significant at the .01 level  
* Significant at the .05 level

The effects of life stressor and attachment orientation variables on Spiritual Change is explained in Table 3D above. The fourth hierarchical multiple regression indicated in Block 1, Current Impact of Life Stressors contributed significantly to the regression model, F (1,200) = 14.171, p < .001 and accounted for 6.6% of the variation in the PTG outcome variable, Spiritual Change. The effect of Current Impact of Life Stressors on Spiritual Change was moderate and positive (β = .257, p < .001). Incorporating the Number of Life Stressor variable in Block 2 explained an additional 3.8% of variation in Spiritual Change, and this change in R² was
significant, \( F(2,199) = 11.533, p = .004 \). Of the trauma-related variables in Block 2, only Number of Life Stressors was significant with a moderate, positive effect (\( \beta = .492, p = .004 \)), indicating its influence on the outcome variable, Spiritual Change. Again, data analysis demonstrated a decrease in standardized beta coefficients in Impact of Life Stressors from .297 in Block 1 to -.194 in Block 2 when the second trauma-related variable was introduced.

Adding Attachment Orientation to Mother-Figure and Father-Figure to Block 3 of the regression model explained less than 1%. Despite the statistic not found to be significant (\( F(4,197) = 6.186 \)), attachment variables to Parental Figures demonstrated opposite effect directions. Attachment Orientation to Mother-Figure had a weak and positive effect on Spiritual Change at .103, while Attachment Orientation to Father-Figure had a weak and negative effect on the same outcome variable at -.047. In Block 4, the addition of Attachment Orientation to Romantic Partner and Close Friend explained a significant 8.6% of the variation in Spiritual Change, with \( F(4,195) = 7.930, p < .001 \).

Block 4 of the regression model included all six independent variables, and specified Number of Life Stressors and Attachment Orientation to Close Friend as the significant predictors of Spiritual Change. Number of Life Stressors had a moderate, positive effect (\( \beta = .394, p = .020 \)) and Attachment Orientation to Close Friend had a moderate, negative effect (\( \beta = -.263, p < .001 \)) on the same outcome variable. The six independent variables together accounted for 19.7% of the variance in Spiritual Change.
Research question 5. What are the effects of Current Impact of Life Stressors, Number of Life Stressors, perceived Attachment Orientation to Parental Figures, and perceived Attachment Orientation to Romantic Partners and Close Friends on Appreciation for Life?

Table 3E

Result of Multiple Regression Analyses for Effects of Various Attachment Orientations and Life Stressors on Appreciation for Life (N = 202)

<table>
<thead>
<tr>
<th>Block</th>
<th>Variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Current Impact of Life Stressors</td>
<td>.431**</td>
<td>.119</td>
<td>.111</td>
<td>.104</td>
</tr>
<tr>
<td>2</td>
<td>Number of Life Stressors</td>
<td>.339*</td>
<td>.338*</td>
<td>.234</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Mother-Figure</td>
<td>.132</td>
<td>.128</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Father-Figure</td>
<td>-.089</td>
<td>.010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Romantic Partner</td>
<td></td>
<td></td>
<td>-.117</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Close Friend</td>
<td></td>
<td></td>
<td>-.315**</td>
<td></td>
</tr>
</tbody>
</table>

** Significant at the .01 level
* Significant at the .05 level

Table 3E above explains the effects of life stressor and attachment orientation variables on the final outcome variable, Appreciation for Life. The fifth and final hierarchical multiple regression revealed that in Block 1, Current Impact of Life Stressors contributed significantly to the regression model, $F (1,200) = 45.524, p < .001$ and accounted for 18.5% of the variation in the PTG outcome variable, Appreciation for Life. Examining standardized beta coefficients demonstrated Current Impact of Life Stressors as having a moderate, positive effect on the outcome variable ($\beta = .431, p < .001$). Incorporating the Number of Life Stressor variable in
Block 2 explained an additional 1.8% of variation in Appreciation for Life; however, this change in R² was not significant, F (2,199) = 25.399. Similarly, both trauma-related variables in Block 2 were not significant in predicting Appreciation for Life, despite their weak to moderate positive effects.

Adding Attachment Orientation to Mother-Figure and Father-Figure to Block 3 of the regression model explained an additional 1.1%. This statistic was also found not to be significant, F (4,197) = 13.408. Analysis of standardized beta coefficients also indicated no significant variable effects in Block 3. Similar to other models, however, a difference in effect direction was observed in the two Parental-Figures variables. Attachment Orientation to Mother-Figure specifically had a weak and positive effect at .132 and Father-Figure had a weak, negative effect at -.089 to Appreciation for Life. Lastly, the inclusion of Attachment Orientation to Romantic Partner and Close Friend in Block 4 explained a significant 11.4% of the variation in Appreciation for Life, with F (6,195) = 15.829, p < .001.

All six independent variables included together in Block 4 accounted for 32.8% of the variance in Appreciation for Life. Examining each of these independent variables in Block 4 of the regression model indicated that Attachment Orientation to Close Friend was the sole significant predictor of Appreciation for Life. The effect of Attachment Orientation to Close Friend on the outcome variable was moderate and negative (β = -.315, p < .001).

Analysis of Residuals

After running the statistical analysis, it was important to evaluate how well the regression models fit the data and determine if the data meet the assumptions of the models. There are a variety of statistical tests to evaluate deviations from model assumptions. Residuals plots, partial regression scatterplots, and histograms were used in the current study, allowing for the confirmation of linearity assumptions for each of the outcome variables.
Pallant (2007) notes that residuals represent the differences between observed and predicted values, and can confirm assumptions for normality, linearity, and homoscedasticity. One way this can be achieved is by inspecting a normal probability plot (P-P) of the regression standardized residual. A normal P-P plot contains points that fall along a reasonably straight diagonal line from bottom left to top right, suggesting no major deviations from normality. Points contained by each of the five outcome variables (Relating to Others, New Possibilities, Personal Strengths, Spiritual Change, and Appreciation for Life) fell along this straight, diagonal line with only the occasional minor divergence. The slight departure from the diagonal line was observed to some extent in all outcome variables, but was most pronounced in Relating to Others. In this outcome variable, variation appeared around lower-level values, and then readjusted to meet the diagonal line. Despite the minor variation in Relating to Others, the visuals of each outcome variable still suggested no major deviations from normality, and are therefore likely sufficient.

In the partial regression scatterplot of the standardized residuals, residuals should be approximately rectangular in its distribution with most scores centered around the “0” point (Pallant, 2007). Scatterplots examined residuals for each independent and dependent variable and illustrated a random and rectangular output of points that centered around “0,” with the exception of outcome variables relation to the independent variable, Attachment Orientation to Friend. This was more clearly observed in the outcome variables, New Possibilities, Personal Strengths, and Appreciation for Life, which had points being slightly off-centered and falling closer to “-.25.” Each of the five outcome variables still maintained an unbiased visual, with the exception of New Possibilities that appeared to have a weak, negative sloping pattern. The
random and rectangular points of all other variables suggested no major violations of the models’ assumptions.

An exploration of histograms supported the approximate normal distribution for all variables, showing minimal residuals around the distribution. Most of these slight variations in the outcome variables illustrated points that focused again around lower-level values compared to the higher values that fell closer to the normal curve. This subtle indication of variation was specifically observed in the outcome variables, Relating to Others and New Possibilities. Besides the brief deviation observed primarily in these two outcome variables, remaining points fell reasonably within a normal distribution. The other variables, consisting of Personal Strengths, Spiritual Change, and Appreciation for Life, also demonstrated support for the approximate normal distribution.

An analysis of residuals examined residual plots, partial regression scatterplots, and histograms to evaluate potential deviation from the models’ assumptions. After conducting residual analyses for each of the five outcome variables and observing only minor variations, it was determined that the regression models reasonably fit the data and that the data meets the assumptions of the models soundly.
CHAPTER FIVE: DISCUSSION

This dissertation explores the effects of attachment orientations to several interpersonal targets on the development of PTG-related factors in a sample of undergraduate college students who reported various experiences and perceptions of life stressors. In this concluding chapter, I summarize the major findings of this quantitative study, discuss the contributions and implications this research could have on a variety of mental health professions, review the limitations and strengths of this study, and suggest numerous ideas for future research.

Discussion of the Results

The impacts of traumatic exposure on the general population, including survivors of natural disasters, domestic violence, loss, and sexual abuse, have received much attention in research and clinical practice (Armstrong, Shakespeare-Finch, & Shochet, 2014). However, the factors that may contribute to PTG have not yet been authoritatively established. What needs to be understood is the factors that account for individual differences in post-trauma outcomes, and how interpersonal bonding within the context of various relationships might influence these outcomes. I aimed to address this gap in literature in the current research study.

Calhoun and Tedeschi’s (2013) model of PTG suggests that the influence of social support on post-trauma outcomes may be mediated by other variables such as self-disclosure or moderated by the shattering of core beliefs. According to their model, common elements often observed in individuals experiencing PTG include a deepening of relationships, an improved sense of self and ability to express emotions, and a changed philosophy of life. The change in self-perception may include an increased sense of vulnerability, but is accompanied by an increased in one’s sense of being capable and self-reliant. Finally, some individuals report a
greater appreciation for life, new life priorities, and positive changes in spiritual or existential meaning (Tedeschi & Calhoun, 1999).

The current study expands this model by emphasizing variations in social support. Differences among attachments to various interpersonal targets are indicators that it is the features of secure relationship, and not just social support in general, that promote corrective interpersonal learning experiences that positively influence post-trauma outcomes. A research model of PTG was employed to investigate the effects of Current Impact of Life Stressors, Number of Life Stressors, perceived Attachment Orientation to Parental Figures, and perceived Attachment Orientation to Romantic Partners and Close Friends on five individual PTG-related factors. These PTG factors included Relating to Others, New Possibilities, Personal Strengths, Spiritual Change, and Appreciation for Life.

**Bonding and Post-Traumatic Growth**

Incorporating Attachment Orientation to Romantic Partners and Close Friends proved to be a significant contribution to the variation in each of the six PTG factors. Together, Romantic Partners and Close Friends explained 10.7% of the total 27.8% variance in Relating to Others, 16.7% of the total 39% variance in New Possibilities, 13.8% of the total 37.6% variance in Personal Strengths, 8.6% of the total 19.7% variance in Spirituality Change, and 11.4% of the total 32.8% variance in Appreciation for Life. Of greater importance, however, was the meaningful contribution of Attachment Orientation of Close Friends, which accounted for the majority of the effect on each PTG factor in the present study. While research supports the vital importance of close and dependable adult relationships (O’Connor and Alklit, 2008), studies have not examined the unique qualities of friendships that may serve as corrective interpersonal learning experiences that nurture positive change.
In the current study, additional major findings relating to Attachment Orientation to Close Friends particularly involved the significant associations with PTG domains. Attachment Orientation to Close Friends specifically indicated a negative correlation with all PTG domains. This negative correlation indicates that students were more likely to exhibit stronger abilities in relating to others, identifying new possibilities, nurturing personal strengths, enhancing spiritual change, and experiencing a greater appreciation for life if they indicated friendships characterized by quality dependability, closeness, and minimal avoidance or anxiety.

Findings in the current study strongly support the role of dependable, close friendships to promote the trajectory toward PTG. Supporting research indicates that perceptions of transformative growth resulting from social engagement influences the likelihood that one will engage in health coping in the face of adversity (DiMatteo et al., 2007). Similar to findings related to friendships in the current study, the literature indicates that intimacy and closeness are important features in emotionally connected adult relationships and are needed to nurture both psychological and biological adaptation after a traumatic event (Bogar & Hulse-Killac, 2006; Olff, 2012; Williams, 2001). Finally, research demonstrates how close relationships help to cultivate feelings of trust and safety, enhancing a sense of belongingness and predicting the potential for PTG by decreasing the stress response system and contributing to interpersonal connection (Feder et al., 2009). The current study finds a similar phenomenon in findings relating to friendship and positive change.

While Attachment Orientations to either Parental Figure were not significant in the final regression equation, Attachment Orientation to Mother-Figure did demonstrate a positive correlation with all PTG domains and was the stronger predictor of PTG than Attachment Orientation to Father-Figure. This indicated that participants who developed avoidant or anxious
attachment styles to their Mother-Figure from childhood were more likely to develop PTG qualities by their college years. Participants who developed secure attachments to their Mother-Figures were less likely to develop PTG. A potential explanation for this finding is the tendency for children raised in a warm and supportive home environment to experience more safety, and therefore perceive life stressors less severely. Students with a secure relationship to their Mother-Figure consequently experienced less traumatic stress, which is a prerequisite to developing PTG.

Christopher (2004) supports this explanation with research findings that indicate trauma psychopathology results from poor social support and maladaptive coping that disrupted the stress response system, thus establishing the foundation for the individuals who experienced positive change resulting from life stressors. Research by Ditzen et al. (2010) adds that individuals raised with quality attachments are often found to exhibit lower levels of biological stress responsivity measured by cortisol and heart rate levels following exposure to stress. It is also well established in research that stressful early childhood experiences and dysfunctional parental attachment support the developmental pathways to poor mental health, interpersonal engagement problems in adulthood, and poor coping strategies (Berry et al., 2007; Gajwani et al., 2013, & Gumley et al., 2013, Kesslet et al., 2010; Michail & Birchwood, 2014). Findings in the current study support the concept that despite traumatic childhood experiences and insecure attachments to parental figures, resiliency and transformative growth is possible. Corrective interpersonal learning experiences, such as quality friendships, could provide the context needed to nurture a more positive trajectory.
**Trauma Exposure and Post-Traumatic Growth**

Impact of Life Stressors proved to be an important consideration to control for, as it explained a foundational 11.7% of the variation in Relating to Others, 19.1% of the variation in New Possibilities, 18.2% of the variation in Personal Strengths, 6.6% of the variation in Spiritual Change, and 18.5% of the variation in Appreciation for Life. A study conducted by Bradford (2002) supports these findings by demonstrating a link between current perceptions of trauma and trauma recovery. Participants in Bradford’s study were able to reflect on numerous ways they experienced transitional growth and positive change, despite continuing to undergo significant transitions or overwhelming difficulties. Growth was marked by reported experiences of staying resolute toward their treatment, strategizing their recovery, increasing their self-understanding, and improving their ability to be with others.

Additionally, it has increasingly been established that one’s subjective interpretation of trauma is more influential in determining post-trauma outcomes (Currier, Holland, & Neimeyer, 2006). It is, therefore, important to consider the potential of the current impact of a traumatic event may not necessarily be a negative rumination. Higher scores on the Current Impact of Life Stressors variable in the present study may be initially linked to PTG factors because some participants may be reflecting on positive changes they’ve experienced as a result of their adversity. Research has demonstrated, for example, that meaning-making and thoughtful changes in higher order assumptions regarding interpersonal trust and self-worth in the aftermath of trauma are likely to result in PTG (Irish et al., 2008; Tedeschi & Calhoun, 1995).

A potential intercollinearity was noted between the two trauma-related variables. This could explain why the initial significant influence of Current Impact of Life Stressors diminished once the Number of Life Stressors was introduced into the equation. Controlling for Current
Impact of Life Stressors, the Number of Life Stressors proved to be a significant predictor of most of the PTG domains in the final regression equations, including Relating to Others, Personal Strengths, and Spiritual Change.

Research is clear on the effects of repeated trauma exposure on the development of traumatic stress. Multiple studies have demonstrated increased severity of emotional dysregulation, dissociation, problematic memory integration, isolation, PTSD, and co-occurring psychiatric disorders in individuals who are victims of interpersonal trauma compared to individuals who either experienced one type of trauma or no trauma (Arata et al., 2006; Cloitre et al., 2009; Fowler, 2013; Putnam, 2003; Schumm et al., 2006; Van der Kolk, 2002; Wilkinson, 2003). Repeated traumatization is of particular concern because of the complexity and severity of subsequent psychological and physiological effects (Hodges et al., 2013).

While repeated traumatization significantly influences traumatic stress, research also supports findings of the current study that found the number of stressful life events relate to PTG. The very nature of PTG is the process in which one overcomes adversities and experiences transformative growth after a period of distress (Tedeschi & Calhoun, 2004; Zoellner, & Maercker, 2006). The social, emotional, mental, and spiritual transformation some individuals experience as a result of overcoming adverse experiences is evident in the experiences of current study participants and in findings of other research (Calhoun, Cann, Tedeschi, & McMillan, 2000; Joseph & Linley, 2006; Zoeller & Maercker, 2006).

At the beginning of the analyses, I used inferential statistics to examine trauma-related variables relation to PTG factors. Findings indicated that the variables relating to trauma exposure, Current Impact of Life Stressors and the Number of Life Stressors, were positively associated with all PTG factors (Relating to Others, New Possibilities, Personal Strengths,
Spirituality Change, Appreciation for Life). Participants were more likely to cultivate PTG qualities if they experienced multiple adversities and if those adversities continued to impact their life. Consistent with the model of PTG by Calhoun and Tedeschi (2013), the greater the personal proximity and emotional relevance of trauma in a personal context, the greater the stimulation of cognitive processes and the active reconstruction of one’s assumptions about their worldview. In other words, without the experience of a seismic event, there is no catalyst to engage in the strategies that nurture PTG factors. Repeated exposure to stressful events, as found by Armstrong et al. (2014), could have served to prepare these student participants for potential life stressors and instill the protective features needed to promote the positive change they indicated.

Perceptions of support have been shown in studies to be higher in those who have overcome significant traumatic stress (Mitani, Fujita, Nakata, & Shirakawa, 2006). Calhoun and Tedeschi (2013) add that interpersonal bonding may eventually promote deliberate cognitive processing and active rebuilding of assumptions following a traumatic experience (Calhoun & Tedeschi, 2013). It appears as though in the current study, PTG is not necessarily a direct link to life stressors, but more so a process in which life stressors are the foundation, and secure adult relationships, like friendships, are a catalyst for positive change and transformative growth.

**Implications**

Clinical practitioners, educators, and other professionals in higher education would greatly benefit from the knowledge of how to assist students with a history of trauma and reinforce the positive change needed for transformative growth.
Clinical Counselors

Findings in this study demonstrate the need for clinical counselors to introduce resilience-oriented, relationship-centered interventions into their services. Counselors can promote PTG by incorporating workshops and psychoeducational opportunities in their direct clinical care to raise awareness of supportive resources on campus. Such endeavors could contribute to the elimination of the negative stigma regarding mental health, and provide a safer environment for traumatized students to reach out for services.

It is imperative for counselors to be trauma-informed and strength-based in their clinical approach. Results of the current study highlighted the importance of close, dependable social network, specifically stressing the positive impact quality friendships can have on transformative change. Social connection and peer support is therefore vital to encourage as part of trauma-informed care. Considering interpersonal engagement as part of trauma healing, counselors need to also familiarize themselves with the multidimensional experiences of trauma survivors and how to advocate for program development that focus on campus connection and social support. When working with trauma survivors, counselors should evaluate the ways these students obtain social support and how they cope with stressful events in order to identify risk and protective factors of serious life stressors. Therefore, the first step for counselors in the discussion of resilience and positive change may be to increase awareness of social support, resources, and coping strategies. With findings of this study, counselors would be able to help more effectively promote resilience-oriented interventions that involve strength-based strategies and incorporation of social engagement.
Counselor Educators

It is the responsibility of counselor educators to prepare counselors-in-training for entering the mental health field and becoming competent, ethical, and just professionals. One of the main objectives for counselor educators is helping counselors match counseling strategies with both personal values and those of their prospective clients, all of whom come from diverse backgrounds (Archer & McCarthy, 2007). However, few counselor education programs provide training outlets that formally address trauma.

Due to the high rate of trauma and the subjective nature of traumatic stress, it is essential for training programs to implement a multidimensional educational model to prepare counselor-trainees with resources, effective training strategies, and knowledge of treatment needs. A great deal of attention must go into considering how to best instill the skills needed to work with this population within counselor training. Counselors working with traumatized clients should, at minimum, be trained in diagnostic criteria and referral procedures, be aware of the effective treatment options for trauma-informed care, and have an understanding of appropriate assessment considerations, criteria beyond that which a counselor generalist can offer (Burke & Carruth, 2012). Counselor educators can address these needs by nurturing trauma awareness, multicultural sensitivity, and knowledge of comorbidity in counselor trainees. By addressing the unique training needs for novice counselors who desire to work with trauma survivors, it will be possible to adequately prepare them with the foundation to work with this population.

The current research findings would be specifically helpful for counselor educators to present accurate and sensitive information about such issues and would help identify effective resources that novice counselors can employ when working with trauma survivors. The findings of this study — on the impact of attachment orientations with several interpersonal targets on the
development of PTG in a sample of college students — could be incorporated in many courses throughout the counselor education program and graduate curriculum. Counseling theory, techniques, human development, and family counseling would be most effective in assisting trainees to obtain an awareness and knowledge about the issues trauma survivors face.

**Higher Education Professionals**

Not only for clinical counselors, the trauma-informed workshops and psychoeducational opportunities would be useful for other professional staff and administrators in higher education (e.g., Counseling and Psychology Services, Office of Students Affairs, Resident Life, Womens’ Resource Center) and would better their ability to assist students. Programing could include:

- Didactic presentations
- Dynamic guest speakers
- Participant presentations
- Semi-structured processing groups
- Role-plays and videos
- Case examples and live testimonials
- Skill acquisition
- Reflective assignments from participants

With such programs, higher education professionals could increase student awareness, create a sense of campus safety and acceptance, and reach out to students who need appropriate assistance. With findings of the current study, staff and administration in higher education can also collaborate with community resources (e.g., community support groups, churches, mental health counseling) to create an environment that is embracing and accepting of students with trauma histories. In undertaking such projects, universities and colleges can promote a resilience-oriented campus and encourage students to be open to seeking support and connection.
Limitations of the Study

While innovative and informative in its findings and implications, this study contains several limitations that must be noted. First, it targeted a very specific population—undergraduate college students at one Mid-Atlantic university. The study also lacked strong diversity in its sample with over 70% of participants being women and over 65% identifying as white/Caucasian. The sample, therefore, limits generalizability. Second, self-report measures were employed to explore the research questions in the current study. While self-report measures allowed students to freely indicate their own personal experiences and perceptions, no observational or interview data was collected in order to add to the quality of an individual’s experiences. Additionally, most self-report measures were administered during class visitations, which may have impacted participants’ attention to the items and the pace in which they responded to the instruments.

Third, there were a few obstacles with data analysis. Specifically, most of the variables required transformation procedures. Unfortunately, square root transformations were not successful in reaching the required coefficient for normality for the variables Attachment Orientation to Mother-Figure, Father-Figure, and Close Friend. Three square root transformations were helpful in achieving skewness coefficients closer to the recommended value. However, the skewed data may have an impact on the results of models and findings of the study. Additionally, there was a strong correlation between the two trauma-related variables, despite both being important in the research model. The order in which these were included in the regression model may not have been important. Lastly, it is important to consider the possibility that the PTG research model proposed in the current study may have other predictors related to trauma and attachment that were not included.
Recommendations for Future Research

This research study brought to light many new considerations for future research and trauma-informed treatment. Of most importance is the potential for corrective interpersonal learning experiences, despite early childhood adversities, insecure attachments to caregivers, and trauma exposure. A single, generalized attachment style that is often portrayed in attachment literature is unfortunately oversimplified considering the potential variations and complexities in adult relationships that were presented in this study. Findings from the current study indicate that the presence of interpersonal support for college students are specifically identified as important components of resiliency and PTG. Future research should also examine the role of social resources and campus connection in the promotion of PTG.

The greatest theoretical challenge to mental health researchers is to develop a new conceptualization of trauma that integrates traumatic stress and traumatic growth within a single conceptual framework that can guide clinical practice (Seligman & Csikszentmihalyi, M., 2000). I propose that future research should promote an extension to the current model of PTG that addresses the potential for variation in attachment orientations and the possibility for other relationships to possess the characteristics needed to mediate trauma outcomes on the development of PTG. It is vital to learn more about the internal and external qualities, resources, and protective factors that are features of transformative growth, and how they may be products of meaningful bonds with friends, family, and loved ones. Future research should also incorporate qualitative approaches that focus on the reconstruction of identity and the process of meaning-making that occurs with PTG.

Additional directions for future research is vast. This study demonstrated that both internal and external resources that contribute to perceived positive change are cultivated within the context of safe, supportive, and secure friendships. Future studies should continue examining
the effects of bonding with various relationships on the association between trauma and PTG to
determine if findings from the current study are similar across different populations. Studies
should also investigate personality characteristics, which may not be fully explained by
attachment styles, to determine how these individual variation may impact resiliency and PTG.
Enhancing the mental health field with more causal studies will also be beneficial in determining
what potential variables are moderating or mediating the impacts of trauma. This direction could
also include considerations of dimensions of stressful life events, or types and complexity of
trauma experienced. Future research is also expected to highlight the importance of examining
multi-level variables when evaluating the relationship of early childhood experiences and
prolonged abuse to young adult adaptive functioning. Interventions aimed at facilitating
corrective interpersonal experiences that increase oxytocin release could moderate the stress
response system and lessen the severity of trauma symptomology. Finally, future studies should
enhance resilience-oriented research in order to move the field away from problem-focused
pathology to strength-based positive psychology.

The current study is important to research and the mental health profession in that it
identifies the possibility of a quality interpersonal source, like a close friend, providing the
context and support needed to nurture positive adaptation and the corrective factors needed to
experience PTG. It provides a foundation for future research considerations and informs the
development of evidenced-based trauma care.
References


Ulrich, B., Wolfaardt, B., & Joyce, A. (2005). The quality of object relations (QOR) scale, the reciprocal attachment questionnaire (RAQ), and psychotherapy outcome. *University of Alberta Health Sciences Journal, 2*(2), 14-19.


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CONSENT FOR RESEARCH

The Pennsylvania State University

Title of Project: Corrective Interpersonal Experiences in Adult Bonding in Promoting Post-Traumatic Growth in a Sample of College Students

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University Park, PA 16802

Telephone Number: (540) 908-0881

Advisor: Dr. JoLynn Carney

Advisor Telephone Number: (814) 863-2404

We are asking you to be in a research study. This form gives you information about the research. You must be an undergraduate student at Penn State University, and between the ages of 18 and 23 to take part in this research study. Due to the limited ability to translate questionnaires and perform interviews in multiple languages, participants must also be able to read, write, and speak in English fluently. Whether or not you take part is up to you. You can choose not to take part. You can agree to take part and later change your mind. Your decision will not be held against you. Please ask questions about anything that is unclear to you and take your time to make your choice.
1. **Why is this research study being done?**

The purpose of this research is to better understand how interpersonal relationships may relate to the development of positive changes or transformative growth after experiencing a stressful life event. I am asking for your participation because I am specifically interested in the experiences and resilience of the college-age population. Approximately 250 Penn State undergraduate students will participate in this study.

2. **What will happen in this research study?**

You will be asked to complete a demographic form and three questionnaires on stressful experiences, relationships, and personal growth. The questionnaire packet is expected to take 15-20 minutes to complete. You are free to skip any questions that you are uncomfortable answering. After completion of the packet, you will have the opportunity to indicate whether you would like to volunteer for an hour-long follow-up interview discussing how your meaningful relationships influenced your life, and how it helped you overcome hardships. A random sample of those who are willing to volunteer for the follow-up interview will be contacted at a later time to schedule a meeting with the principal investigator, Laura Copley. Data will be stored for 5 years before being destroyed. Identifying information will not be recorded and volunteers will not be contacted for any future follow-up research.

3. **What are the risks and possible discomforts from being in this research study?**

There is minimal to no risk in participating in this research beyond that experienced in everyday life. Some of the questions relating to stressful life may cause some psychological discomfort. If you feel any distress and need additional support, please speak to your facilitator and/or contact the principal investigator, Laura Copley. Additionally, if you feel the need for further support as a result of participation in this research, you may call PSU’s Counseling and Psychological Services at (814) 863-0395 for clinical services or referrals. There is minimal risk to loss of privacy and confidentiality, and thorough precautions will be taken to prevent this from happening.

4. **What are the possible benefits from being in this research study?**

4a. **What are the possible benefits to you?**

The benefits to you include increased insight into your own relationships and resiliency.

4b. **What are the possible benefits to others?**

The benefits to others from being in this research study include advancing new clinical research and mental health services, and helping the field understand the ways in which relationships empower positive change after a hardship. Participation will be useful to society and the helping profession.

5. **What other options are available instead of being in this research study?**

You may decide not to participate in this research study.
6. How long will you take part in this research study?

If you only participate in completing the questionnaire packet, not additional time is required on your part. If you agree to take part in the follow-up portion, it will take you about one hour to complete the interview. You will only be asked to attend an interview session once.

7. How will your privacy and confidentiality be protected if you decide to take part in this research study?

Efforts will be made to limit the use and sharing of your personal research information to people who have a need to review this information.

- Your research records will be labeled with an alternative numerical identifier, which will not be associated with any personally identifiable information. A master list of numerical codes will also be protected. These documents and recordings will be kept in a locked box and secured in a storage facility in Harrisonburg, VA.

In the event of any publication or presentation resulting from the research, no personally identifiable information will be shared.

We will do our best to keep your participation in this research study confidential to the extent permitted by law. However, it is possible that other people may find out about your participation in this research study. For example, the following people/groups may check and copy records about this research.

- The Office for Human Research Protections in the U. S. Department of Health and Human Services
- The Institutional Review Board (a committee that reviews and approves research studies) and
- The Office for Research Protections.

Some of these records could contain information that personally identifies you. Reasonable efforts will be made to keep the personal information in your research record private. However, absolute confidentiality cannot be guaranteed.

There are limits to research confidentiality. The primary investigator, Laura Copley, is a mandated reporter, and has a duty to report known or suspected incidents of child and elderly abuse or neglect to appropriate authorities, including law enforcement.

8. Will you be paid or receive credit to take part in this research study?

Participants who volunteer to participate in the entire study, including the questionnaire packet and follow-up interview, will be entered into a drawing for a $50 VISA Gift Card.
9. **What are your rights if you take part in this research study?**

Taking part in this research study is voluntary.

- You do not have to be in this research.
- If you choose to be in this research, you have the right to stop at any time.
- If you decide not to be in this research or if you decide to stop at a later date, there will be no penalty or loss of benefits to which you are entitled.
- During the course of the research, you will be provided with any new information that may affect your wellbeing or your decision to continue participating in this research.

10. **If you have questions or concerns about this research study, whom should you call?**

You have a right to ask questions. Please call the principal investigator, Laura Copley, at (540) 908-0881 if you:

- Have questions, complaints or concerns about the research.
- Believe you may have been harmed by being in the research study.

You may also contact the Office for Research Protections at (814) 865-1775, ORProtections@psu.edu if you:

- Have questions regarding your rights as a person in a research study.
- Have concerns or general questions about the research.
- You may also call this number if you cannot reach the research team or wish to talk to someone else about any concerns related to the research.

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**INFORMED CONSENT TO TAKE PART IN RESEARCH**

*Your participation implies your voluntary consent to participate in the research. Please keep a copy of this form for your records.*
Dear (insert name).

My name is Laura Copley, and I am a doctoral candidate completing my dissertation through the Ph.D. Counselor Education program at Penn State. I am writing this e-mail to network with instructors and other campus resource individuals who would be interested in having me visit a class or organization meeting to discuss my study and recruit undergraduate participants. The purpose of the study is to determine how interpersonal relationships impact positive growth after stressful life events. Undergraduates who volunteer will be asked to complete a demographics form and a questionnaire packet. If willing to support this study, please respond to this e-mail indicating what days and times you have available until early March.

Thank you for your time.

Laura Anne Copley, LPC
Appendix C
Questionnaire Packet

Part 1: Demographic Questionnaire

Please fill out as completely as you can. All responses will be kept confidential.

1. Today’s date __________

2. Gender: _____Male _____Female _____ Transgender _____ Other (check one)

3. Age: _______ (in years)

4. Cultural Identity (check one or all that apply):
   _____ White/Caucasian
   _____ Hispanic/Latino(a)
   _____ African American/Black
   _____ Native American
   _____ Asian American/Pacific Islander
   Specify Other: _____________

5. What is your major? ________________________________________________

6. Current relationship status: (select one)
   _____ Single/never married
   _____ Married/domestic partnership/civil union
   _____ Separated
   _____ Divorced
   _____ Widowed
   _____ Living with a partner

7. Sexual orientation:
   _____ strait/heterosexual
   _____ lesbian/gay
   _____ bisexual
   _____ other (specify) _______________________

8. What words relate most to your childhood relationship with your parent or primary caregiver?
   a. Secure, consistent, comforting, warm, engaging
   b. Ambivalent, distraught, wary, confusing, distressing
   c. Avoidant, resistant, apprehensive, distant, disconnected
   d. Disorganized, unstable, insecure, chaotic, disorienting

9. Who do you identify as your closest relationship?
   _____ sibling _____ friend _____ mentor _____ parent/caregiver _____ family member
   _____ spouse _____ romantic partner _____ other (specify other) _______________________

10. On a scale of 1-7, how connected do you currently feel to campus resources and support services?
    1  2  3  4  5  6  7
    No connection  Strong connection

11. On a scale of 1-7 (not supported to extremely supported), currently how supported do you feel by your peers, friends, and/or romantic partners?
    1  2  3  4  5  6  7
    Not supported  Extremely supported
Part 2: Questionnaires

This questionnaire is designed to assess the way in which you mentally represent important people in your life. You'll be asked to answer questions about your parents, your romantic partners, and your friends. Please indicate the extent to which you agree or disagree with each statement by circling a number for each item.

Please answer the following questions about your mother or a mother-like figure

1.) It helps to turn to this person in times of need.
   strongly disagree 1 2 3 4 5 6 7 strongly agree

2.) I usually discuss my problems and concerns with this person.
   strongly disagree 1 2 3 4 5 6 7 strongly agree

3.) I talk things over with this person.
   strongly disagree 1 2 3 4 5 6 7 strongly agree

4.) I find it easy to depend on this person.
   strongly disagree 1 2 3 4 5 6 7 strongly agree

5.) I don't feel comfortable opening up to this person.
   strongly disagree 1 2 3 4 5 6 7 strongly agree

6.) I prefer not to show this person how I feel deep down.
   strongly disagree 1 2 3 4 5 6 7 strongly agree

7.) I often worry that this person doesn't really care for me.
   strongly disagree 1 2 3 4 5 6 7 strongly agree

8.) I'm afraid that this person may abandon me.
   strongly disagree 1 2 3 4 5 6 7 strongly agree

9.) I worry that this person won't care about me as much as I care about him or her.
   strongly disagree 1 2 3 4 5 6 7 strongly agree

Please answer the following questions about your father or a father-like figure

1.) It helps to turn to this person in times of need.
   strongly disagree 1 2 3 4 5 6 7 strongly agree

2.) I usually discuss my problems and concerns with this person.
   strongly disagree 1 2 3 4 5 6 7 strongly agree

3.) I talk things over with this person.
   strongly disagree 1 2 3 4 5 6 7 strongly agree

4.) I find it easy to depend on this person.
   strongly disagree 1 2 3 4 5 6 7 strongly agree
5.) I don't feel comfortable opening up to this person.
   strongly disagree  1  2  3  4  5  6  7  strongly agree

6.) I prefer not to show this person how I feel deep down.
   strongly disagree  1  2  3  4  5  6  7  strongly agree

7.) I often worry that this person doesn't really care for me.
   strongly disagree  1  2  3  4  5  6  7  strongly agree

8.) I'm afraid that this person may abandon me.
   strongly disagree  1  2  3  4  5  6  7  strongly agree

9. I worry that this person won't care about me as much as I care about him or her.
   strongly disagree  1  2  3  4  5  6  7  strongly agree

**Please answer the following questions about your dating or marital partner.**

*Note: If you are not currently in a dating or marital relationship with someone, answer these questions with respect to a former partner or a relationship that you would like to have with someone.*

1.) It helps to turn to this person in times of need.
   strongly disagree  1  2  3  4  5  6  7  strongly agree

2.) I usually discuss my problems and concerns with this person.
   strongly disagree  1  2  3  4  5  6  7  strongly agree

3.) I talk things over with this person.
   strongly disagree  1  2  3  4  5  6  7  strongly agree

4.) I find it easy to depend on this person.
   strongly disagree  1  2  3  4  5  6  7  strongly agree

5.) I don't feel comfortable opening up to this person.
   strongly disagree  1  2  3  4  5  6  7  strongly agree

6.) I prefer not to show this person how I feel deep down.
   strongly disagree  1  2  3  4  5  6  7  strongly agree

7.) I often worry that this person doesn't really care for me.
   strongly disagree  1  2  3  4  5  6  7  strongly agree

8.) I'm afraid that this person may abandon me.
   strongly disagree  1  2  3  4  5  6  7  strongly agree

9. I worry that this person won't care about me as much as I care about him or her.
   strongly disagree  1  2  3  4  5  6  7  strongly agree
Please answer the following questions about your best friend

1.) It helps to turn to this person in times of need.
   strongly disagree 1 2 3 4 5 6 7 strongly agree

2.) I usually discuss my problems and concerns with this person.
   strongly disagree 1 2 3 4 5 6 7 strongly agree

3.) I talk things over with this person.
   strongly disagree 1 2 3 4 5 6 7 strongly agree

4.) I find it easy to depend on this person.
   strongly disagree 1 2 3 4 5 6 7 strongly agree

5.) I don't feel comfortable opening up to this person.
   strongly disagree 1 2 3 4 5 6 7 strongly agree

6.) I prefer not to show this person how I feel deep down.
   strongly disagree 1 2 3 4 5 6 7 strongly agree

7.) I often worry that this person doesn't really care for me.
   strongly disagree 1 2 3 4 5 6 7 strongly agree

8.) I'm afraid that this person may abandon me.
   strongly disagree 1 2 3 4 5 6 7 strongly agree

9.) I worry that this person won't care about me as much as I care about him or her.
   strongly disagree 1 2 3 4 5 6 7 strongly agree
You will be asked some questions about events in your life that are frightening, upsetting, or stressful to most people. Please think back over your whole life when you answer these questions.

Some of these questions may be about upsetting events you don’t usually talk about. Your answers are important, but you do not have to answer any questions that you do not want to.

1.) Have you ever been in a serious disaster (for example, an earthquake, hurricane, large fire, explosion)?
   Yes  No
   a. How old were you when this happened? _______
   b. How old were you when it ended? _______
   c. At the time of the event, did you believe that you or someone else could be killed or seriously harmed? Yes  No
   d. At the time of the event did you experience feelings of intense helplessness, fear, or horror? Yes  No
   e. How much is this affected your life in the past year?
      Not at all  Some  Extremely
      1  2  3  4  5

2.) Have you ever seen a serious accident (for example, a bad car wreck or an on-the-job accident)?
   Yes  No
   a. How old were you when this happened? _______
   b. How old were you when it ended? _______
   c. At the time of the event, did you believe that you or someone else could be killed or seriously harmed? Yes  No
   d. At the time of the event did you experience feelings of intense helplessness, fear, or horror? Yes  No
   e. How much is this affected your life in the past year?
      Not at all  Some  Extremely
      1  2  3  4  5

3.) Have you ever had a very serious accident or accident-related injury (for example, a bad car wreck or an on-the-job accident)?
   Yes  No
   a. How old were you when this happened? _______
   b. How old were you when it ended? _______
   c. At the time of the event, did you believe that you or someone else could be killed or seriously harmed? Yes  No
   d. At the time of the event did you experience feelings of intense helplessness, fear, or horror? Yes  No
   e. How much is this affected your life in the past year?
      Not at all  Some  Extremely
      1  2  3  4  5
4.) Was a close family member ever sent to jail?
   Yes       No
   a. How old were you when this happened?   _______
   b. How old were you when it ended?    _______
   c. At the time of the event, did you believe that you or someone else could be killed or seriously harmed?    Yes     No
   d. At the time of the event did you experience feelings of intense helplessness, fear, or horror?    Yes     No
   e. How much is this affected your life in the past year?
      Not at all        Some        Extremely
      1               2             3             4             5

5.) Have you ever been sent to jail?
   Yes       No
   a. How old were you when this happened?   _______
   b. How old were you when it ended?    _______
   c. At the time of the event, did you believe that you or someone else could be killed or seriously harmed?    Yes     No
   d. At the time of the event did you experience feelings of intense helplessness, fear, or horror?    Yes     No
   e. How much is this affected your life in the past year?
      Not at all        Some        Extremely
      1               2             3             4             5

6.) Were you ever put in foster care or put up for adoption?
   Yes       No
   a. How old were you when this happened?   _______
   b. How old were you when it ended?    _______
   c. At the time of the event, did you believe that you or someone else could be killed or seriously harmed?    Yes     No
   d. At the time of the event did you experience feelings of intense helplessness, fear, or horror?    Yes     No
   e. How much is this affected your life in the past year?
      Not at all        Some        Extremely
      1               2             3             4             5
7.) Did your parents ever separate or divorce while you were living with them?
   
   Yes   No
   
   a. How old were you when this happened?     
   b. How old were you when it ended?     
   c. At the time of the event, did you believe that you or someone else could be killed or seriously 
   harmed? Yes   No 
   d. At the time of the event did you experience feelings of intense helplessness, fear, or horror? 
   Yes   No 
   e. How much is this affected your life in the past year? 
   Not at all   Some   Extremely 
   1   2   3   4   5 

8.) Have you ever been separated or divorced?
   
   Yes   No
   
   a. How old were you when this happened?     
   b. How old were you when it ended?     
   c. At the time of the event, did you believe that you or someone else could be killed or seriously 
   harmed? Yes   No 
   d. At the time of the event did you experience feelings of intense helplessness, fear, or horror? 
   Yes   No 
   e. How much is this affected your life in the past year? 
   Not at all   Some   Extremely 
   1   2   3   4   5 

9.) Have you ever had serious money problems (for example, not enough money for food or place to 
   live)?
   
   Yes   No
   
   a. How old were you when this happened?     
   b. How old were you when it ended?     
   c. At the time of the event, did you believe that you or someone else could be killed or seriously 
   harmed? Yes   No 
   d. At the time of the event did you experience feelings of intense helplessness, fear, or horror? 
   Yes   No 
   e. How much is this affected your life in the past year? 
   Not at all   Some   Extremely 
   1   2   3   4   5
10.) Have you ever had a very serious physical or mental illness (for example, cancer, heart attack, serious operation, felt like killing yourself, hospitalized because of nerve problems)?
   Yes   No
   a. How old were you when this happened?   _______
   b. How old were you when it ended?   _______
   c. At the time of the event, did you believe that you or someone else could be killed or seriously harmed?   Yes   No
   d. At the time of the event did you experience feelings of intense helplessness, fear, or horror?   Yes   No
   e. How much is this affected your life in the past year?
      Not at all   Some   Extremely
      1   2   3   4   5

11.) Have you ever been emotionally abused or neglected (for example, being frequently shamed, embarrassed, ignored, or repeatedly told that you were "no good")?
   Yes   No
   a. How old were you when this happened?   _______
   b. How old were you when it ended?   _______
   c. At the time of the event, did you believe that you or someone else could be killed or seriously harmed?   Yes   No
   d. At the time of the event did you experience feelings of intense helplessness, fear, or horror?   Yes   No
   e. How much is this affected your life in the past year?
      Not at all   Some   Extremely
      1   2   3   4   5

12.) Have you ever been physically neglected (for example, not fed, not properly clothed, or left to take care of yourself when you were too young or ill)?
   Yes   No
   a. How old were you when this happened?   _______
   b. How old were you when it ended?   _______
   c. At the time of the event, did you believe that you or someone else could be killed or seriously harmed?   Yes   No
   d. At the time of the event did you experience feelings of intense helplessness, fear, or horror?   Yes   No
   e. How much is this affected your life in the past year?
      Not at all   Some   Extremely
      1   2   3   4   5
13.) WOMEN ONLY: Have you ever had an abortion or miscarriage (lost your baby)?
   Yes  No
   a. How old were you when this happened?  _______
   b. How old were you when it ended?  _______
   c. At the time of the event, did you believe that you or someone else could be killed or seriously harmed?  Yes  No
   d. At the time of the event did you experience feelings of intense helplessness, fear, or horror?  Yes  No
   e. How much is this affected your life in the past year?
      Not at all  Some  Extremely
      1  2  3  4  5

14.) Have you ever been separated from your child against your will (for example, the loss of custody or visitation or kidnapping)?
   Yes  No
   a. How old were you when this happened?  _______
   b. How old were you when it ended?  _______
   c. At the time of the event, did you believe that you or someone else could be killed or seriously harmed?  Yes  No
   d. At the time of the event did you experience feelings of intense helplessness, fear, or horror?  Yes  No
   e. How much is this affected your life in the past year?
      Not at all  Some  Extremely
      1  2  3  4  5

15.) Has a baby or child of yours ever had a severe physical or mental handicap (for example, mentally retarded, birth defects, can't hear, see, walk)?
   Yes  No
   a. How old were you when this happened?  _______
   b. How old were you when it ended?  _______
   c. At the time of the event, did you believe that you or someone else could be killed or seriously harmed?  Yes  No
   d. At the time of the event did you experience feelings of intense helplessness, fear, or horror?  Yes  No
   e. How much is this affected your life in the past year?
      Not at all  Some  Extremely
      1  2  3  4  5
16.) Have you ever been responsible for taking care of someone close to you (not your child) who had a severe physical or mental handicap (for example, cancer, stroke, AIDS, nerve problems, can't hear, see, walk)

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<td>b. How old were you when it ended?</td>
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<td>c. At the time of the event, did you believe that you or someone else could be killed or seriously harmed?</td>
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<tr>
<td>d. At the time of the event did you experience feelings of intense helplessness, fear, or horror?</td>
<td>Yes</td>
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<td>e. How much is this affected your life in the past year?</td>
<td>Not at all</td>
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17.) Has someone close to you died suddenly or unexpectedly (for example, sudden heart attack, murder or suicide)?

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<td>a. How old were you when this happened?</td>
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<td>b. How old were you when it ended?</td>
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<td>c. At the time of the event, did you believe that you or someone else could be killed or seriously harmed?</td>
<td>Yes</td>
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<td>d. At the time of the event did you experience feelings of intense helplessness, fear, or horror?</td>
<td>Yes</td>
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<td>e. How much is this affected your life in the past year?</td>
<td>Not at all</td>
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18.) Has someone close to you died (do NOT include those who died suddenly or unexpectedly)?

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<td>a. How old were you when this happened?</td>
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<td>b. How old were you when it ended?</td>
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<td>c. At the time of the event, did you believe that you or someone else could be killed or seriously harmed?</td>
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<td>d. At the time of the event did you experience feelings of intense helplessness, fear, or horror?</td>
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<td>e. How much is this affected your life in the past year?</td>
<td>Not at all</td>
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19.) When you were young (before age 16) did you ever see violence between family members (for example, hitting, kicking, slapping, punching)?

Yes  No

a. How old were you when this happened?  _______

b. How old were you when it ended?  _______

c. At the time of the event, did you believe that you or someone else could be killed or seriously harmed?  Yes  No

d. At the time of the event did you experience feelings of intense helplessness, fear, or horror?  Yes  No

e. How much is this affected your life in the past year?

Not at all  Some  Extremely

1  2  3  4  5

20.) Have you ever seen a robbery, mugging, or attack taking place?

Yes  No

a. How old were you when this happened?  _______

b. How old were you when it ended?  _______

c. At the time of the event, did you believe that you or someone else could be killed or seriously harmed?  Yes  No

d. At the time of the event did you experience feelings of intense helplessness, fear, or horror?  Yes  No

e. How much is this affected your life in the past year?

Not at all  Some  Extremely

1  2  3  4  5

21.) Have you ever been robbed, mugged, or physically attacked (not sexually) by someone you did not know?

Yes  No

a. How old were you when this happened?  _______

b. How old were you when it ended?  _______

c. At the time of the event, did you believe that you or someone else could be killed or seriously harmed?  Yes  No

d. At the time of the event did you experience feelings of intense helplessness, fear, or horror?  Yes  No

e. How much is this affected your life in the past year?

Not at all  Some  Extremely

1  2  3  4  5
22.) Before age 16, were you ever abused or physically attacked (not sexually) by someone you knew (for example, a parent, boyfriend, or husband, hit, slapped, choked, burned, or beat you up?)

   Yes    No

   a. How old were you when this happened?   ______
   b. How old were you when it ended?   ______
   c. At the time of the event, did you believe that you or someone else could be killed or seriously harmed?  Yes    No
   d. At the time of the event did you experience feelings of intense helplessness, fear, or horror?  Yes    No
   e. How much is this affected your life in the past year?
      Not at all    Some    Extremely
      1    2    3    4    5

23.) After age 16, were you ever abused or physically attacked (not sexually) by someone you knew (for example, a parent, boyfriend, or husband hit, slapped, choked, burned, or beat you up)

   Yes    No

   a. How old were you when this happened?   ______
   b. How old were you when it ended?   ______
   c. At the time of the event, did you believe that you or someone else could be killed or seriously harmed?  Yes    No
   d. At the time of the event did you experience feelings of intense helplessness, fear, or horror?  Yes    No
   e. How much is this affected your life in the past year?
      Not at all    Some    Extremely
      1    2    3    4    5

24.) Have you ever been bothered or harassed by sexual remarks, jokes, or demands for sexual favors by someone at work or school (for example, a coworker, a boss, a customer, another student, a teacher)?

   Yes    No

   a. How old were you when this happened?   ______
   b. How old were you when it ended?   ______
   c. At the time of the event, did you believe that you or someone else could be killed or seriously harmed?  Yes    No
   d. At the time of the event did you experience feelings of intense helplessness, fear, or horror?  Yes    No
   e. How much is this affected your life in the past year?
      Not at all    Some    Extremely
      1    2    3    4    5
25.) Before age 16, were you ever touched or made to touch someone else in a sexual way because he/she forced you in some way or threatened to harm you if you didn't?
   Yes    No
   a. How old were you when this happened?  ________
   b. How old were you when it ended?  ________
   c. At the time of the event, did you believe that you or someone else could be killed or seriously harmed?  Yes  No
   d. At the time of the event did you experience feelings of intense helplessness, fear, or horror?
      Yes  No
   e. How much is this affected your life in the past year?
      Not at all  Some  Extremely
      1  2  3  4  5

26.) After age 16, were you ever touched or made to touch someone else in a sexual way because he/she forced you in some way or threatened to harm you if you didn't?
   Yes    No
   a. How old were you when this happened?  ________
   b. How old were you when it ended?  ________
   c. At the time of the event, did you believe that you or someone else could be killed or seriously harmed?  Yes  No
   d. At the time of the event did you experience feelings of intense helplessness, fear, or horror?
      Yes  No
   e. How much is this affected your life in the past year?
      Not at all  Some  Extremely
      1  2  3  4  5

27.) Before age 16, did you ever have sex (oral, anal, genital) when you didn't want to because someone forced you in some way or threatened to hurt you if you didn't?
   Yes    No
   a. How old were you when this happened?  ________
   b. How old were you when it ended?  ________
   c. At the time of the event, did you believe that you or someone else could be killed or seriously harmed?  Yes  No
   d. At the time of the event did you experience feelings of intense helplessness, fear, or horror?
      Yes  No
   e. How much is this affected your life in the past year?
      Not at all  Some  Extremely
      1  2  3  4  5
28.) After age 16, did you ever have sex (oral, anal, genital) when you didn't want to because someone forced you in some way or threatened to harm you if you didn't?
   Yes  No
   a. How old were you when this happened?  ______
   b. How old were you when it ended?  ______
   c. At the time of the event, did you believe that you or someone else could be killed or seriously harmed?  Yes  No
   d. At the time of the event did you experience feelings of intense helplessness, fear, or horror?  Yes  No
   e. How much is this affected your life in the past year?
      Not at all  Some  Extremely
      1  2  3  4  5

29.) Are there any events we did not include that you would like to mention?
   Yes  No
   What was the event? 

30.) Have any of the events mentioned above ever happened to someone close to you so that even though you didn't see it yourself, you were seriously upset by it?
   Yes  No
   What was the event? 

   a. How old were you when this happened?  ______
   b. How old were you when it ended?  ______
   c. At the time of the event, did you believe that you or someone else could be killed or seriously harmed?  Yes  No
   d. At the time of the event did you experience feelings of intense helplessness, fear, or horror?  Yes  No
   e. How much is this affected your life in the past year?
      Not at all  Some  Extremely
      1  2  3  4  5
Indicate for each of the statements below the degree to which this change occurred in your life as a result of your negative experience, using the following scale.

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

<table>
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<tr>
<th>Statement</th>
<th>0</th>
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<th>2</th>
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</thead>
<tbody>
<tr>
<td>1. my priorities about what is important in life</td>
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<td>2. an appreciation for the value of my own life</td>
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<td>3. I developed new interests</td>
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<td>4. a feeling of self-reliance</td>
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<td>5. a better understanding of spiritual matters</td>
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<td>6. knowing that I can count on people in times of trouble</td>
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<td>7. I established a new path for my life</td>
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<td>8. a sense of closeness with others</td>
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<td>9. a willingness to express my emotions</td>
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<td>10. knowing I can handle difficulties</td>
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<td>11. I’m able to do better things with my life</td>
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<td>12. being able to accept the way things work out</td>
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<td>13. appreciating each day</td>
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<td>14. new opportunities are available which wouldn’t have been otherwise</td>
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<td>15. having compassion for others</td>
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<td>16. putting effort into my relationships</td>
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<td>17. I’m more likely to try to change things which need changing</td>
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<td>18. I have a stronger religious faith</td>
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<td>19. I discovered that I am stronger than I thought I was</td>
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<td>20. I learned a great deal about how wonderful people are</td>
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<td>21. I accept needing others</td>
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</table>
Appendix D

IRB Approval

Vice President for Research
The Pennsylvania State University
Office for Research Protections
330 Building, Suite 205
University Park, PA 16802

Phone: (814) 865-1775
Fax: (814) 863-8699
Email: orprotections@psu.edu
Web: www.research.psu.edu/orp

EXEMPTION DETERMINATION

Date: February 20, 2015
From: Courtney Whetzel, IRB Analyst
To: Laura Copley

Type of Submission: Initial Study
Title of Study: Perceptions of Corrective Interpersonal Experiences in Adult Bonding in Promoting Post-Traumatic Growth in a Sample of College Students
Principal Investigator: Laura Copley
Study ID: STUDY00001837
Submission ID: STUDY00001837
Funding: Not Applicable
Documents Approved:
  • Revised LCopley Quantitative Packet (2-14-2015), Category: Data Collection Instrument
  • REVISED LCopley HRP-591 (2-14-2015), Category: IRB Protocol

The Office for Research Protections determined that the proposed activity, as described in the above-referenced submission, does not require formal IRB review because the research met the criteria for exempt research according to the policies of this institution and the provisions of applicable federal regulations.

Continuing Progress Reports are not required for exempt research. Record of this research determined to be exempt will be maintained for five years from the date of this notification. If your research will continue beyond five years, please contact the Office for Research Protections closer to the determination end date.

Changes to exempt research only need to be submitted to the Office for Research Protections in limited circumstances described in the below-referenced Investigator Manual. If changes are being considered and there are questions about whether IRB review is needed, please contact the Office for Research Protections.
Penn State researchers are required to follow the requirements listed in the Investigator Manual (HRP-103), which can be found by navigating to the IRB Library within CATS IRB (http://irb.psu.edu).

This correspondence should be maintained with your records.
Laura Copley Shortened Curriculum Vitae

Educational Psychology, Counseling, & Special Education
125 CEDAR Building
The Pennsylvania State University Phone: (540) 908-0881
University Park, PA 16802 E-Mail: LAC262@psu.edu

SUMMARY OF QUALIFICATIONS:
Counselor educator, Licensed Professional Counselor, and trauma specialist. Training in college teaching and positive psychology. Experience in program development, clinical mental health, supervision and leadership, research, and workshop presentation

EDUCATION:
Doctor of Philosophy in Counselor Education, The Pennsylvania State University
State College, PA, Defended: June 2015
Master of Arts in Counseling, Eastern Mennonite University
Harrisonburg, VA, Graduated: May 2010
Bachelor of Arts in Psychology, James Madison University
Harrisonburg, VA, Graduated: May 2008

Professional Certifications
Licensed Professional Counselor in Virginia
Advanced Trauma Treatment Certificate
Graduate School Teaching Certification (in progress)

SELECTED WORK HISTORY:
August 2014-Present: Instructor at Penn State University
January 2013-Present: Supervisor of the CEDAR Clinic at Penn State University
April 2008-September 2012: Supervisor and Counselor at Family Preservation Services
August 2010-August 2012: Supervisor for CoachLink at Eastern Mennonite University

Academic Internship
CEDAR Clinic Counselor and Clinical Supervisor; Co-Teaching; Career Counselor

SELECTED PRESENTATIONS: