

PREDICTING POSTTRAUMATIC GROWTH:
A BROADER PERSPECTIVE

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ABSTRACT

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Throughout their lifetimes, many individuals will experience events that they consider traumatic, whether clinically or by a broader definition that includes all events that cause a significant, negative impact. Previous studies have found that trauma impacts a number of areas of life, from contributing to the development of mental health diagnoses to overall lower life satisfaction, but recent interest has increased concerning the potential for positive outcomes following traumatic experiences. Some research has focused on different personality characteristics or treatment types likely to mitigate the negative impact of traumatic events while others have examined occurrences of individuals growing past the baseline present prior to trauma in some area of their life, such as relationships or existential concerns. Much of this literature has centered around the construct of posttraumatic growth (PTG) and what contributes to this type of growth. The current study examined three characteristics of traumatic experiences, age of first experience of trauma, frequency of traumatic experiences, and type of trauma and how they directly impact posttraumatic growth. It then examined if these characteristics indirectly impact posttraumatic growth through an impact on coping style and attachment style. A predominantly female (95.7%) sample was recruited from the campus population of Texas Woman's University for this study. Of the identified characteristics of trauma, only experiences of childhood trauma and high frequency of trauma significantly predicted PTG, and the indirect impacts were nonsignificant. Avoidant coping showed a nonsignificant, positive relationship to PTG; however, much stronger correlations were found between other coping styles such as

active coping and PTG. This implies that avoidant coping styles, particularly in individuals beginning to process experiences of trauma, might be beneficial as a starting point for moving toward other styles of coping for therapy clients addressing trauma.

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CHAPTER I

INTRODUCTION

Study Overview

Traumatic events, those meeting the clinical definition of trauma and those identified by the individuals experiencing them, potentially create lasting impacts in individuals' lives, from contributing to the development of mental health symptoms to changing one's manner of interacting and forming relationships (Pejuskovic et al., 2017). From a diagnostic perspective, for an event to be considered traumatic, it must meet certain criteria, the most notable of which being the threat or perceived threat to one's life or the life of a loved one (American Psychiatric Association [APA], 2013). This perspective, while beneficial for outlining criteria for treatment, has the potential to be dismissive of individuals' lived experiences and their own perception of which experiences are traumatic. In a broader sense, trauma refers to an external stressor, either acute or chronic, which creates a significant, negative impact in an individual's life (Tedeschi & Calhoun, 1996).

Unfortunately, the wide range of methods of defining and describing trauma leads to difficulty in truly understanding the prevalence of these types of experiences, and often researchers rely on the numbers of individuals seeking treatment for trauma-related diagnoses. However, even this perspective is limiting; as the available data indicates that over 50% of children experience some type of trauma, but the data on prevalence rates in adults remains limited (Saunders & Adams, 2014). Trauma creates an impact across a spectrum of human experiences, and adults who have experienced trauma might never seek treatment or seek treatment for other negative outcomes of trauma, such as substance use or interpersonal

difficulties (Hefner & Rosenheck, 2019). As a result, tracking prevalence rates of traumatic experiences in the adult population becomes even more difficult.

The acknowledgement of the persistent impact of trauma as well as the overlap with other mental health diagnoses has led to a number of studies examining comorbidity and cooccurring prevalence rates, which helps to better inform our understanding of the impact of trauma into adulthood (Hefner & Rosenheck, 2019). Many of these studies have focused on the comorbidity between posttraumatic stress disorder (PTSD) and personality disorder diagnoses, a class of diagnoses seen as having a significant impact in almost every area of an individual's life (Bollinger et al., 2000). In addition to the previously mentioned criteria for clinical trauma, symptoms of PTSD also include significant physiological reactions to remembering the traumatic event and persistent avoidance of potential reminders of the event (APA, 2013). These physiological reactions can lead to significant physical health concerns, and the persistent avoidance can significantly limit an individual's ability to interact with the world around them, further highlighting the widespread impact of negative responses to traumatic events (Dyball et al., 2019).

The study of trauma in the field of psychology spans over 100 years, gaining significant interest following World War I, as the overlap between modern warfare and modern medicine highlighted the lasting impacts experienced by soldiers following combat experience (Bradley & Westen, 2005). Concurrent with the development and periodic prominence of new theories in the field of psychology, the examination of trauma has shifted focus to different elements of this experience over time (Cahill & Foa, 2007). Initial studies focused primarily on identifying, acknowledging, and defining trauma, shortly after shifting to developing theories of how trauma creates an impact on individuals' lives.

The most recent trend in this area of study incorporates aspects from existential, humanistic, and strengths-based approaches to emphasize the potential for positive growth following traumatic experiences, not merely examining potential factors influencing the presence or absence of mental health symptoms (Tsai et al., 2017). A number of different theoretical constructs have been proposed to describe this type of positive growth (Boals & Schuler, 2019; Nordstrand et al., 2017), and the most commonly utilized is that of posttraumatic growth (PTG; Tedeschi & Calhoun, 1996). PTG describes a type of growth that occurs following traumatic experiences as a result of the process of struggling with the external stressor or situation, often compared to the Japanese art of kintsugi, in which damaged pottery is reformed with gold lacquer (Buetow & Wallis, 2019). This concept highlights that recovery from trauma does not always constitute a return to the state occupied before a traumatic experience, emphasizing that growth and repair can lead to a new type of beauty and strength. While PTG might involve an individual experiencing PTSD symptoms, the presence of a mental health diagnosis is not a prerequisite for this type of growth (Tedeschi et al., 2017).

The concept of PTG first arose from qualitative studies examining the lived experiences of individuals following traumatic events, and a number of positive themes began to emerge, leading to the first development of a measure designed to assess this type of response to trauma (Tedeschi & Calhoun, 1996). As interest in this concept has grown and increased, particularly in the last decade, the relationship between PTG and positive treatment outcomes has steadily emerged. In a very immediate sense, the presence of PTG following traumatic experiences moderates the likelihood of an individual experiencing suicidal ideation, with a stronger moderation effect seen in cases of severe trauma (Sheline & Rosen, 2017). PTG's impact is not limited to mental health and has been linked with other positive outcomes, such as physical

health prognosis following trauma related to physical injury or chronic illness (Walsh et al., 2018).

Due to the relatively recent development of the construct of PTG and the even more recent increase in studies examining this construct, a great deal of uncertainty exists concerning why some individuals are more likely to experience PTG than others. Previous research regarding PTSD has emphasized a number of personality characteristics, such as resilience, as potential protective factors preventing mental health symptoms, and, as a result, these characteristics were some of the first proposed factors influencing positive response to trauma (Shuwiekh et al., 2018; Tsai et al., 2017). Following this, the focus shifted to examine if elements of the traumatic experiences themselves, or the severity of mental health symptoms developed, predicted the development of PTG, but neither of these provided a full picture (Nishikawa et al., 2018; Wamser-Nanney et al., 2018). Other research has examined potential mechanisms through which individuals might develop PTG, including social support, methods of coping, and manners of relating to others (Koch, 2019; McCaslin et al., 2019; Morgan et al., 2017). The current study adds to this body of literature by testing a theoretical model of mechanisms through which positive growth might occur and how this growth varies across a number of characteristics of traumatic experiences.

Need and Purpose

Prior to the emergence of PTG as a psychological construct, research on trauma focused almost exclusively on negative impacts, particularly the development of symptoms associated with mental health diagnoses (Pejuskovic et al., 2017). In addition, the term trauma, originally descriptive primarily of events related to military service and combat, has broadened to include a range of experiences that cause a traumatic impact (Tedeschi & Calhoun, 1996). As this field of

study has grown and expanded, so has the need for research exploring the different responses to the many events interpreted as traumatic based on an individual's perspective. In particular, additional information concerning the various factors that contribute to the potential for positive change following traumatic experiences would help to provide direction for future research and the development of treatments for traumatic experiences.

This field of study presents clear possibilities for positive application, from aiding in strengths-based approaches to therapy and cultivating existing sources for growth in clients who have experienced trauma to helping inform policy decisions concerning the early identification of childhood trauma to facilitate early intervention. With significant evidence of the relationship between PTG and other positive outcomes following a range of traumatic events, additional information concerning how to cultivate this process would benefit practitioners hoping to promote similar positive outcomes with clients. The current study hopes to build on the existing literature exploring the mechanisms through which individuals develop PTG following experiences of trauma. Through an exploration of previous studies, a number of characteristics of trauma present as factors predicting the likelihood of PTG, both directly and indirectly through impacting these mechanisms of change. Previous studies have proposed a variety of different factors affecting individuals' responses to traumatic experiences, including personality characteristics and the severity of mental health symptoms, but many of the proposed factors fall under the broader mechanisms of coping style and attachment style, motivating their inclusion. Specifically, this study sought to provide evidence of the relationship between type of traumatic experience, age of first experience of trauma, number of traumatic experiences in one's lifetime, coping style, attachment style, and PTG.

CHAPTER II
LITERATURE REVIEW

Impact of Trauma

Over the years, many studies have focused on experiences of trauma in an attempt to better understand the risks, impacts, and different individual responses to these experiences. The majority of these studies have utilized the clinical definition of trauma, specifically that it involves the threat, real or perceived, to one's life or the life of a loved one and results in a specific set of symptoms causing a significant impact to one's ability to function in different areas of life (APA, 2013). From a non-clinical perspective, trauma refers to an external stressor, either acute or chronic, which creates a significant, negative impact in an individual's life (Tedeschi & Calhoun, 1996). This broader definition better encompasses the range of human experiences and empowers individuals to identify for themselves what experiences are traumatic, but it has primarily been used in recent research. Organizations attempting to determine prevalence rates of traumatic experiences tend not to utilize this broader definition, resulting in little data concerning its prevalence. As clinical trauma becomes better defined, improved methods of reporting, identifying, and tracking these experiences arise, providing valuable information about the widespread nature of clinical trauma. In a recent meta-analysis of studies examining traumatic experiences in childhood, over half of all children were reported to have witnessed serious violence in their communities, and a significant portion of children reported either observing or directly experiencing interpersonal trauma, such as physical or sexual abuse (Saunders & Adams, 2014). Many of these individuals reported exposure to multiple types of trauma within their childhood.

Unfortunately, less information is available concerning prevalence rates of traumatic experiences in adulthood, as many of these experiences go unreported and undocumented unless they result in a diagnosis of PTSD and subsequent mental health treatment. Lifetime prevalence rates of PTSD in adults have been measured at approximately 7%, significantly lower than childhood experiences of trauma, highlighting the limitations of this criteria as a method of measuring adult experiences of trauma (Gradus, 2020). This difficulty, as well as early cognitive theories conceptualizing PTSD as resulting from unsuccessful adaptation to traumatic experiences (Brewin et al., 1996), likely contributed to the trend of studying trauma through an emphasis on PTSD. The impact of PTSD is not limited to the symptoms of this diagnosis, and traumatic experiences have been linked to other negative outcomes including higher rates of thoughts of suicide (Sheline & Rosén, 2017). Additionally, longitudinal studies of adults diagnosed with PTSD have found broader, more pervasive impacts, specifically that more severe levels of PTSD symptoms are related to lower lifetime income and reports of lower quality of life (Pejuskovic et al., 2017).

As these studies illustrate, experiences of trauma are widespread and common, beginning early in life for many, and the impact of these traumatic experiences contributes to difficulties throughout individuals' lives. Until recently, this negative impact was the primary focus of most trauma research, with some studies including personality characteristics, such as resiliency, which were theorized to insulate and protect individuals (Tsai et al., 2017). Within the last 10 years however, concurrent with ongoing emphasis on more holistic, strengths-based conceptualizations of individuals, the number of studies seeking to understand other responses to trauma have significantly increased. Some of these studies, while including the idea of positive growth following trauma, have continued to focus primarily on negative outcomes, viewing

positive growth as indicative of successful treatment, intrinsically tied to the severity of the initial, negative response (Mangelsdorf et al., 2019). Unfortunately, these studies have framed positive growth following trauma as merely the lessening of or recovery from PTSD symptoms such that the amount of possible growth is limited by their severity, highlighting the need for ongoing study of different types of response to trauma. Studies incorporating a more strengths-based perspective of human growth have instead sought to examine growth past the baseline which existed prior to experiences of trauma. These shifts in our conceptualization of experiences of trauma and individuals' responses have largely centered around a construct known as posttraumatic growth.

Posttraumatic Growth

Despite only recently gaining significant traction within the body of literature concerning trauma, the term PTG was first coined in reference to a new scale developed by Tedeschi and Calhoun (1996) in response to observing recurring themes of perceived benefits reported after experiences of trauma. Broadly speaking, the term refers to the positive change that can arise from the struggle with difficult life experiences, including trauma (Tedeschi & Calhoun, 2004). Early conceptualizations of this construct drew from themes of drawing strength from suffering present within many religious and philosophical texts, and it attempted to gauge positive responses to a wider range of life challenges than solely experiences that meet the diagnostic criteria of trauma, acknowledging individual differences in perception of trauma. These challenges disrupt or damage an individual's internal schemas or views, and the process of refining or rebuilding these internal elements leads to new growth not present before the experience of trauma.

The reports of this type of growth largely fall within five overarching categories, corresponding with the domains of Tedeschi and Calhoun's (1996) measure: greater appreciation of life and changed sense of priorities; warmer, more intimate relationships with others; a greater sense of personal strength; recognition of new possibilities or paths for one's life; and spiritual development. Significant challenges in life often lead individuals to identify and appreciate positive elements of their lives that have been taken for granted and, in turn, to prioritize these experiences and the joy that they bring (Tedeschi & Calhoun, 2004). When these experiences include a loss, either of an individual or a relationship, growth frequently appears through a strengthening of other relationships, increasing intimacy and openness (Tedeschi & Calhoun, 2004). Individuals who have not experienced significant challenges in life sometimes believe themselves to be immune to, or protected against, the traumatic events that others experience, and the shattering of this illusion intensifies the impact of traumatic events when they occur (Tedeschi & Calhoun, 2004). A newfound sense of personal strength often arises through the acceptance of this newly discovered vulnerability as well as one's survival of the traumatic experience (Tedeschi & Calhoun, 2004). Significant events that impact an individual's ability to continue to pursue their desired life goals, such as career or family goals, can, in turn, expose new life possibilities or paths through which to seek fulfillment (Tedeschi & Calhoun, 2004). In addition, following experiences of trauma, many report greater engagement with their religious or spiritual beliefs or with significant existential questions concerning meaning and existence (Tedeschi & Calhoun, 2004).

These conceptual areas of PTG are not themselves static domains, and, as our understanding of this type of trauma response has changed and increased, the measures utilized have also undergone development. Recently, the area of PTG associated with spiritual

development has been expanded to better encompass the range of spiritual and existential growth reported by individuals who identify with a particular religion as well as those who do not (Tedeschi et al., 2017). Some researchers have attempted to seek a better understanding of this type of growth by developing new measures (Nordstrand et al., 2017), but these new constructs do not differ significantly from PTG in conceptual or theoretical origin.

In the short time that researchers have studied PTG, evidence of the construct has been found across a wide range of locations, populations, and types of trauma. Studies conducted in China, Norway, and the United States have all found growth in response to experiences of traumatic events (Glad et al., 2019; Goldberg et al., 2019; Xu et al., 2019), and it has been seen in populations of varied ages and genders (Barlow & Hetzel-Riggin, 2018; Brosi et al., 2020; Glad et al., 2019; Mazor et al., 2019). PTG exists across multiple types of trauma, including natural disaster (Manove et al., 2019; Xu et al., 2019), physical trauma (Goldberg et al., 2019), military trauma (Morgan & Desmarais, 2017), interpersonal trauma (Brosi et al., 2020), experiences of terror attacks (Glad et al., 2019), and bereavement, including bereavement resulting in complex grief (Drapeau et al., 2019; Bellet et al., 2018). Often, the specific areas of PTG seen within different studies relate to individual differences in the participants, but that interaction, as well as the specific experiences of PTG, are impacted by various characteristics of trauma, including type, age of experience, and number of experiences.

Characteristics of Trauma

Experiences of trauma do not all fall under a single, uniform description, and a wide number of different characteristics of trauma influence its impact, both positive and negative. Even the way in which trauma is remembered can be impacted by the type of trauma, with some experiences more likely to lead to overgeneralized memories and subsequent avoidance

behaviors (Ping & Gray, 2018). Overgeneralized memories, such as those related to a traumatic injury or accident, seem to be more related to broader avoidance behaviors while highly specific memories, such as those related to experiences of sexual or physical assault, might increase the likelihood of symptoms of re-experiencing trauma often associated with PTSD. Additionally, emotional responses to trauma, attributions of blame for traumatic experiences, and a wide range of symptoms associated with PTSD were found to differ between individuals who first experienced trauma in childhood when compared to those who first experienced trauma in adulthood, specifically that individuals who first experienced trauma in childhood were more likely to display symptoms of dissociation, guilt, shame, and self-blame (Hagenaars et al., 2011). This study, highlighting the impact of age of first experience of trauma, found the same difference between groups reporting only a single traumatic experience in comparison to groups reporting multiple traumatic experiences (Hagenaars et al., 2011). Among participants in this study, the report of multiple traumatic experiences seemed to contribute to these outcomes regardless of the age at which the first traumatic experience occurred, suggesting the need for additional study of these variables.

Experiences of childhood trauma have been consistently linked to negative mental health outcomes, such as higher levels of neuroticism as a personality trait (Allen & Lauterbach, 2007). These personality traits were found in individuals with single and multiple experiences of childhood trauma, suggesting that childhood trauma, regardless of frequency, increases traits such as insecurity and nervousness in adults (Allen & Lauterbach, 2007). In addition, the cumulative number of childhood traumatic experiences has been linked to increased likelihood of developing symptoms of complex PTSD, such as difficulties regulating emotional expression and difficulties forming interpersonal relationships (Cloitre et al., 2009). The relationship

between childhood trauma and adult PTSD has been found to be stronger with experiences of childhood interpersonal trauma, such as abuse, than non-interpersonal trauma, such as natural disasters, although frequency of childhood traumatic experiences was predictive of adult PTSD regardless of type (Syed Sheriff et al., 2019). However, negative mental health outcomes have not been limited to PTSD; experiences of childhood physical abuse and neglect have been linked to a wide range of adult mental health diagnoses, particularly mood and anxiety disorders (Salokangas et al., 2020).

Characteristics of traumatic experiences have also been linked to the potential for positive outcomes from trauma; for example, trauma relating to bereavement and loss was more likely to predict higher potential for growth-related outcomes than trauma relating to sexual assault (Shakespeare-Finch & Armstrong, 2010). Individuals have also reported increased ease in growing from shared traumatic experiences, such as combat trauma, rather than those experienced alone, such as sexual assault, potentially relating to increased ease in discussing shared trauma (Kılıç et al., 2016). When looking specifically at PTG, the impact of trauma-related variables becomes even more apparent, including interactions between characteristics of trauma and individual differences. Experiences of trauma early in life negatively impact the likelihood of PTG, and this impact is increased based on how intense those experiences were perceived to be (Nishikawa et al., 2018). Nishikawa et al. found that individuals exposed to traumatic events prior to the age of 6 were likely to display increased emotional vulnerability and increased likelihood of additional traumatic experiences in their lifetime.

The impact of traumatic experiences on PTG is not universal, and a recent meta-analysis found the likelihood of PTG was higher in adolescent populations reporting recent experiences of trauma, seeming to indicate that early intervention is particularly important with traumatic

experiences in childhood (Wu et al., 2019). Unfortunately the scope of this study was focused primarily on determining the prevalence of PTG in younger individuals, and the authors did not elaborate further on the role of other trauma characteristics. Other studies have found that the type of traumatic event impacts rates of PTG, specifically that experiences of interpersonal trauma, such as sexual assault, were less predictive of PTG than experiences of loss of a loved one (Wamser-Nanney et al., 2018). The relationship between type of trauma and PTG seems to be mediated by a number of personality factors, particularly with severe trauma, and higher rates of PTG have been reported by individuals who have a high need for order in their lives, seeming to indicate that one's method of responding to a traumatic event impacts outcomes (Shuwiekh et al., 2018).

Given the evidence that different aspects of traumatic experiences predict individuals' responses to these events as well as the evidence of multiple factors impacting that relationship, many studies have attempted to identify the mechanisms through which these interactions occur. A number of researchers have proposed that an individual's style of coping explains these interactions, such as mediating the relationship between number of traumatic experiences and PTG (Bellur et al., 2018) or mediating the relationship between a specific type of trauma and PTG (Kunz et al., 2018). Additionally, coping style impacts the relationship between the number of different types of traumatic experiences and PTG and the relationship between age at which a traumatic experience occurred and PTG (Brooks et al., 2018). Coping style also impacts negative outcomes associated with trauma, mediating the relationship between childhood traumatic experiences and symptoms of PTSD (Kahl et al., 2020) as well as outcomes associated with continuous trauma when compared to acute (Irit & Nuttman-Schwartz, 2019).

Another commonly examined mechanism is that of attachment style, thought to both be affected by experiences of trauma and affect an individual's response to traumatic experiences. Complex trauma in childhood has been linked to a range of attachment difficulties in adulthood, including difficulties forming relationships and avoidant attachment styles (McCormack & Issaakidis, 2018). Attachment was also found to both moderate and mediate the relationship between trauma and PTSD symptoms, depending on the type of trauma, in a meta-analysis of this relationship (Barazzone et al., 2019). In order to determine if these mechanisms reliably predict responses to trauma, particularly PTG, an examination of their direct connection must also be included, not merely their roles in mediation and moderation.

Coping Style

Coping, frequently defined as the thoughts and behaviors utilized by individuals when confronted by situations determined to be stressful, specifically those used to manage the demands of those situations, presents clear conceptual connections to trauma, as these events are, by definition, stressful (Folkman & Moskowitz, 2004). A wide range of different coping strategies have been identified within the research literature, but this often presents difficulties when attempting to generalize these results across measures or different studies. In general, many of the coping strategies identified fall into the categories of problem-focused, coping defined by attempting to address the problem causing distress, emotion-focused, coping defined by attempts to resolve negative emotions resulting from a stressor, and meaning-focused, coping defined by attempting to manage cognitions regarding the meaning of a stressor (Folkman & Moskowitz, 2004); however, these categories potentially ignore or gloss over other identified elements of coping, such as level of avoidance compared to engagement and coping through social support (Hasselle et al., 2019). As a result, many studies examining coping as an important

factor have focused primarily on specific coping skills rather than overarching styles, or the researchers have utilized factor analysis of existing measures to identify coping styles specific to their study's population. Despite these difficulties, the three frequently identified categories of coping present clear conceptual connections to areas of PTG, such as problem-focused coping contributing to a greater sense of personal strength, emotion-focused coping contributing to a greater appreciation of life and a changed sense of priorities, and meaning-focused coping contributing to spiritual and existential development (Folkman & Moskowitz, 2004).

Although few studies examining the relationship between coping and PTG have examined styles rather than specific strategies, a recent examination of trauma responses in adults experiencing bereavement as a result of suicide found problem-focused coping to be strongly related to reports of PTG (Drapeau et al., 2019). In addition, active coping, particularly active coping involving deliberate rumination, was found to account for approximately 45% of the variation in PTG experienced in a group of stroke survivors (Kelly et al., 2018), and engaged coping through emotion-regulation significantly predicted PTG when compared to disengaged, avoidant coping (Orejuela-Davila et al., 2019). Many more studies have examined the relationship between specific coping skills and strategies and PTG, as these are often easier to measure than broader coping styles.

Fortunately, many of these strategies have clear connections to a particular style, often problem-focused or emotion-focused. A number of studies have found a connection between rumination, prolonged, intensive thought on a topic, and PTG, specifically that deliberate, intentional rumination increases the likelihood of PTG while intrusive, involuntary rumination decreases it (Choi & In, 2020; Xu et al., 2019). The act of deliberate rumination is often linked to the examination and evaluation of one's core beliefs (Morgan et al., 2017; Ramos et al., 2018),

as traumatic events often lead to the realization that core beliefs need to be adjusted in order to establish a functional set of beliefs through which to interact with the world (Mazor et al., 2019). In other studies, the researchers focused instead on participants' abilities to reframe and change their perspective of traumatic events, a strategy positively associated with PTG (Goldberg et al., 2019; Levi & Vachar, 2018). Reframing, along with the ability to create new meaning from traumatic events, were identified as elements of self-compassion related to the ability to process trauma (Wong et al., 2017), as well as meaning-making by itself (Zeligman et al., 2018). While many of these coping strategies have emphasized cognitive components, skills involving emotions have also been linked to positive outcomes following trauma, such as emotional creativity, the ability to experience new, appropriate emotions (Orkibi & Ram-Vlasov, 2019), and emotional intelligence, the ability to identify, understand, and manage emotions (Thomas et al., 2020).

In contrast, negative cognitions concerning traumatic events and emotional suppression were linked to avoidant attachment and the development of complex PTSD (Karatzias et al., 2018). One of the few studies examining disclosure, a strategy more readily associated with social coping than the more commonly utilized categories of coping, sought to examine if others' reactions to disclosure of traumatic events impacted the likelihood of experiencing PTG (Koch, 2019). Interestingly, the act of disclosure was found to positively predict PTG, regardless of the social reaction received in response, potentially indicating that another factor impacted this relationship. It is possible that participants' attachment style, specifically secure attachment, increased their comfort engaging in disclosure as well as the likelihood of developing PTG.

Attachment Style

The term attachment originated from research in the field of developmental psychology concerning different patterns of interaction observed between children and their parents, but it has grown and evolved over time to include relationships over the course of the entire lifespan (Mikulincer & Shaver, 2007). For the purpose of studying responses to traumatic experiences, this term most often refers to adult attachment, distinct patterns of interaction common within adult relationships, both romantic and platonic. Generally, patterns of adult attachment are characterized by where they fall on two spectrums of relationship insecurity, avoidance and anxiety, which describe discomfort with closeness and dependence and a strong desire for protection while doubting one's value to a partner, respectively. Adults who show low levels of both attachment avoidance and anxiety are described as securely attached, and they display comfort with trust and openness in relationships (Mikulincer & Shaver, 2007). This secure attachment naturally lends itself toward the development of warmer, more intimate relationships as seen in PTG as well as providing a solid base from which to explore new possibilities or paths in life.

This conceptual connection has also been supported by the research literature, with spirituality, another aspect of PTG, found to mediate the relationship between attachment style and a range of mental health symptoms (Luna et al., 2016). Attachment has also been found to mediate the relationship between childhood experiences of trauma and adult difficulties with identity integration and relationship concerns associated with personality disorder diagnoses (Cohen et al., 2017). Secure attachment has been found to directly predict PTG (Ávila et al., 2017), and that relationship is moderated by cognitive factors related to how individuals frame

their relationships with others, similar to the coping strategy of reframing (Lev-Ari & Levi-Belz, 2019).

Studies frequently examine interactions between attachment and coping in response to trauma, but these studies often emphasize which interactions predict negative outcomes or decreased likelihood of PTG (Marshall & Frazier, 2019). For example, attachment anxiety significantly predicts the development of negative self-appraisals following traumatic events, both, in turn, predicting lower levels of PTG (Arikan et al., 2016). Additionally, both attachment anxiety and avoidance have been connected to avoidant methods of coping and negative mental health outcomes in response to trauma across both active duty and veteran military populations (Romero et al., 2020).

As with coping, a number of studies have examined individual differences and behaviors related to attachment, separate from overall attachment styles, and their relationship to trauma response. In a study of individuals with experiences of childhood sexual abuse, the ability to form strong relationships, both therapeutic and extra-therapeutic, significantly predicted levels of PTG (Dagan & Yager, 2019). Social support has also been found to directly predict PTG (McCaslin et al., 2019) and, in combination with self-disclosure, to mediate the relationship between attachment and PTG (Levi-Belz & Lev-Ari, 2019).

Variables Not Included in Current Study

A wide range of potential factors potentially impacting individuals' responses to traumatic experiences have been identified in the research literature, and a single study would not be able to incorporate all of these variables without becoming too cumbersome. As a result, some variables that have been proposed as predictors of PTG have been excluded from the current study. In comparison, the relationship between resilience and response to trauma has

been more thoroughly explored, but this does not fit the theoretical model of the present study as it falls more into the category of personality characteristics (Infurna & Eranda, 2019). Similarly, PTSD symptom level was rejected despite strong connection to outcomes (Schneider et al., 2019), as it assumes the presence of this diagnosis, which is unnecessary for PTG. Finally, event centrality, both alone (Boals & Schuettler, 2011) and in combination with vividness of trauma memory (Blix et al., 2020), was not included in this study due to the concern that measures of this construct could lead to unintentionally triggering trauma-related symptoms in participants. The amount of focus and attempts to recall past traumatic experiences would present an unnecessary risk.

Current Study

Throughout their lifespan, many individuals will experience traumatic events, often as early as their childhood. These events lead to pervasive and significant, negative impacts to mental health and other areas of life satisfaction. More recently, studies have begun to highlight other types of individual response to trauma, including the potential for positive growth, commonly known as PTG. In a short period of time, a large amount of research has sought to understand what leads some individuals to develop negative, symptomatic responses to trauma and others to developing PTG, with varying emphasis. A wide number of characteristics associated with traumatic experiences have been proposed as potential factors, with evidence of a direct relationship between these variables and trauma response. Additional studies have proposed that coping and attachment play a role in determining outcomes related to trauma, and direct relationships between these factors have been identified, as well as interactions between trauma characteristic, coping, attachment, and response to trauma.

For the current study, characteristics of trauma were limited to three variables frequently identified in the literature: the age of one's first experience of trauma, divided between childhood and adulthood; the number of lifetime experiences of trauma; and the type of trauma characterized by one's most significant experience of trauma. In addition, although previous studies have examined specific coping strategies and behaviors associated with different types of attachment in addition to broader, categorical coping and attachment styles, the current study focused exclusively on these broader categories. The study sought to determine the validity of a theoretical model (see Figure 1) of relationships between the identified trauma characteristics, coping style, attachment style, and PTG represented by the following research questions and hypotheses.

Research Questions and Hypotheses

Research Question 1: Does the age at which the first experience of trauma occurs predict PTG?

Hypothesis 1a: Experiences of trauma in childhood will negatively predict PTG directly.

Hypothesis 1b: Experiences of trauma in childhood will negatively predict PTG indirectly through avoidant coping.

Hypothesis 1c: Experiences of trauma in childhood will negatively predict PTG indirectly through anxious attachment.

Research Question 2: Does the frequency of experiences of trauma predict PTG?

Hypothesis 2a: Higher frequency of experiences of trauma will negatively predict PTG directly.

Hypothesis 2b: Higher frequency of experiences of trauma will negatively predict PTG indirectly through avoidant coping.

Hypothesis 2c: Higher frequency of experiences of trauma will negatively predict PTG indirectly through anxious attachment.

Research Question 3: Does the type of traumatic experience predict PTG?

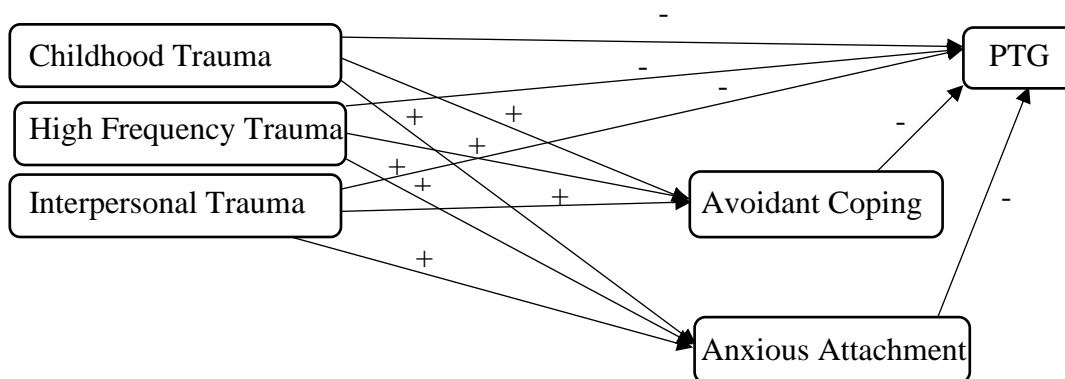
Hypothesis 3a: Experiences of interpersonal trauma will negatively predict PTG directly.

Hypothesis 3b: Experiences of interpersonal trauma will negatively predict PTG indirectly through avoidant coping.

Hypothesis 3c: Experiences of interpersonal trauma will negatively predict PTG indirectly through anxious attachment.

Figure 1

Theoretical Model



CHAPTER III
METHODOLOGY

Participants

Participants for this study were adults over the age of 18 recruited from the undergraduate and graduate population of Texas Woman’s University (TWU) in the spring semester of 2021. Primary recruitment occurred via the university’s SONA online undergraduate student research recruitment system and through undergraduate psychology courses, providing an initial sample of 125 participants. From this initial sample, four participants were excluded due to denial of any lifetime experiences of trauma, and an additional five participants dropped out prior to completing the study measures, resulting in a final sample of 116 participants. The sample was predominantly composed of female undergraduate students who reported completing their high school education and some college. A number of self-reported ethnicities were represented, and family incomes were evenly distributed across the provided response ranges (see Appendix A). A detailed breakdown of participants’ demographic variables is presented in the following chapter.

Instrumentation

Participants were first asked to complete a brief demographic questionnaire (see Appendix A) followed by a survey relating to past traumatic experiences (see Appendix B). In order to protect participants from unnecessary risk of becoming triggered and to avoid collecting unnecessary or invasive information of traumatic experiences, this survey focused exclusively on the variables identified in the literature. Ranges were provided as response options for participants regarding age of first experience of trauma (i.e., 0-17 and 18+) in order to determine if participants’ first experiences of trauma fell within childhood or adulthood. Frequency of

traumatic experiences were measured with a scale ranging from 1-10+. As the construct of PTG covers a range of traumatic experiences not limited to those meeting the clinical criteria for trauma, this report was based on participants' subjective accounts of which experiences have been traumatic (Tedeschi et al., 2017). Participants were then asked to choose from a list of categories the type of trauma that best described the traumatic experience they considered most impactful (i.e., loss, interpersonal, military/combat, natural disaster, major life event, illness, other). This survey was newly created for this study, and the response options provided have been commonly utilized in the PTG literature. After completing both the demographic questionnaire and trauma survey, participants completed measures of PTG, coping style, and adult attachment utilizing the measures described below.

Post Traumatic Growth Inventory

The Post Traumatic Growth Inventory (PTGI-X; Tedeschi et al., 2017) was utilized to assess participants' levels of PTG. Originally developed in 1996 (Tedeschi & Calhoun, 1996), the PTGI is currently in its 10th version, having undergone revisions to increase accuracy and increase inclusivity for a wider range of perspectives on religion and spirituality (Tedeschi et al., 2017). The 25-item measure consists of a list of possible changes that could occur in individuals' lives after traumatic experiences (e.g., Changed my priorities) and asks participants to identify the degree to which they did or did not experience the particular change (0 = *I did not experience this change as a result of my crisis* to 5 = *I experienced this change to a very great degree as a result of my crisis*). These items comprise five subscales: relating to others, new possibilities, personal strength, spiritual change, and appreciation of life. Responses are scored by totaling all items, with higher scores indicating increased levels of PTG, and subscale scores are calculated as an average of their individual items. The PTGI-X has been shown to have a 2-month test-

retest reliability of .71 (Tedeschi & Calhoun, 1996), and internal reliability of .97 in a similar sample (Tedeschi et al., 2017). In the current study, the Cronbach alpha coefficient was .94. In addition, the PTGI-X is strongly correlated with other, conceptually related measures, including measures of optimism, resilience, and religious participation, establishing concurrent validity.

COPE Inventory

The COPE Inventory (Carver, 2013) was utilized to assess participants' coping styles. The 60-item measure provides a list of possible coping strategies (e.g., I make a plan of action) and asks participants to indicate what they generally do or feel in response to stressful life situations (1 = *I usually don't do this at all* to 4 = *I usually do this a lot*). These items comprise 15 subscales, each with four items: positive reinterpretation and growth, mental disengagement, focus on and venting of emotions, use of instrumental social support, active coping, denial, religious coping, humor, behavioral disengagement, restraint, use of emotional social support, substance use, acceptance, suppression of competing activities, and planning. Each subscale score is calculated as a sum of its individual items, with higher scores indicating higher utilization of that type of coping strategy. After subscale scores are calculated, factor analysis will be utilized to identify second-order factors as has been done in previous studies (Brooks et al., 2018; Carver et al., 1989; Litman, 2006). In previous studies, three factors have consistently presented, problem-focused/active coping, emotion-focused/emotional coping, and unhealthy/avoidant coping. Test-retest reliability for two separate samples, one after 8 weeks and another after 6 weeks, averaged .63 for the subscales, with no subscales below .42 (Carver et al., 1989), and alpha-reliability averaged .79, with no subscales below .59 (Carver, 2013). In the current study, the Cronbach alpha coefficient was .91. The COPE inventory has shown strong

correlations with conceptually linked measures of personality characteristics, such as self-esteem, self-efficacy, and emotional-regulation (Carver et al., 1989).

Adult Attachment Scale

The Revised Adult Attachment Scale (Collins, 1996) was utilized to assess participants' attachment styles. This measure was chosen over other measures of adult attachment due to its incorporation of positive aspects of adult attachment rather than conceptualizing individuals' attachment solely on spectrums of attachment anxiety and avoidance. The 18-item measure lists common responses to and feelings regarding relationships (e.g., I am comfortable depending on others) and asks participants to rate these items based on how they generally feel in close relationships in their lives (1 = *Not at all characteristic of me* to 5 = *Very characteristic*). These items comprise three subscales, each with six items: close (the extent to which a person is comfortable with closeness and intimacy), depend (the extent to which a person feels they can depend on others to be available when needed), and anxiety (the extent to which a person is worried about being rejected or unloved). Prior to calculating scores for this measure, Items 2, 7, 8, 13, 16, 17, and 18 must be reverse scored. After these items have been reverse scored, subscale scores are calculated by averaging their individual items, with higher scores indicating increased levels of the corresponding attachment characteristic. Alpha-reliabilities for the subscales are .69, .75, and .72, respectively (Collins & Read, 1990), and 2-month test-retest reliability of .61, .71, and .52, respectively. In the current study, the Cronbach alpha coefficient was .64. The Adult Attachment Scale has been shown to be able to discriminate between securely-attached individuals and anxiously-attached individuals, and it is also correlated with other measures of adult attachment, such as measures specifically examining adult romantic

relationships and examining the past patterns of childhood attachment in adults (Collins & Read, 1990).

Procedure

Participants were recruited from the undergraduate and graduate student population of TWU with primary recruitment occurring via the university's SONA online system and through undergraduate psychology courses. All recruitment utilized a standardized post providing a brief description of the study purpose and risks (see Appendix G). A minimum of 75 participants was required in order to provide sufficient statistical power for analyses with five independent variables; however, a larger sample was recruited ($N = 116$) in order to account for potential outliers, incomplete data sets, and to increase generalizability of the results. Data was collected through TWU's license with PsychData, an online platform for research data collection. Participants were first prompted to read and indicate acceptance of the informed consent document (see Appendix F) before completing the measures in the order previously identified. After the required number of participants had been reached, data collection was concluded, and the data was exported to IBM SPSS Statistics for analysis. This study was approved by, and conducted in accordance with the policies of, TWU's Institutional Review Board (IRB-FY2021-86).

Statistical Analyses

After exporting the data for analysis, responses on the question examining trauma type were recoded into two categories, interpersonal and other, to reflect the theoretical model examined by the hypotheses. In addition, participants' scores on study measures and subscales were calculated. Factor analysis was utilized to identify second-order factors of COPE scores in order to provide measures of the coping styles within the statistical model. This analysis was

conducted by first calculating subscale scores on the COPE scale, and then submitting these scores to an iterated principal axis factor analysis with oblique rotation, resulting in the emergence of five broader coping styles, each composed of multiple strategies. Descriptive analyses were run on demographic and primary study variables. A path analysis via a series of linear, multiple regression analyses was conducted to determine the validity of the theoretical model. The assumptions for each analysis were checked prior to conducting the regression, including examining the correlations between identified independent variables and checking the data for outliers, normality, linearity, and homoscedasticity.

The first regression analysis identified PTG as the dependent variable with age of first experience of trauma, frequency of traumatic experiences, type of trauma, avoidant coping style, and anxious attachment as independent variables. The outcome of this analysis provided information on the direct effect these independent variables have on PTG. A second regression analysis identified avoidant coping style as the dependent variable and age of first experience of trauma, type of trauma, and frequency of traumatic experiences as the independent variables. The final regression analysis identified anxious attachment as the dependent variable and age of first experiences of trauma, type of trauma, and frequency of traumatic experiences as independent variables. The latter two analyses provided information necessary to determine the indirect effect that variables associated with trauma have on PTG. The path coefficients identified by these analyses were then utilized to develop an output diagram from the theoretical model. Afterward, bivariate correlations were examined between all primary study scale and subscale scores in order to determine if exploratory analyses examining the theoretical model with alternate attachment and coping styles included would be appropriate.

CHAPTER IV

RESULTS

Descriptive Statistics

A total of 116 students from the initial sample of 125 students recruited from TWU to participate in this study were eligible to participate in the study and completed all study measures. The sample was predominantly composed of individuals who identified as female ($n = 111, 95.7\%$; male: $n = 5, 4.3\%$) with a mean reported age of 20.58 ($SD = 5.08$; Range = 18-49). Due to the relatively small number of males within the sample, all primary study analyses were run first with the full sample then again with the males removed from the sample. No significant differences were found between these separate analyses, and the results included reflect the analyses run with the full sample. A number of self-reported ethnicities were represented, including White/European American ($n = 32, 27.6\%$), Black/African American/Caribbean American ($n = 23, 19.8\%$), Latinx/Hispanic/Latin American ($n = 33, 28.4\%$), Asian/Asian American/South Asian ($n = 19, 16.4\%$), and Other ($n = 9, 7.7\%$). Many of the participants were first-year students who reported that their highest level of education was high school ($n = 50, 43.1\%$), with the majority reporting having completed some college course work ($n = 53, 45.7\%$). A smaller subset had completed an associate's ($n = 10, 8.6\%$) or bachelor's ($n = 2, 1.7\%$) degree, with only a single participant reporting having completed a master's degree. The majority of participants reported that their first experience of trauma occurred before the age of 18 ($n = 100, 86.2\%$, adulthood: $n = 16, 13.8\%$) with a mean number of lifetime traumatic experiences of 3.91 ($SD = 2.73$). Approximately one quarter of the sample reported that their most significant experience of trauma would be classified as interpersonal trauma ($n = 31, 26.7\%$) with the majority of the sample reporting other types of traumatic experiences.

Data Preparation

After exporting the data for analysis, responses to the question examining trauma type were recoded into two categories, interpersonal and other, to reflect the theoretical model examined by the hypotheses. Recoding was also necessary in order to utilize a categorical variable in regression analyses. In addition, participants' scores on study measures and subscales were calculated. Factor analysis was utilized to identify second-order factors of COPE scores in order to provide measures of the coping styles within the statistical model. This analysis was conducted by first calculating scale scores on the COPE scale, and then submitting these scores to an iterated principal axis factor analysis with oblique rotation, resulting in the emergence of five factors with an eigenvalue greater than 1, labeled as active coping, avoidant coping, externalizing coping, acceptance coping, and emotional/social coping. Following these initial steps, a path analysis was conducted via a series of linear, multiple regression analyses in order to test the validity of the theoretical model.

Assumptions

Each analysis examined a different portion of the theoretical model and its' corresponding hypotheses. As a result, the assumptions for each were examined separately prior to proceeding with the analyses. The first regression analysis examined the direct pathways leading to PTG by identifying this as the dependent variable, with age of first experience of trauma, frequency of traumatic experiences, type of trauma, avoidant coping style, and anxious attachment as independent variables. Scatterplots verified the linearity of the relationships between the dependent and independent variables, and normality and homoscedacity were supported by the P-P plot and standardized residual plot, respectively. The Durbin-Watson statistic indicated the independence of residuals (Durbin-Watson = 1.71), and collinearity

statistics did not show multicollinearity (see Table 1). A second regression analysis, examining the pathways between experiences of trauma and coping style, identified avoidant coping style as the dependent variable and age of first experience of trauma, type of trauma, and frequency of traumatic experiences as the independent variables. Scatterplots verified the linearity of the relationships between the dependent and independent variables, and normality and homoscedacity were supported by the P-P plot and standardized residual plot, respectively. The Durbin-Watson statistic indicated the independence of residuals (Durbin-Watson = 1.89), and collinearity statistics did not show multicollinearity (see Table 1). The final regression analysis examined the final pathways of the theoretical model, identifying anxious attachment as the dependent variable and age of first experiences of trauma, type of trauma, and frequency of traumatic experiences as independent variables. Scatterplots verified the linearity of the relationships between the dependent and independent variables, and normality and homoscedacity were supported by the P-P plot and standardized residual plot, respectively. The Durbin-Watson statistic indicated the independence of residuals (Durbin-Watson = 1.87), and collinearity statistics did not show multicollinearity (see Table 1).

Table 1*Collinearity Statistics of Regression Analyses*

Independent Variables	Tolerance	VIF
Analysis 1		
Age	.93	1.08
Type	.93	1.08
Frequency	.92	1.09
Avoid	.77	1.30
Anxious	.73	1.37
Analysis 2		
Age	.98	1.03
Type	.93	1.08
Frequency	.94	1.06
Analysis 3		
Age	.98	1.03
Type	.93	1.08
Frequency	.94	1.06

Note. Age = Age of first experience of trauma, Type = Type of most significant traumatic experience, Frequency = Number of lifetime experiences of trauma, Avoid = Avoidant coping style, Anxious = Anxious attachment.

Regression Analyses

The initial regression analysis indicated that the direct pathways of the model were a significant predictor of PTG ($F(5,110) = 3.06, p = .01$) and that the identified trauma characteristics, anxious attachment, and avoidant coping together accounted for approximately 12.2% of the variance in PTG. Only the age of first experience of trauma ($p = .01$) and frequency of traumatic experiences ($p = .01$) contributed significantly to this model, and type of traumatic

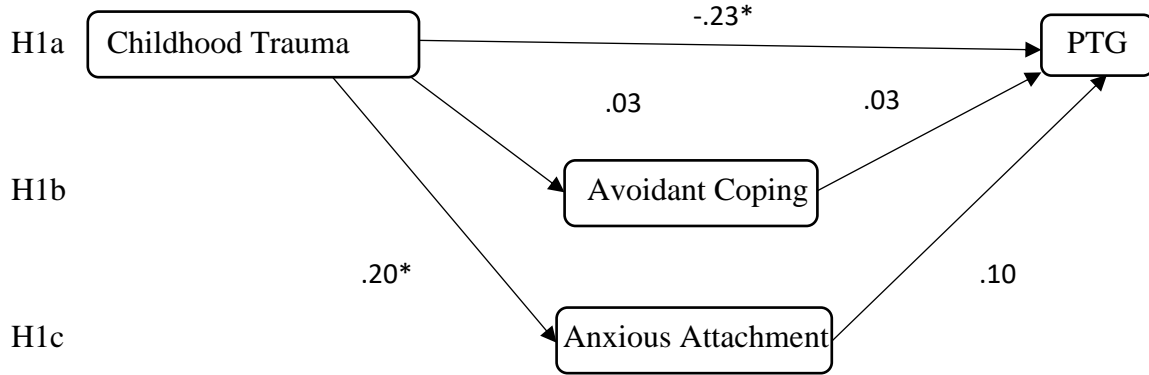
experience ($p = .23$), avoidant coping ($p = .75$), and anxious attachment ($p = .36$) did not. The second regression analysis did not indicate that the identified trauma characteristics were a significant predictor of avoidant coping ($F(3,112) = .176, p = .91$), and this model accounted for less than 1% of the variance in this coping style. The final regression analysis also indicated that these characteristics were not a significant predictor of anxious attachment ($F(3,112) = 2.23, p = .09$), but this model accounted for approximately 5.6% of the variance in anxious attachment. Within this analysis, age of first experience of trauma ($p = .03$) provided a significant contribution while type of traumatic experience ($p = .78$) and frequency of traumatic experiences ($p = .21$) did not.

Output Diagrams

The path coefficients provided by the regression analyses were entered into the theoretical model to develop output diagrams (see Figures 2-4). Although the study variables were analyzed as factors within a single theoretical model (see Figure 1), the provided output diagrams have been separated to show each research question independently for ease of viewing the findings. Each diagram examines an individual research question and its associated hypotheses.

Figure 2

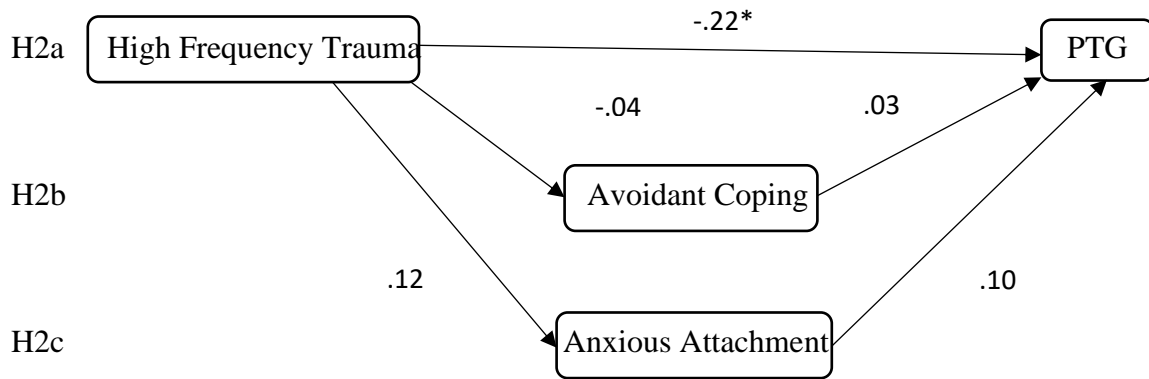
Research Question 1



Note. $* p < .05$

Figure 3

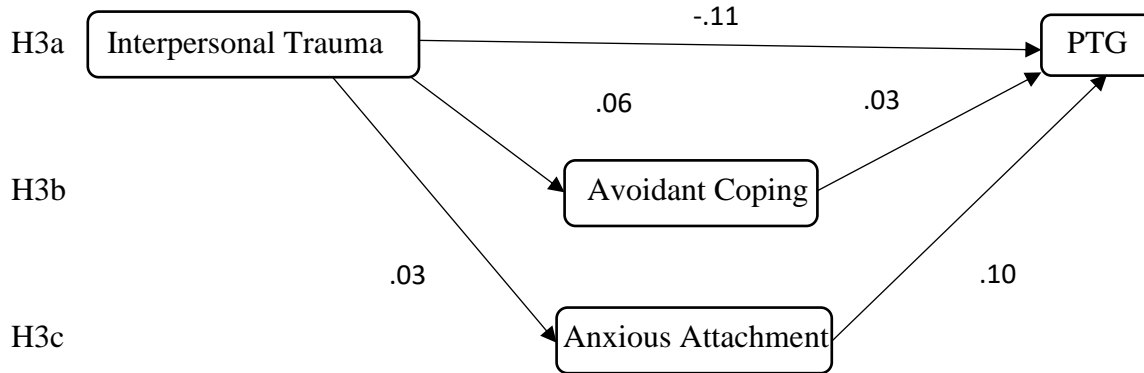
Research Question 2



Note. $* p < .05$

Figure 4

Research Question 3



Note. * $p < .05$

Exploratory Analyses

Bivariate correlations were conducted between PTG, all attachment scales, and all coping styles in order to identify any significant relationships not explored by the current study's theoretical model (see Table 2). As all subscales of PTG were significantly correlated with each other and all displayed similar patterns of correlation to other subscales, only the overall PTG scale score was included in further exploratory analyses. Attachment closeness, active coping, externalizing coping, passive coping, and emotional coping were all significantly related to PTG ($p < .01$). As attachment closeness and active coping are conceptually opposite to attachment anxiety and avoidant coping, an additional multiple regression analysis was run to determine if a reverse theoretical model would increase predictive power. By identifying PTG as the dependent variable and age of first experience of trauma, frequency of traumatic experiences, type of trauma, active coping style, and close attachment as independent variables, this model was also found to significantly predict PTG ($F(5,110) = 8.89, p < .01$) while increasing the amount of variance accounted for to approximately 28.8%.

Table 2*Bivariate Correlations*

	1	2	3	4	5	6	7	8	9
1. PTG									
2. Close	.31**								
3. Depend	.18	.61**							
4. Anxious	.03	-.28**	-.43**						
5. Active	.43**	.10	.01	.13					
6. Avoid	.07	-.1	-.31**	.46**	.09				
7. External	.25**	.12	-.01	.06	.18	.17			
8. Passive	.53**	.12	-.02	.19*	.46**	.08	.35**		
9. Emotion	.40**	.32**	.14	.33**	.60**	.19*	.25**	.39**	
<i>M</i>	93.11	2.93	2.63	3.51	9.55	8.29	8.13	12.10	9.35
<i>SD</i>	25.08	.86	.83	1.01	2.52	1.96	2.03	2.34	2.60

Note. PTG = Posttraumatic growth, Close = Attachment closeness, Depend = Attachment

dependence, Anxious = Attachment anxiety, Active = Active coping style, Avoid = Avoidant

coping style, External = Externalizing coping style, Passive = Passive coping style, Emotion =

Emotional/social coping style.

* $p < .05$, ** $p < .01$

CHAPTER V

DISCUSSION

Summary

As seen in the output diagrams, Research Question 3 and all of its hypotheses were rejected by the results of this study, and neither Research Question 1 or Research Question 2 was fully supported. These findings seem to support previous studies that found that experiences of interpersonal trauma, specifically sexual assault, were more likely to result in negative outcomes than in PTG (Shakespeare-Finch & Armstrong, 2010), although a strong, negatively-predictive relationship was not found. While experiences of trauma in childhood negatively predicted PTG and positively predicted anxious attachment directly, neither anxious attachment or avoidant coping was significantly predictive of PTG, indicating that the indirect effects of childhood trauma, if any, involve factors other than those proposed by the theoretical model. Although nonsignificant, it is possible that the unexpectedly positive relationship between avoidant coping and PTG is reflective of the mediatory role identified for this type of coping in Brooks et al.'s (2018) study. For individuals who experienced traumatic events in childhood and have not yet begun to process this trauma, avoidant coping could be associated, however weakly, with the potential for PTG. Perhaps as individuals begin to process trauma, their coping style would reflect a more active style with a stronger relationship with PTG.

Higher frequency of traumatic experiences also negatively predicted PTG directly without significant indirect effects along the identified pathways. This finding is consistent with previous studies which indicated that chronic experiences of trauma predicted negative mental health outcomes (Larson et al., 2017). Overall, these results provide only inconsistent support for the direct impact of these trauma characteristics on PTG and no significant evidence of an

indirect effect via the identified attachment and coping styles; however, a number of factors must be considered when interpreting these results. The mean age of the participants was approximately 20 years old, and the cut-off age for experiences of childhood trauma was 17 years old. For the population comprising this sample, their experiences of trauma would have almost certainly occurred in childhood due to only having lived a few years past this age. Perhaps this merely supports the prevalence of childhood experiences of trauma; however, in a population comprising a wider range of ages, this pattern might shift.

One of the steps taken to minimize risk of harm or inadvertent triggering of participants was to provide response ranges for the question concerning age of first experience of trauma, either before or after the age of 18. The majority of the participants in this study indicated that their first experiences occurred prior to the age of 18 (86.2%), and it is possible that categorizing the variable in this way overgeneralized the impact of experiences over different periods of childhood and adolescence. In addition, relatively few participants reported experiences of interpersonal trauma (26.7%), which might have impacted the relative effect of this variable on the study analyses. Finally, data collection for this study took place early in the spring semester of 2021, a period of time encompassing the end of the first year of the global COVID-19 pandemic, including periods of lockdown, prolonged social isolation, and chronic, significant stress and anxiety. This global pandemic has impacted coping and mental health in ways that the literature is just beginning to explore (Shigeto et al., 2021), and the chronic stress, burnout, and restricted access to many coping methods might have impacted participants' views towards both trauma and coping during data collection. Even individuals with traditionally secure attachment styles likely experienced struggles with connection and feelings of isolation during periods of self-isolation and quarantine.

The most significant findings in this study arose from the exploratory analyses conducted following the rejection of most study hypotheses, specifically that a much stronger connection was found between PTG and other attachment and coping styles. Conceptually, healthier and more adaptive strategies for coping and relating to others would lend themselves toward the development of a positive, strengths-based construct such as PTG; however, it was expected that less healthy, maladaptive patterns would result in a significant, negative relationship with PTG rather than reflecting a much smaller, but still positive, connection. It is possible that this discrepancy between expected and actual results supports the assertion made by a small number of previous studies concerned about inflated, or illusory, growth resulting from the structure of this measure of PTG, rather than actual growth experiences (Boals & Schuler, 2019). Another possible explanation for this discrepancy between expected and observed results lies with the relatively skewed demographic representation of this sample population; however, none of the demographic variables correlated significantly with any other study variable, decreasing the likelihood that the demographic variables adequately explain this discrepancy.

Implications

Unfortunately, due to the relative lack of significant findings and weakness of the study's proposed theoretical model, the implications that can be drawn are somewhat limited. Additional development of the model would be beneficial, as the literature supports relationships between the identified study variables, including examining the potential for moderating or mediating relationships. Future studies examining the discrepancy between the expected and the obtained results, particularly the nonsignificant relationships between anxious attachment, avoidant coping, and PTG, are recommended. Type of trauma was not found to significantly predict PTG when limited to experiences of interpersonal trauma, but an exploration of potential between-

groups differences in how experiences of various types of trauma impact individuals could provide additional direction for future studies.

As this study might lead to different results when conducted with different sample populations, future studies with broader recruitment methods are recommended. These future studies would also benefit from modifications of the methodology, such as incorporating a screening interview to better understand and categorize participants' experiences of trauma. Previous studies have proposed mediation or moderation relationships between the identified study variables, and future studies should include these analyses within their design to attempt to reproduce those studies' findings in addition to exploring novel relationships.

Similar to the implications for theory and research, this study's implications for practice are more focused than broadly applicable and primarily indicate a starting place for exploration of how clients' experiences of trauma might impact their ability to experience PTG. The results of the exploratory analyses highlight the impact of both attachment and coping style on PTG, indicating that helping clients to strengthen and deepen their connection to supportive individuals in their lives will further increase the potential for growth and progress in addition to any work done within the therapeutic space. However, this is not meant to imply that the work done in therapy is without benefit, as each identified coping style other than avoidant coping was significantly related to PTG, supporting the importance of addressing experiences of trauma. Additionally, the range of coping styles is similar to the variety of therapeutic approaches to working with trauma, suggesting that each of these approaches contains the potential for growth above and in addition to the traditional goals of symptom reduction. Finally, although avoidant coping was not significantly related to PTG, this study did find a small, positive relationship between these two variables, indicating that this coping style is not exclusively maladaptive. This

highlights the importance of honoring clients' existing coping skills when beginning therapy, even those types of coping which would normally be characterized as unhealthy.

Limitations

One of the primary limitations of this study lies in the ability of the proposed theoretical model to predict PTG. Although the direct pathways of the model predicted PTG at a significant level, this model only accounted for 12.2% of the variance in this measure, and exploratory analyses with other subscales only increased this amount to 28.8%. These results clearly indicate that other factors not measured or controlled for by this study contribute substantially to differences in the development of PTG, likely including individual personality characteristics such as resilience. The self-report nature of participants' report of trauma also introduces a significant amount of variability which could perhaps be better controlled for with a screening interview in place of the screening questionnaire.

In addition, the nature of the sample population significantly limits the potential generalizability of the findings, as the participants were relatively homogenous in terms of age, gender, and stage of life and were recruited from a single university. The vast majority of the sample identified as female, perhaps merely reflective of the broader university population from which the sample was recruited or perhaps reflective of males underreporting trauma due to stigma or gender socialization. The relatively young age of the sample, with approximately 70% of the sample falling under the age of 20, also presents a significant limitation. Not only does this impact the likelihood of reporting experiences of trauma occurring before the age of 18, as discussed above, but this indicates that the majority of the study sample falls within the developmental period of adolescence/emerging adulthood, a period of growth and identity development with potential implications for attachment and coping style. As a result, the broader

implications of this study are further constrained. Finally, aspects of the study's design inadvertently contribute to limitations, such as the previously discussed impact of the steps taken to reduce risk or accidental triggering of participants. The method of data collection also reflects a potential limitation, as participants could complete study measures at any location with a computer and access to the internet, and distractions or other potential confounds might be present.

Conclusions

In recent years, the study of trauma has undergone a broad shift from focusing on the negative impacts of traumatic experiences to an exploration of the potential for positive growth and development stemming from the process of struggling with significant life stressors. The current study built on the growing body of literature to propose a theoretical model for how commonly identified characteristics of trauma might predict PTG, both directly and indirectly via attachment and coping style. Of the proposed characteristics, only age of first experience of trauma and frequency of traumatic experiences were found to significantly contribute to the model's predictive ability, and none of the indirect pathways were supported. Exploratory analyses found that the model's predictive ability was strengthened when substituting active coping style and close attachment for avoidant coping style and anxious attachment; however, additional research would be beneficial to explore identified discrepancies in the predictive nature of the relationships in the initial model, positive rather than negative. While this study provides optimistic implications for the potential development of PTG in therapeutic work, it also illustrates that the factors contributing to this construct are more varied and nuanced than the proposed theoretical model. Future studies are necessary to further understand the nature of this

positive growth in order to better promote its development in clients who have experienced trauma.

REFERENCES

- Allen, B., & Lauterbach, D. (2007). Personality characteristics of adult survivors of childhood trauma. *Journal of Traumatic Stress, 20*(4), 587-595. <https://doi.org/10.1002/jts.20195>
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.).
- Arikan, G., Stopa, L., Carnelley, K. B., & Karl, A. (2016). The associations between adult attachment, posttraumatic symptoms, and posttraumatic growth. *Anxiety, Stress, & Coping, 29*(1), 1-20. <https://doi.org/10.1080/10615806.2015.1009833>
- Ávila, M., Coimbra, J. L., Park, C. L., & Matos, P. M. (2017). Attachment and posttraumatic growth after breast cancer: A dyadic approach. *Psycho-Oncology, 26*(11), 1929-1935. <https://doi.org/10.1002/pon.4409>
- Barazzone, N., Santos, I., McGowan, J., & Donaghay-Spire, E. (2019). The links between adult attachment and post-traumatic stress: A systematic review. *Psychology & Psychotherapy: Theory, Research, & Practice, 92*(1), 131-147. <https://doi.org/10.1111/papt.12181>
- Barlow, M. R., & Hetzel-Riggin, M. D. (2018). Predicting posttraumatic growth in survivors of interpersonal trauma: Gender role adherence is more important than gender. *Psychology of Men & Masculinity, 19*(3), 446–456. <https://doi.org/10.1037/men0000128>
- Bellet, B. W., Jones, P. J., Neimeyer, R. A., & McNally, R. J. (2018). Bereavement outcomes as causal systems: A network analysis of the co-occurrence of complicated grief and posttraumatic growth. *Clinical Psychological Science, 6*(6), 797–809. <https://doi.org/10.1177/2167702618777454>

- Bellur, Z., Aydin, A., & Alpay, E. H. (2018). Mediating role of coping styles in personal, environmental and event related factors and posttraumatic growth relationships in women with breast cancer. *Turkish Journal of Clinical Psychiatry, 21*, 38-51.
<https://doi.org/10.5505/kpd.2018.65365>
- Blix, I., Birkeland, M. S., & Thoresen, S. (2020). Vivid memories of distant trauma: Examining the characteristics of trauma memories and the relationship with the centrality of event and posttraumatic stress 26 years after trauma. *Applied Cognitive Psychology, 34*(3), 678-684. <https://doi.org/10.1002/acp.3650>
- Boals, A., & Schuler, K. (2019). Shattered cell phones, but not shattered lives: A comparison of reports of illusory posttraumatic growth on the Posttraumatic Growth Inventory and the Stress-Related Growth Scale-Revised. *Psychological Trauma: Theory, Research, Practice and Policy, 11*(2), 239–246. <https://doi.org/10.1037/tra0000390>
- Boals, A., & Schuettler, D. (2011). A double-edged sword: Event centrality, PTSD, and posttraumatic growth. *Applied Cognitive Psychology, 25*(5), 817-822.
<https://doi.org/10.1002/acp.1753>
- Bollinger, A. R., Riggs, D. S., Blake, D. D., & Ruzek, J. I. (2000). Prevalence of personality disorders among combat veterans with Posttraumatic Stress Disorder. *Journal of Traumatic Stress, 13*(2), 255-270. <https://doi.org/10.1023/A:1007706727869>
- Bradley, R. & Westen, D. (2005). The psychodynamics of Borderline Personality Disorder: A view from developmental psychopathology. *Development and Psychopathology, 17*, 927-957. <https://doi.org/10.1017/S0954579405050443>

- Brewin, C. R., Dalgleish, T., & Joseph, S. (1996). A dual representation theory of Posttraumatic Stress Disorder. *Psychological Review*, *103*(4), 670-686.
<https://doi.org/2079/10.1037/0033-295X.103.4.670>
- Brooks, M., Graham-Kevan, N., Robinson, S. J., & Lowe, M. (2018). Trauma characteristics and posttraumatic growth: The mediating role of avoidance coping, intrusive thoughts, and social support. *Psychological Trauma Theory Research Practice and Policy*, *11*(2), 232-238. <https://doi.org/10.1037/tra0000372>
- Brosi, M., Rolling, E., Gaffney, C., & Kitch, B. (2020). Beyond resilience: Glimpses into women's posttraumatic growth after experiencing intimate partner violence. *American Journal of Family Therapy*, *48*(1), 1-15. <https://doi.org/10.1080/01926187.2019.1691084>
- Buetow, S., & Wallis, K. (2019). The beauty in perfect imperfection. *Journal of Medical Humanities*, *40*(3), 398-394. <https://doi.org/10.1007/s10912-017-9500-2>
- Cahill, S. P. & Foa, E. B. (2007). Psychological theories of PTSD. In M. J. Friedman, T. M. Keane, & P. A. Resick (Eds.) *Handbook of PTSD, first edition: science and practice* (pp. 55-77). The Guilford Press.
- Carver, C. S. (2013). *COPE Inventory* [Measurement instrument].
www.midss.ie
- Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology*, *56*(2), 267-283. <https://doi.org/0022-3514/89>

- Choi, S., & In, H. (2020). Paths from core belief disruption to post-traumatic stress symptoms and post-traumatic growth among Korean undergraduates: The mediating role of rumination. *International Journal of Psychology, 55*(2), 215-223.
<https://doi.org/10.1002/ijop.12578>
- Cloitre, M., Stolbach, B. C., Herman, J. L., van der Kolk, B., Pynoos, R., Wang, J., & Petkova, E. (2009). A developmental approach to complex PTSD: Childhood and adult cumulative trauma as predictors of symptom complexity. *Journal of Traumatic Stress, 22*(5), 399-408. <https://doi.org/10.1002/jts.20444>
- Cohen, L. J., Ardan, F., Tanis, T., Halmi, W., Galynker, I., Von Wyl, A., & Hengartner, M. P. (2017). Attachment anxiety and avoidance as mediators of the association between childhood maltreatment and adult personality dysfunction. *Attachment & Human Development, 19*(1), 58-75. <https://doi.org/10.1080/14616734.2016.1253639>
- Collins, N. L. (1996). Working models of attachment: Implications for explanation, emotion, and behavior. *Journal of Personality and Social Psychology, 71*(4), 810-832.
<https://doi.org/0022-3514/96>
- Collins, N. L., & Read, S. J. (1990). Adult attachment, working models, and relationship quality in dating couples. *Journal of Personality and Social Psychology, 58*(4), 644-663.
<https://doi.org/0022-3514/90>
- Dagan, Y., & Yager, J. (2019). Posttraumatic growth in complex PTSD. *Psychiatry: Interpersonal & Biological Processes, 82*(4), 329-344.
<https://doi.org/10.1080/00332747.2019.1639242>

- Drapeau, C. W., Moore, M., Cerel, J., & Lockman, J. D. (2019). Predictors of posttraumatic growth in adults bereaved by suicide. *Crisis, 40*(3), 196-202.
<https://doi.org/10.1027/0227-5910/a000556>
- Dyball, D., Evans, S., Boos, C. J., Stevelink, S. A. M., & Fear, N. T. (2019). The association between PTSD and cardiovascular disease and its risk factors in male veterans of the Iraq/Afghanistan conflicts: A systematic review. *International Review of Psychiatry, 31*(1), 34-48. <https://doi.org/10.1080/09540261.2019.1580686>
- Folkman, S., & Moskowitz, J. T. (2004). Coping: Pitfalls and promise. *Annual Review of Psychology, 55*(1), 745-774. <https://doi.org/10.1146/annurev.psych.55.090902.141456>
- Glad, K. A., Kilmer, R. P., Dyb, G., & Hafstad, G. S. (2019). Caregiver-reported positive changes in young survivors of a terrorist attack. *Journal of Child and Family Studies, 28*(3), 704–719. <https://doi.org/10.1007/s10826-018-1298-7>
- Gradus, J. L. (2020, August 10). *Epidemiology of PTSD*. U.S. Department of Veterans Affairs. [https://www.ptsd.va.gov/professional/treat/essentials/epidemiology.asp#:~:text=The%20NCS%2DR%20estimated%20the,%25%20among%20women%20\(3\).](https://www.ptsd.va.gov/professional/treat/essentials/epidemiology.asp#:~:text=The%20NCS%2DR%20estimated%20the,%25%20among%20women%20(3).)
- Goldberg, L. D., McDonald, S. D., & Perrin, P. B. (2019). Predicting trajectories of posttraumatic growth following acquired physical disability. *Rehabilitation Psychology, 64*(1), 37–49. <https://doi.org/10.1037/rep0000247>
- Hagenaars, M. A., Fisch, I., & van Minnen, A. (2011). The effect of trauma onset and frequency on PTSD-associated symptoms. *Journal of Affective Disorders, 132*(1), 192-199.
<https://doi.org/10.1016/j.jad.2011.02.017>

- Hasselle, A. J., Schwartz, L. E., Berlin, K. S., & Howell, K. H. (2019). A latent profile analysis of coping responses to individuals' most traumatic event: Associations with adaptive and maladaptive mental health outcomes. *Anxiety, Stress, and Coping*, 32(6), 626-640. <https://doi.org/10.1080/10615806.2019.1638733>
- Hefner, K., & Rosenheck, R. (2019). Multimorbidity among veterans diagnosed with PTSD in the Veterans Health Administration nationally. *Psychiatric Quarterly*, 90(2), 275-291. <https://doi.org/10.1007/s11126-019-09632-5>
- Infurna, F. J., & Eranda, J. (2019). Fixing the growth illusion: New directions for research in resilience and posttraumatic growth. *Current Directions in Psychological Science*, 28(2), 152-158. <https://doi.org/10.1177%2F0963721419827017>
- Irit, R., & Nuttman-Schwartz, O. (2019). Coping styles and aggregate coping styles: Responses of older adults to a continuous traumatic event. *Journal of Loss & Trauma*, 24(2), 159-176. <https://doi.org/10.1080/15325024.2018.1560900>
- Kahl, J., Holl, J., Grundmann, J., Lotzin, A., Hiller, P., Schroeder, K., Schulte, B., Barnow, S., & Schafer, I. (2020). Emotion regulation as a mediator between childhood abuse and neglect and posttraumatic stress disorder in women with substance use disorders. *Substance Use & Misuse*, 55(13), 2184-2193. <https://doi.org/10.1080/10826084.2020.1797805>
- Karatzias, T., Shevlin, M., Hyland, P., Brewin, C. R., Cloitre, M., Bradley, A., Kitchiner, N. J., Jumbe, S., Bisson, J. I., & Roberts, N. P. (2018). The role of negative cognitions, emotion regulation strategies, and attachment style in complex post-traumatic stress disorder: Implications for new and existing therapies. *British Journal of Clinical Psychology*, 57(2), 177-185. <https://doi.org/10.1111/bjc.12172>

- Kelly, G., Morris, R., & Shetty, H. (2018). Predictors of post-traumatic growth in stroke survivors. *Disability and Rehabilitation*, *40*(24), 2916–2924.
<https://doi.org/10.1080/09638288.2017.1363300>
- Kılıç, C., Magruder, K. M., & Koryürek, M. M. (2016). Does trauma type relate to posttraumatic growth after war? A pilot study of young Iraqi war survivors living in Turkey. *Transcultural psychiatry*, *53*(1), 110–123. <https://doi.org/10.1177/1363461515612963>
- Koch, L. M. (2019). *Posttraumatic stress and posttraumatic growth among female victim/survivors of adult sexual assault: The importance of social reactions* [Unpublished doctoral dissertation]. University of California Santa Barbara.
<https://escholarship.org/uc/item/5qc7f1k3>
- Kunz, S., Joseph, S., Geyh, S., & Peter, C. (2018). Coping and posttraumatic growth: A longitudinal comparison of two alternative views. *Rehabilitation Psychology*, *63*(2), 240–249. <https://doi.org/10.1037/rep0000205>
- Larson, S., Chapman, S., Spetz, J., & Brindis, C. D. (2017). Chronic childhood trauma, mental health, academic achievement, and school-based health center mental health services. *Journal of School Health*, *87*(9), 675-686. <https://doi.org/10.1111/josh.12541>
- Lev-Ari, L., & Levi-Belz, Y. (2019). Interpersonal theory dimensions facilitate posttraumatic growth among suicide-loss survivors: An attachment perspective. *Death Studies*, *43*(9), 582-590. <https://doi.org/10.1080/07481187.2018.1504351>
- Levi, E., & Vachar, E. (2018). The moderating role of narcissism on the relationship between posttraumatic growth and PTSD symptoms. *Personality and Individual Differences*, *138*(1), 292-297. <https://doi.org/10.1016/j.paid.2018.10.022>

- Levi-Belz, Y., & Lev-Ari, L. (2019). Attachment styles and posttraumatic growth among suicide-loss survivors: The mediating role of interpersonal factors. *Crisis, 40*(3), 1-10. <https://doi.org/10.1027/0227-5910/a000550>
- Litman, J. A. (2006). The COPE inventory: Dimensionality and relationships with approach-and avoidance-motives and positive and negative traits. *Personality and Individual Differences, 41*, 273-284. <https://doi.org/10.1016/j.paid.2005.11.032>
- Luna, N., Horton, G., Newman, D., & Malloy, T. (2016). An empirical study of attachment dimensions and mood disorders in inpatient substance abuse clients: The mediating role of spirituality. *Addiction Research & Theory, 24*(3), 248-260. <https://doi.org/10.3109/16066359.2015.1119267>
- Mangelsdorf, J., Eid, M., & Luhmann, M. (2019). Does growth require suffering? A systematic review and meta-analysis on genuine posttraumatic and postecstatic growth. *Psychological Bulletin, 145*(3), 302-338. <https://doi.org/10.1037/bul0000173>
- Manove, E. E., Lowe, S. R., Bonumwezi, J., Preston, J., Waters, M. C., & Rhodes, J. E. (2019). Posttraumatic growth in low-income black mothers who survived hurricane Katrina. *American Journal of Orthopsychiatry, 89*(2), 144-158. <https://doi.org/10.1037/ort0000398>
- Marshall, E. M., & Frazier, P. A. (2019). Understanding posttrauma reactions within an attachment theory framework. *Current Opinion in Psychology, 25*, 167–171. <https://doi.org/10.1016/j.copsyc.2018.08.001>
- Mazor, Y., Gelkopf, M., & Roe, D. (2019). Posttraumatic growth in psychosis: Challenges to the assumptive world. *Psychological Trauma: Theory, Research, Practice, and Policy, 12*(1), 3–10. <https://doi.org/10.1037/tra0000443>

- McCaslin, S. E., Cloitre, M., Neylan, T. C., Garvert, D. W., Herbst, E., & Marmar, C. (2019). Factors associated with high functioning despite distress in post-9/11 veterans. *Rehabilitation Psychology, 64*(3), 377–382. <https://doi.org/10.1037/rep0000271>
- McCormack, L., & Issaakidis, G. L. (2018). Complex trauma in childhood; Psychological growth in adulthood: Making sense of the ‘lived’ experience of out-of-home-care. *Traumatology, 24*(2), 131–139. <https://doi.org/10.1037/trm0000139>
- Mikulincer, M., & Shaver, P. R. (2007). *Attachment in adulthood: Structure, dynamics, and change*. The Guilford Press.
- Morgan, J. K., & Desmarais, S. L. (2017). Associations between time since event and posttraumatic growth among military veterans. *Military Psychology, 29*(5), 456-463. <https://doi.org/10.1037/mil0000170>
- Morgan, J. K., Desmarais, S. L., Mitchell, R. M., & Simons-Rudolph, J. M. (2017). Posttraumatic stress, posttraumatic growth, and satisfaction with life in military veterans. *Military Psychology, 29*(5), 434-447. <https://doi.org/10.1037/mil0000182>
- Nishikawa, S., Fujisawa, T. X., Kojima, M., & Tomoda, A. (2018). Type and timing of negative life events are associated with adolescent depression. *Frontiers in Psychiatry, 9*, 41. <https://doi.org/10.5505/kpd.2018.65365>
- Nordstrand, A. E., Hjemdal, O., Holen, A., Reichelt, J. G., & Bøe, H. J. (2017). Measuring psychological change after trauma: Psychometric properties of a new bi-directional scale. *Psychological Trauma: Theory, Research, Practice and Policy, 9*(6), 696–705. <https://doi.org/10.1037/tra0000270>

- Pejuskovic, B., Lecic-Tosevski, D., & Toskovic, O. (2017). Longitudinal study of posttraumatic stress disorder in the community: Risk and recovery factors. *The Journal of Nervous and Mental Disease, 205*(2), 77-82.
<https://doi.org/10.1097/NMD.0000000000000624>
- Ping, Z., & Gray, M. J. (2018). Impact of trauma type and emotion on overgeneral autobiographical memory. *Journal of Loss & Trauma, 23*(7), 559-573.
<https://doi.org/10.1080/15325024.2018.1524616>
- Orejuela-Davis, A. I., Levens, S. M., Sagui-Henson, S. J., Tedeschi, R. G., & Scheppes, G. (2019). The relation between emotion regulation choice and posttraumatic growth. *Cognition & Emotion, 33*(8), 1709-1717.
<https://doi.org/10.1080/02699931.2019.1592117>
- Orkibi, H., & Ram-Vlasov, N. (2019). Linking trauma to posttraumatic growth and mental health through emotional and cognitive creativity. *Psychology of Aesthetics, Creativity, and the Arts, 13*(4), 416–430. <https://doi.org/10.1037/aca0000193>
- Ramos, C., Leal, I., Costa, P. A., Tapadinhas, A. R., & Tedeschi, R. G. (2018). An item-level analysis of the posttraumatic stress disorder checklist and the posttraumatic growth inventory and its associations with challenge to core beliefs and rumination. *Frontiers in Psychology, 9*, 2346. <https://doi.org/10.3389/fpsyg.2018.02346>
- Romero, D. H., Riggs, S. A., Raiche, E., McGuffin, J., & Captari, L. E. (2020). Attachment, coping, and psychological symptoms among military veterans and active duty personnel. *Anxiety, Stress, & Coping, 33*(3), 326-341.
<https://doi.org/10.1080/10615806.2020.1723008>

- Salokangas, R. K. R., Shultze-Lutter, F., Schmidt, S. J., Pesonen, H., Luutonen, S., Patterson, P., Graf von Reventlow, H., Heinimaa, M., From, T., & Hietala, J. (2020). Childhood physical abuse and emotional neglect are specifically associated with adult mental disorders. *Journal of Mental Health, 29*(4), 376-384.
<https://doi.org/10.1080/09638237.2018.1521940>
- Saunders, B. E., & Adams, Z. W. (2014). Epidemiology of traumatic experiences in childhood. *Child and Adolescents Psychiatric Clinics of North America, 23*(2), 167-184.
<https://doi.org/10.1016/j.chc.2013.12.003>
- Schneider, S., Rasul, R., Liu, B., Corry, D., Lieberman-Cribbin, W., Watson, A., Kerath, S. M., Taioli, E., & Schwartz, R. M. (2019). Examining posttraumatic growth and mental health difficulties in the aftermath of Hurricane Sandy. *Psychological Trauma: Theory, Research, Practice, and Policy, 11*(2), 127-136. <http://doi.org/10.1037/tra0000400>
- Shakespeare-Finch, J., & Armstrong, D. (2010). Trauma type and posttrauma outcomes: Differences between survivors of motor vehicle accidents, sexual assault, and bereavement. *Journal of Loss and Trauma, 15*(2), 69-82.
<https://doi.org/10.1080/15325020903373151>
- Sheline, K. T., & Rosén, L. A. (2017). Posttraumatic growth moderates suicide risk among trauma exposed undergraduates. *Journal of College Student Development, 58*(3), 402–412. <https://doi.org/10.1353/csd.2017.0030>
- Shigeto, A., Laxman, D. J., Landy, J. F., & Scheier, L. M. (2021). Typologies of coping in young adults in the context of the COVID-19 pandemic. *Journal of General Psychology, 148*(3), 272-304. <https://doi.org/10.1080/00221309.2021.1874864>

- Shuwiekh, H., Kira, I. A., & Ashby, J. S. (2018). What are the personality and trauma dynamics that contribute to posttraumatic growth? *International Journal of Stress Management*, 25(2), 181–194. <https://doi.org/10.1037/str0000054>
- Syed Sheriff, R., Van Hoof, M., Malhi, G., Grace, B., & McFarlane, A. (2019). Associations among childhood trauma, childhood mental disorders, and past-year posttraumatic stress disorder in military and civilian men. *Journal of Traumatic Stress*, 32(5), 712-723. <https://doi.org/10.1002/jts.22450>
- Tedeschi, R. G., & Calhoun, L. G. (1996). The posttraumatic growth inventory: Measuring the positive legacy of trauma. *Journal of Traumatic Stress*, 9(3), 455-471. <https://doi.org/10.1007/BF02103658>
- Tedeschi, R. G., & Calhoun, L. G. (2004). Posttraumatic growth: Conceptual foundations and empirical evidence. *Psychological Inquiry*, 15(1), 1-18. https://doi.org/10.1207/s15327965pli1501_01
- Tedeschi, R. G., Cann, A., Taku, K., Senol-Durak, E., & Calhoun, L. G. (2017). The posttraumatic growth inventory: A revision integrating existential and spiritual growth. *Journal of Traumatic Stress*, 30, 11-18. <https://doi.org/10.1002/jts.22155>
- Thomas, E. A., Hamrick, L. A., Owens, G. P., & Tekie, Y. T. (2020). Posttraumatic growth among undergraduates: Contributions from adaptive cognitive emotion regulation and emotional intelligence. *Traumatology*, 26(1), 68–73. <https://doi.org/10.1037/trm0000203>

- Tsai, J., Harpaz-Rotem, I., Pietrzak, R. H., & Southwick, S. M. (2017). Trauma resiliency and posttraumatic growth. In S. N. Gold (Ed.), *APA handbooks in psychology*®. *APA handbook of trauma psychology: Trauma practice* (p. 89–113). American Psychological Association. <https://doi.org/10.1037/0000020-005>
- Walsh, D. M. J., Morrison, T. M., Conway, R. J., Rogers, E. Sullivan, F. J., & Groarke, A. (2018). A model to predict psychological- and health- related adjustment in men with prostate cancer: The role of post traumatic growth, physical post traumatic growth, resilience and mindfulness. *Frontiers in Psychology, 9*, 136. <https://doi.org/10.3389/fpsyg.2018.00136>
- Wamser-Nanney, R., Howell, K. H., Schwartz, L. E., & Hasselle, A. J. (2018). The moderating role of trauma type on the relationship between event centrality of the traumatic experience and mental health outcomes. *Psychological Trauma Theory Research Practice and Policy, 10*(5), 499-507. <https://doi.org/10.1037/tra0000344>
- Wong, C. C. Y., & Yeung, N. C. Y. (2017). Self-compassion and posttraumatic growth: Cognitive processes as mediators. *Mindfulness, 8*, 1078-1087. <https://doi.org/10.1007/s12671-017-0683-4>
- Wu, X., Kaminga, A. C., Dai, W., Deng, J., Wang, Z., Pan, X., & Lu, A. (2019). The prevalence of moderate-to-high posttraumatic growth: A systematic review and meta-analysis. *Journal of Affective Disorders, 243*, 408-415. <https://doi.org/10.1016/j.jad.2018.09.023>
- Xu, W., Jiang, H., Zhou, Y., Zhou, L., & Fu, H. (2019). Intrusive rumination, deliberate rumination, and posttraumatic growth among adolescents after a tornado: The role of social support. *The Journal of Nervous and Mental Disease, 207*(3), 152-156. <https://doi.org/10.1097/NMD.0000000000000926>

Zeligman, M., Varney, M., Grad, R. I., & Huffstead, M. (2018). Posttraumatic growth in individuals with chronic illness: The role of social support and meaning making. *Journal of Counseling & Development, 96*(1), 53-63. <https://doi.org/10.1002/jcad.12177>

APPENDIX A
DEMOGRAPHIC QUESTIONNAIRE

Age: _____

Gender:

- a. Woman
- b. Man
- c. Transgender
- d. Genderqueer/Genderfluid/non-binary
- e. Self-identify

Ethnicity:

- a. White/European American
- b. Black/African American/Caribbean American
- c. Latinx/Hispanic/Latin American
- d. Asian/Asian American/South Asian
- e. Indigenous people/Native American/Pacific Islander
- f. Self-identify

Your highest degree earned:

- a. Did not complete high school
- b. High school
- c. Some college
- d. Associate's (2-year) degree
- e. Bachelor's (4-year) degree
- f. Master's degree

g. Doctoral degree or equivalent (Ph.D., M.D., J.D.)

Family Income:

Less than 25k

25-50k

51-75k

76-100k

More than 100k

Have you ever experienced an event in your life that you would consider traumatic, either a single event or recurring stressor, that caused a significant, negative impact in your life?

Yes

No

APPENDIX B

TRAUMA SURVEY

At what age was your first experience of trauma?

0-17 years old

18+ years old

How many traumatic events have you experienced in your lifetime?

1

2

3

4

5

6

7

8

9

10+

When thinking about the most significant traumatic experience in your life, what type of event was it? If multiple events come to mind, please choose the most impactful and significant when answering this question. If the event falls into more than one of the provided categories, please choose the category that best describes it or choose “Other.”

Loss (e.g. break-up, loss of a close relationship, death of a loved one, etc.)

Interpersonal (e.g. sexual assault, physical assault, etc.)

Military/combat (e.g. as a participant or bystander in a combat situation)

Natural disaster (e.g. hurricane, tornado, etc.)

Major life event (e.g. parents’ divorce, moving to a new country, etc.)

Illness (e.g. chronic illness, significant injury, etc.)

Other

APPENDIX C

POSTTRAUMATIC GROWTH INVENTORY

Indicate for each of the statements below the degree to which this change occurred in your life as a result of the identified traumatic event, using the following scale:

0 = I did not experience this change as a result of my traumatic event

1 = I experienced this change to a very small degree as a result of my traumatic event

2 = I experienced this change to a small degree as a result of my traumatic event

3 = I experienced this change to a moderate degree as a result of my traumatic event

4 = I experienced this change to a great degree as a result of my traumatic event

5 = I experienced this change to a very great degree as a result of my traumatic event

1. I changed my priorities about what is important in life.
2. I have a greater appreciation for the value of my own life.
3. I developed new interests.
4. I have a greater feeling of self-reliance.
5. I have a better understanding of spiritual matters.
6. I more clearly see that I can count on people in times of trouble.
7. I established a new path for my life.
8. I have a greater sense of closeness with others.
9. I am more willing to express my emotions.
10. I know better that I can handle difficulties.

11. I am able to do better things with my life.
12. I am better able to accept the way things work out.
13. I can better appreciate each day.
14. New opportunities are available which wouldn't have been otherwise.
15. I have more compassion for others.
16. I put more effort into my relationships.
17. I am more likely to try to change things which need changing.
18. I have a stronger religious faith.
19. I discovered that I'm stronger than I thought I was.
20. I learned a great deal about how wonderful people are.
21. I better accept needing others.
22. I have a greater sense of harmony with the world.
23. I feel more connected with all of existence.
24. I feel better able to face questions about life and death.
25. I have greater clarity about life's meaning.

APPENDIX D

COPE INVENTORY

This questionnaire asks you to indicate what you generally do and feel, when you experience stressful events. Obviously, different events bring out different responses, but think about what you usually do when you are under a lot of stress. Then, respond to each of the following items by choosing one of the responses listed below. Please try to respond to each item separately in your mind from each other item. Choose your answers thoughtfully, and make your answers as true FOR YOU as you can. Please answer every item. There are no “right” or “wrong” answers, so choose the most accurate answer for YOU—not what you think “most people” would say or do. Indicate what YOU usually do when YOU experience a stressful event.

1 = I usually don't do this at all

2 = I usually do this a little bit

3 = I usually do this a medium amount

4 = I usually do this a lot

1. I try to grow as a person as a result of the experience.
2. I turn to work or other substitute activities to take my mind off things.
3. I get upset and let my emotions out.
4. I try to get advice from someone about what to do.
5. I concentrate my efforts on doing something about it.
6. I say to myself “this isn't real.”
7. I put my trust in God.

8. I laugh about the situation.
9. I admit to myself that I can't deal with it and quit trying.
10. I restrain myself from doing anything too quickly.
11. I discuss my feelings with someone.
12. I use alcohol or drugs to make myself feel better.
13. I get used to the idea that it happened.
14. I talk to someone to find out more about the situation.
15. I keep myself from getting distracted by other thoughts or activities.
16. I daydream about things other than this.
17. I get upset and am really aware of it.
18. I seek God's help.
19. I make a plan of action.
20. I make jokes about it.
21. I accept that this has happened and that it can't be changed.
22. I hold off doing anything about it until the situation permits.
23. I try to get emotional support from friends or relatives.
24. I just give up trying to reach my goal.
25. I take additional action to try to get rid of the problem.
26. I try to lose myself for a while by drinking alcohol or taking drugs.
27. I refuse to believe that it has happened.
28. I let my feelings out.
29. I try to see it in a different light, to make it seem more positive.
30. I talk to someone who could do something concrete about the problem.

31. I sleep more than usual.
32. I try to come up with a strategy about what to do.
33. I focus on dealing with this problem and, if necessary, let other things slide a little.
34. I get sympathy and understanding from someone.
35. I drink alcohol or take drugs in order to think about it less.
36. I kid around about it.
37. I give up the attempt to get what I want.
38. I look for something good in what is happening.
39. I think about how I might best handle the problem.
40. I pretend that it hasn't really happened.
41. I make sure not to make matters worse by acting too soon.
42. I try hard to prevent other things from interfering with my efforts at dealing with this.
43. I go to movies or watch TV, to think about it less.
44. I accept the reality of the fact that it happened.
45. I ask people who have had similar experiences what they did.
46. I feel a lot of emotional distress and I find myself expressing those feelings a lot.
47. I take direct action to get around the problem.
48. I try to find comfort in my religion.
49. I force myself to wait for the right time to do something.
50. I make fun of the situation.
51. I reduce the amount of effort I'm putting into solving the problem.
52. I talk to someone about how I feel.
53. I use alcohol or drugs to help me get through it.

54. I learn to live with it.

55. I put aside other activities in order to concentrate on this.

56. I think hard about what steps to take.

57. I act as though it hasn't even happened.

58. I do what has to be done, one step at a time.

59. I learn something from the experience.

60. I pray more than usual.

APPENDIX E

ADULT ATTACHMENT SCALE

The following questions concern how you *generally* feel in *important, close relationships in your life*. Think about your past and present relationships with people who have been especially important to you, such as family members, romantic partners, and close friends. Respond to each statement in terms of how you *generally* feel in these relationships.

Please use the scale below to choose a number between 1 and 5 to respond to each statement.

1-----2-----3-----4-----5

Not at all **Very**
characteristic **characteristic**
of me **of me**

1. I find it relatively easy to get close to people.
2. I find it difficult to allow myself to depend on others.
3. I often worry that others don't really love me.
4. I find that others are reluctant to get as close as I would like.
5. I am comfortable depending on others.
6. I don't worry about people getting too close to me.
7. I find that people are never there when you need them.
8. I am somewhat uncomfortable being close to others.
9. I often worry that other people won't want to stay with me.
10. When I show my feelings for others, I'm afraid they will not feel the same about me.
11. I often wonder whether other people really care about me.

12. I am comfortable developing close relationships with others.
13. I am uncomfortable when anyone gets too emotionally close to me.
14. I know that people will be there when I need them.
15. I want to get close to people, but I worry about being hurt.
16. I find it difficult to trust others completely.
17. People often want me to be emotionally closer than I feel comfortable being.
18. I am not sure that I can always depend on people to be there when I need them.

APPENDIX F
INFORMED CONSENT
TEXAS WOMAN’S UNIVERSITY (TWU)
CONSENT TO PARTICIPATE IN RESEARCH

Title: Predicting Posttraumatic Growth: A Broader Perspective

Principal Investigator: James Kuciemba, M.A. jkuciemba@twu.edu 940/898-2303

Faculty Advisor: Claudia Porras Pyland, Ph.D. cporras@twu.edu 940/898-2303

Summary and Key Information about the Study

You are being asked to participate in a research study conducted by Mr. James Kuciemba, a student at Texas Woman’s University, as a part of his dissertation. The purpose of this research is to determine how characteristics of trauma, coping style, and relationship patterns predict posttraumatic growth. You have been invited to participate in this study because you are an adult who has potentially experienced a traumatic event in your lifetime. As a participant you will be asked to complete a series of multiple-choice surveys about trauma, methods of coping, and feelings about relationships. These assessments will be completed through PsychData, and your name will not be included to protect your confidentiality. The total time commitment for this study will be about 30 minutes. The greatest risk of this study is potential emotional discomfort. We will discuss this risk and the rest of the study procedures in greater detail below.

Your participation in this study is completely voluntary. If you are interested in learning more about this study, please review this consent form carefully and take your time deciding whether or not you want to participate. Please feel free to ask the researcher any questions you have about the study at any time.

Description of Procedures

As a participant in this study you will be asked to spend 30 minutes of your time completing a series of multiple-choice surveys about experiences of trauma, methods of coping with stress, and feelings about close relationships in your life. The assessments will be completed online through PsychData, and your name will not be requested in order to ensure confidentiality. In order to be a participant in this study, you must be at least 18 years of age or older and you must have experienced an event in your life that you would consider traumatic.

Potential Risks

The survey concerning traumatic experiences will ask you to think about and identify a specific traumatic event and then answer questions concerning that event. A possible risk in this study is discomfort with these questions you are asked. If you become tired or upset you may take breaks as needed. If you feel you need to talk to a professional about your discomfort, the researcher has provided you with a list of resources.

Another risk in this study is loss of confidentiality. Confidentiality will be protected to the extent that is allowed by law. Your name will not be attached to the data in any way, and a randomly generated ID number will be used for identification.

The data collected will be stored in a password protected file stored on a password protected USB drive and stored in a locked cabinet in the researcher's office. Only the researcher and his advisor will have access to the data. The data file will be destroyed within three years after the study is finished. The results of the study may be reported in scientific magazines or journals but your name or any other identifying information will not be included. There is a potential risk of loss of confidentiality in all email, downloading, electronic meetings and internet transactions.

The researchers will try to prevent any problem that could happen because of this research. You should let the researchers know at once if there is a problem and they will try to help you. However, TWU does not provide medical services or financial assistance for injuries that might happen because you are taking part in this research.

Participation and Benefits

By better understanding factors predictive of posttraumatic growth, this study hopes to contribute to the growing body of literature examining this construct and help provide valuable information informing growth-oriented, strengths-based treatment of trauma. Your involvement in this study is completely voluntary and you may withdraw from the study at any time. If you would like to know the results of this study you may email the principle investigator directly, and you will receive an email after completion of the study.

Questions Regarding the Study

You may print a copy of this consent form to keep for your records. If you have any questions about the research study you should ask the researchers; their contact information is at the top of

this form. If you have questions about your rights as a participant in this research or the way this study has been conducted, you may contact the TWU Office of Research and Sponsored Programs at 940-898-3378 or via e-mail at IRB@twu.edu.

By clicking on “I consent” you are agreeing to the terms on this form:

I consent

I do not consent

Date

APPENDIX G
RECRUITMENT POST

Greetings!

You are being invited to participate in a research study supported by Texas Woman's University.

The purpose of this study is to determine how characteristics of trauma, coping style, and relationship patterns predict posttraumatic growth. Some questions may be sensitive and may cause you to experience some emotional discomfort. Completion of the research process takes approximately 30 minutes.

Eligibility requirements for participants:

(a) Age of 18 years or older

(b) You have experienced an event in your lifetime which you consider traumatic. Examples of traumatic experiences include Loss (e.g. break-up, loss of a close relationship, death of a loved one, etc.), Interpersonal (e.g. sexual assault, physical assault, etc.), Military/combat (e.g. as a participant or bystander in a combat situation), Natural disaster (e.g. hurricane, tornado, etc.), Major life event (e.g. parents' divorce, moving to a new country, etc.), Illness (e.g. chronic illness, significant injury, etc.), or Other.

Participation in this study is strictly voluntary and participants may withdraw from the study at any time without penalty. Please know that there is a potential risk of loss of confidentiality in all email, downloading, and internet transactions.

This study was approved by the Texas Woman's University IRB (Protocol #IRB-FY2021-86).

Please click on the following link to view the informed consent document and to participate in the study:

[Insert link here]

James Kuciemba, M.A., Principal Investigator, jkuciemba@twu.edu

Claudia Porras Pyland, Ph.D., Faculty Advisor, cporras@twu.edu