

KINDING: A THEORY OF HUMAN GROWTH THROUGH POSITIVE
SELF-LEADERSHIP

by

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To My Grandmothers,

whose hands bore the weight of worlds in silence,

whose eyes held stories of struggle transformed into strength,

whose hearts carried oceans of unconditional love that flows through generations,

You are the fire fueling this work!

May I carry forward your legacy of faith, wisdom, and grace.

To All,

*whose lived experiences of struggle, resilience, and post-traumatic growth gave life to the
essence of this research,*

You are the heart of this work!

May your stories be honored, your journeys celebrated, and your voices amplified.

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Juna Kotori

ABSTRACT

KINDING: A THEORY OF HUMAN GROWTH THROUGH POSITIVE SELF-LEADERSHIP

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While trauma research has traditionally focused on pathological outcomes, attention has shifted toward understanding post-traumatic growth or positive psychological changes that can emerge from struggling with highly challenging events. However, existing post-traumatic growth theories provide limited guidance on how individuals can actively facilitate their own growth. This study introduced and empirically validated the KINDING Theory of Human Growth Through Positive Self-Leadership, a novel framework that integrates positive self-leadership theory and affective neuroscience to explain how positive emotions, cognitions, and behaviors can facilitate growth following trauma.

A cross-sectional survey design was employed with 489 adults engaged in higher education institutions across Michigan. The study utilized the newly developed and validated KINDING Scale of Positive Practices. Data analysis included descriptive statistics, factor analysis, simple and multiple regression analysis, and path analysis to

examine relationships among KINDING components and their association with post-traumatic growth as measured by the Post-Traumatic Growth Inventory.

Factor analysis confirmed the seven-component structure of the KINDING theory with strong factor loadings. All KINDING components significantly predicted subsequent components in the theoretical sequence, supporting the spiraling progression model. Path analysis revealed that the full model explained 47% of variance in post-traumatic growth. Dreams and Imagination emerged as the strongest direct predictors of post-traumatic growth, while Kindness showed a surprising negative direct effect but significant positive indirect effect, suggesting it may function as a foundation enabling other growth processes. Distinct patterns emerged for self-directed versus other-directed growth, with Dreams and Implementation most strongly predicting self-directed growth, while Gratitude and Imagination best predicted other-directed growth.

This research makes significant theoretical, empirical, and practical contributions to understanding post-traumatic growth. Theoretically, it extends existing post-traumatic growth models by demonstrating how positive self-leadership practices can actively facilitate growth rather than merely describing outcomes. The KINDING Scale provides researchers with a validated instrument for measuring positive practices in trauma recovery contexts. Practically, findings suggest that interventions emphasizing goal-setting, visualization, self-compassion, meaning-making, and gratitude may enhance individuals' capacity for growth following adversity. For higher education settings, results support implementing trauma-informed approaches that incorporate positive self-

leadership principles in student support services, counseling programs, and professional development initiatives.

In conclusion, the KINDING Theory of Human Growth Through Positive Self-Leadership represents a paradigmatic shift from passive to active models of trauma recovery, providing both theoretical understanding and practical tools for facilitating post-traumatic growth. By demonstrating that individuals can actively lead themselves toward positive outcomes following trauma through intentional engagement in positive practices, this research offers hope and empowerment to trauma survivors while providing evidence-based guidance for practitioners and institutions supporting trauma recovery. The findings establish a foundation for future longitudinal research, intervention development, and cross-cultural validation of the KINDING framework.

Keywords: post-traumatic growth, positive self-leadership, trauma recovery, positive psychology, self-leadership, KINDING theory, higher education, resilience

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CHAPTER ONE

INTRODUCTION

Overview

The experience of traumatic events is a universal, non-discriminatory phenomenon. The majority of people worldwide are exposed to traumatic events at some point in their life (Benjet et al., 2016). Cross-national epidemiological surveys find that 70.4% of individuals worldwide report experiencing lifetime traumas, with exposure averaging 3.2 traumas per capita (Kessler et al., 2017). Additional research indicates that about 60-61% of men and 50-51% of women report having experienced at least one traumatic event in their lifetime (Kessler et al., 1995). Traumatic events are precursors to highly distressing and sometimes severe psychological, physical, emotional, and behavioral problems. Depending on the intensity, duration, and severity of the traumatic event, an individual's distress may include anxiety, sadness, general irritability, depression, rage and guilt, post-traumatic stress disorder, etc. (Bostock et al., 2009; Calhoun & Tedeschi, 2001; Linley et al., 2008).

Paradoxically, the struggle with traumatic events can also lead to positive experiences. Tedeschi and Calhoun (1996) coined the term "post-traumatic growth" to capture positive changes that occur as a result of the struggle with traumatic events. They developed the Post-Traumatic Growth Theory to describe and explain the process of growth, its elements, and factors influencing it. With regards to factors that facilitate post-traumatic growth, the research includes education, engagement in emotional regulation, constructive self-disclosure, creating a trauma narrative with post-traumatic

growth domains, and developing life principles that are robust to challenges (Tedeschi & McNally, 2011).

Since trauma robs individuals of the feeling and belief that one is in charge of oneself (van der Kolk, 2014), in addition to the factors mentioned above, I propose that a crucial element in transitioning from trauma to post-traumatic growth is leadership, particularly positive self-leadership. Self-leadership, proposed by Charles Manz (1986), is a comprehensive theory of self-influence through which an individual guides herself/himself in engaging with inherently motivating tasks and effectively managing tasks that are not inherently motivating. Self-leadership includes the self-management of immediate behaviors, as well as the reasons for engaging in such behaviors (Manz, 1986). Positive leadership, on the other hand, is characterized by the application of various positive practices that help individuals experience high levels of energy and increased effectiveness, reach their full potential, and flourish (Cameron, 2013). Combining self-leadership and positive leadership, I define positive self-leadership as “the capacity to identify and apply positive practices to the process of leading oneself through a task or an experience to reach positive outcomes”. Such positive practices are based on positive emotions, positive cognitive states, and positive behaviors. I hypothesize that positive self-leadership acts as a facilitation mechanism towards growth following a traumatic or highly adversarial event.

Positive emotions, a component of positive self-leadership, are closely linked to the experience of post-traumatic growth (Fredrickson et al., 2003; Stanton & Low, 2004). Research has indicated that positive emotions can help reduce levels of distress following adversity by undoing negative emotions (Fredrickson & Levenson, 1998) and by

increasing contact with and support from social relationships (Bonanno & Keltner, 1997). Furthermore, positive emotions act in broadening one's thought-action repertoire, as well as building personal resources (Fredrickson, 1998; Fredrickson, 2001). In this way, it is suggested that positive emotions help build one's capacity for growth following traumatic and adversarial events (Fredrickson et al., 2003). To date, positive emotions are not included in the post-traumatic growth theory of Tedeschi and Calhoun (2004), however, Calhoun and Tedeschi (2006) suggest that positive emotions are best to be placed within the category of "person pre-trauma" to describe the person's pre-existing dispositions to positive affective states.

My dissertation research bridges the areas of post-traumatic growth, positive self-leadership, and positive emotions, cognitions and behaviors. Through my dissertation work, I explored if and how experiencing positive emotions, positive cognitions, and positive behaviors aids and/or enhances the process of growth following trauma, regardless of the individual's pre-existing dispositions to positive affective states. Specifically, I explored possible connections between experiences of positive emotions, positive cognitions, and positive behaviors in the context of self-leadership following traumatic or highly adversarial events and their potential relationship(s) to post-traumatic growth. The overarching research question was *"What, if any, relationships exist between positive self-leadership – fueled by positive emotions and positive cognitions and manifested through positive behaviors – and self-reported experiences of growth after the experience of a traumatic or highly adversarial event for adults engaged in higher education?"*

To offer a description and explanation of the process described in the section above, I developed the KINDING Theory of Human Growth Through Positive Self-Leadership. The conceptual foundation of this theory, which integrates both descriptive and explanatory elements, emerged from a synthesis of personal experiences, observations, and an extensive review of literature on growth following trauma. The theory posits that positive practices, grounded in positive emotions and positive cognitions, can facilitate post-traumatic growth in the aftermath of traumatic or highly adversarial experiences. Specifically, the theory describes and explains how the activation of positive emotions catalyzes an upward spiral that fosters the emergence of positive cognitions and, subsequently, positive behaviors. In alignment with this theoretical framework, I developed the KINDING Scale of Positive Practices to assess the core constructs of the theory, their outcomes, and the dynamic interplay among them. Grounded in this framework, the purpose of this dissertation study was to empirically investigate the extent to which measurable relationships exist between positive self-leadership – driven by positive emotions and cognitions and manifested through positive behaviors – and self-reported experiences of growth among adults in higher education who have encountered traumatic or highly adversarial events.

Background

Traumatic Experiences

Life is inevitably challenging, and there exists substantial variability in how people respond to and manage life's challenges, particularly highly adversarial events. Adversity is an inevitable part of life, one that shapes human development for better or for worse. Adversity refers to negative experiences that have the possibility to disrupt an

individual's development or adaptive function (Yates & Masten, 2004). Adversities may be chronic (e.g., emotional abuse, poverty, racism, etc.) or acute (e.g., rape, automobile accident, sudden loss of a loved one, victim of an armed robbery, etc.). Depending on the nature of the adversity, individuals or whole systems (i.e., family, community) may be affected.

Life spares no one from adversities, and during their lifetime, most individuals will experience at least one highly adversarial event (Bonanno, 2005; Price, 1994). A potential outcome of exposure to adversity is trauma. Examples of traumatic events include war, threatened or actual physical assault (e.g., physical attack, childhood abuse, armed robbery), threatened or actual sexual violence (e.g., sexual abuse, rape, sexual trafficking), terrorist attacks, being kidnapped, torture, automobile accidents, natural disasters, man-made disasters, etc. What constitutes trauma has undergone revisions throughout the years. Originating from ancient Greek, "trauma" means "wound" (Figley & Figley 2009, p. 173). Initially, trauma was recognized in the field of psychiatry as a stressor that gives rise to significant distress in almost all individuals (APA, 1980). In 1987, the definition of trauma was modified to include any event that is outside of the range of usual human experiences and that is profoundly distressing to almost anyone (APA, 1987). A much narrower definition of trauma was offered in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) according to which trauma involves actual or threatened death, serious injury or sexual violence" (APA, 1994). Under this definition, stressful events not involving an immediate threat to life such as psychosocial stressors (e.g., divorce or job loss) are not considered traumatic.

Psychologically, trauma refers to an experience that is emotionally painful, distressful, shocking, and that often has long-term negative psychological and physical consequences (McGinley & Varchevker, 2013). According to the American Psychological Association (2022), trauma is defined as an emotional response to a deeply distressing event which causes physical harm, emotional harm, and/or life-threatening harm that overwhelm an individual's intrapersonal resources to manage or cope with it, causing feelings of shock and helplessness and diminishing one's sense of self. For an event to produce a traumatic response, it must overwhelm the individual's psychological ability to cope (McGinley & Varchevker, 2013). The feeling of overwhelm results from the shattering of previously held mental paradigms which comprise beliefs and assumptions about the world (Janoff-Bulman, 1992). These beliefs and assumptions help individuals understand the causes of events, guide their actions, and provide them with a general sense of meaning and purpose (Janoff-Bulman, 1992). A traumatic event significantly challenges or shatters one's understanding of the world and the self, shocking the individual and sending her/him into a state of confusion, helplessness or terror (McGinley & Varchevker, 2013). It is this element of overwhelm – overwhelming ordinary adaptations to life – that makes traumatic events extraordinary. Traumatic events confront human beings with the extremities of helplessness and terror and evoke the responses of catastrophe (Herman, 1997, pg.33).

As seen above, the evolution of the concept of trauma has expanded to include not only the event but also the subjective experience and interpretation of the event, including the psychological, emotional, and cognitive processes that it entails, all of which largely contribute to whether or not an individual experiences an event as traumatic. Thus, the

experience of an event as traumatic is subjective in nature (Allen, 1995), meaning that what can be traumatizing to an individual may not have the same impact on another individual. Whether or not an event will be traumatic is influenced by many factors, including the individual's age, gender, pre-event personal strength, previous traumatic experiences, chronicity of the trauma, family history of trauma, current life stressors, social support, one's spiritual and religious beliefs, event centrality, socialization, and one's cultural background (Lev-Weisel & Amir, 2003; Brewin et al, 2000; Felitti et al., 1998).

For purposes of my dissertation, I ascribe to the definition of trauma as (1) an *emotional response* to a deeply distressing event which causes physical harm, emotional harm, and/or life-threatening harm that (2) results from *shattered world assumptions* (Janoff-Bulman, 1992) and that (3) *overwhelms* an individual's intrapersonal resources to manage or cope with it, causing feelings of shock and helplessness and diminishing one's sense of self (APA, 2022). Under this definition, it is not the event itself that causes trauma but the individual's subjective experience of the event, its interpretation, and the meaning attached to it.

Traumas are grouped into three main categories: acute, chronic, and complex. Acute trauma refers to a single event that causes distress or danger, such as a car accident. Chronic trauma describes repeated exposure to a stressful or dangerous event, such as bullying or domestic violence. Complex trauma denotes repeated exposure to multiple events that cause severe distress or fear such as sexual abuse, torture, or chronic abandonment. A multitude of various traumatic events fall under each of the aforementioned categories. The National Traumatic Stress Network (2023) reports

fourteen main traumatic events: physical abuse or assault, sexual abuse or assault, emotional abuse/psychological maltreatment, neglect, serious accident or illness, witness to domestic violence, victim/witness to community violence, school violence, natural disasters, forced displacement, war/terrorism/ political violence, witness to extreme personal or interpersonal violence, traumatic grief, and system-induced trauma. Of these traumatic events, research points to sexual violence and emotional abuse/ psychological maltreatment as the two types most strongly associated with profound and enduring negative consequences across the lifespan (Kessler et al., 2017).

To summarize, trauma is a widespread and frequently experienced phenomenon that affects people worldwide. Although definitions and conceptualizations of trauma may vary across disciplines, there is consensus that trauma fundamentally disrupts and overwhelms an individual's intrapersonal resources to manage or cope with the event, and consequently negatively impacts one's quality of and progression through life. Furthermore, both scholars and practitioners acknowledge that trauma is inherently subjective and deeply personal, shaped by a complex interplay of individual, relational, cultural, and contextual factors.

Post-Traumatic Growth

Traumatic events are precursors to highly distressing and sometimes severe psychological, physical, emotional, and behavioral problems, including, anxiety, depression, post-traumatic stress disorder, etc. (Bostock et al., 2009; Calhoun & Tedeschi, 2001; Linley et al., 2008). Paradoxically, as evidenced in the literature (Helgeson et al., 2006; Park et al., 1996; Tedeschi & Calhoun, 1996), traumatic experiences often lead to growth. Specifically, post-traumatic growth is defined as positive psychological changes

experienced as a result of the struggle with a highly challenging or traumatic event (Tedeschi and Calhoun, 1996). For example, after having experienced rape, as the individual copes with the trauma and engages in emotional and cognitive processing of the rape experience, the individual comes to realize that she/he possesses qualities and skills that she/he did not know she/he had. As a result, the individual perceives the self post-trauma to be stronger than previously thought.

Growth after trauma is not a new phenomenon. This phenomenon has been present in ancient religions. For example, both Eastern and Western views identify suffering as playing a central role in human existence and acting as a catalyst for growth and wisdom (Pargament, 1996). Additionally, the phenomenon of growth after trauma is found in existential and humanistic psychology and philosophy (Jaffe, 1985; Frankl, 1963; Yalom, 1980). Viktor Frankl's (2006) book "Man's Search for Meaning" speaks to the effect of how even the worst of human suffering can be transformed into growth. Frankl pointed out that "Facing a fate we cannot change, we are called upon to make the best of it by rising above ourselves and growing beyond ourselves; in a word, by changing ourselves (Frankl, 2006, p. 137). Abraham Maslow (1970) also noted that exposure to adversity serves as a precursor to self-actualization.

The first empirical study to measure the existential effects of trauma was conducted by Peter Ebersole in 1970. This research provided data showing that between 36% and 44% of study participants reported experiencing positive effects after painful or sorrowful experiences. Interestingly, 39% of the participants indicated that painful experiences were more powerful than positive experiences. This research offered preliminary empirical evidence suggesting that adverse life experiences may give rise to

beneficial psychological outcomes. Other studies looking specifically at growth in the aftermath of traumatic events were conducted by Taylor (1977) on the effects of natural disasters and Hamera and Shontz (1979) on life-threatening illness. These empirical works contributed to the development of the conceptual understanding that traumatic and painful life experiences have the potential to produce beneficial effects, without diminishing or negating the legitimate and often profound negative responses that are normal responses to traumatic events. The rise of the positive psychology movement (Seligman & Csikszentmihalyi, 2000) brought the study of growth after trauma to the forefront of academic communities, and growth after trauma started to be studied more systematically and rigorously. Specifically, the work of Tedeschi and Calhoun (1995, 1996) helped to develop a theoretical model of positive growth after trauma, which has since been revised and expanded (Tedeschi & Calhoun, 2004; Calhoun & Tedeschi, 2006; Calhoun et al., 2012).

To date, Calhoun's and colleagues' (2012) model is the most comprehensive model of growth after trauma. Tedeschi and Calhoun (1996) defined post-traumatic growth as positive psychological changes that are experienced after a traumatic event as one struggles with the trauma. The traumatic event challenges significantly the individual's assumptive world (Janoff-Bulman, 1992), shattering the ways of understanding the world and her/his place in it (Tedeschi & Calhoun, 2004). The initial coping responses to the trauma to manage overwhelming negative emotions are later substituted by intense cognitive processing, and the degree to which one engages cognitively with the trauma appears to be a central element in the process of post-traumatic growth (Tedeschi & Calhoun, 2004). The positive changes are evidenced in

five domains: Increased Appreciation for Life, Relating to Others, Personal Strength, Spiritual Change, and New Possibilities. These domains came about from Tedeschi's and Calhoun's original study (Tedeschi & Calhoun, 1996), which also resulted in the development of the Post-Traumatic Growth Inventory (PTGI), an instrument for assessing positive outcomes post-trauma.

Increased Appreciation for Life is described as a changed sense of what is important in life, and it is accompanied by changed priorities, formulation of new goals reflecting the changes of the post-trauma world, and focusing on the present moment (Tedeschi & Calhoun, 1996). Relating to Others involves the development of closer, more intimate relationships with others, as well as the letting go of other relationships (Tedeschi & Calhoun, 1996). Individuals tend to develop closer relationships with family and friends to which they reach out to disclose their trauma and from whom they are well-received, as well as with other sufferers who have "been in their shoes." On the other hand, individuals tend to let go of relationships that are not healthy for their world post-trauma or who do not receive well their disclosure of the traumatic event. Personal Strength is shown by an increase in one's personal strength, accompanied with a sense of being vulnerable (Tedeschi & Calhoun, 1996). This produces the feeling of being able to face whatever life throws one's way. Spiritual Change refers to the creation of a deeper spiritual life, marked by engagement with fundamental existential questions (Tedeschi & Calhoun, 1996). New Possibilities refers to the identification of new goals and possibilities in one's life (Tedeschi & Calhoun, 1996). As older assumptions have been shattered and no longer serve the individual, the individual disengages from goals that

cannot accommodate the reality of the trauma. The formulation of new goals allows the individual to move toward goals that are permitted by the new reality.

Among the factors that contribute to post-traumatic growth are: education, engagement in emotional regulation, constructive self-disclosure, creating a trauma narrative with post-traumatic growth domains, and developing life principles that are robust to challenges (Tedeschi & McNally, 2011). The goal of education in this context is understanding trauma response as a precursor to post-traumatic growth. Specifically, education focuses on three main points: (1) the phenomenon of trauma which leads to the shattering of one's beliefs about life; (2) understanding that the reactions to the trauma are normal; and (3) understanding that the shattered beliefs lay the foundation for growth. Emotional regulation aims to equip survivors with methods to reduce anxiety and somewhat control their automatic intrusive thoughts, which sets the stage for future reflective rumination (in contrast to automatic rumination). Constructive self-disclosure serves as a way of receiving support, finding models for healthy trauma response, and constructing a coherent trauma narrative. As trauma leads to shattered beliefs and disengagement from previous goals, the revised life narrative will include creation of new goals. Especially important here is organizing the story of trauma into a coherent narrative where trauma is the turning point and is viewed as a catalyst for positive change. Equally important is engagement in dialectical thinking and appreciating paradox (i.e., that good things can come out of bad events). Also, it is important to introduce the kind of changes that may occur by using the same language used by Tedeschi and Calhoun (1996) to refer to the domains of growth: Personal Strength, Spiritual Change, Enhanced Relationships with Others, New Opportunities and Appreciation for Life.

In summary, although enduring traumatic events can yield adverse effects, there also exists the potential for post-traumatic growth. Survivors who have navigated traumatic experiences and derived growth as a result of the emotional and cognitive struggle with the traumatic experience are more adept at cultivating attitudes, thoughts, and actions that enhance their resilience moving forward.

Self-Leadership

Self-leadership, as conceptualized by Charles Manz (1986), offers a comprehensive theory of self-influence that explains how individuals lead themselves toward performing inherently motivating tasks and manage themselves to fulfill necessary but less intrinsically motivating tasks. This construct emerged from organizational control systems and self-management. Established by organizations, control systems exert influence over individuals by identifying appropriate behavior, means to monitor it, and means to reward or punish it (Manz, 1986). Essentially, these control systems impose external control over individual behavior. Manz (1986), however, proposed that each individual possesses an internal self-control system, which allows the individual to establish personal standards, engage in self-evaluation processes, and self-administer rewards and punishments in managing their behavior. In addition, people have their own set of beliefs, values, and visions for their life, all of which influence their behavior. Self-leadership encompasses the self-management of immediate behaviors, as well as the underlying motivations for such behavior (Manz, 1986). Manz lists as principal components of self-leadership: (a) addressing a wider range of higher-level standards of self-influence; (b) more fully incorporating the role of intrinsic motivation; and (c) suggesting additional strategies for self-control (Manz, 1986, p. 589-590).

It is essential to note that self-leadership differs in significant ways from self-management. Self-management encompasses a set of strategies that assist individuals in structuring their environment and in establishing self-motivation that facilitate behavior for achieving lower-level behavioral standards (Manz, 1986). Self-leadership, on the other hand, extends beyond mere self-management practices to encompass leading the self at superordinate levels (Manz, 1986, p.590). To illustrate, while self-management involves setting goals and self-rewards for goal achievement, self-leadership also considers the underlying reasons behind such goals, behaviors, and rewards (Manz, 1986). Another difference between the two constructs is the difference in focus. Self-management is more concerned with what individuals ought to be doing, while self-leadership places significant emphasis on the intrinsic value of behaviors and tasks (Manz, 1986). Thus, self-leadership proposes a broader view of self-influence that includes the intrinsic appealing aspects of the work (“natural rewards”) and the reasons (“the why”) for performing the behavior (Manz, 1986).

Of particular importance to self-leadership are intrinsic motivation, self-efficacy, and purpose. With regards to intrinsic motivation, the Cognitive Evaluation Theory (Deci, 1975) is worth highlighting. This theory is founded on the assumption that behavior is caused by internal states. According to the Cognitive Evaluation Theory, an individual’s feelings of self-determination and competence are central to the experience of intrinsic motivation. Humans have a natural tendency to pursue feelings of competence and self-determination, thus searching for challenges and overcoming them leads to enhanced feelings of self-competence and self-control (Deci, 1975). Of equal importance is self-efficacy, central to Bandura’s Theory of Social Learning (Bandura, 1977).

According to the Theory of Social Learning, perceived self-efficacy influences the amount of effort and persistence expended in the face of adversity. In other words, when an individual perceives herself/himself as having self-efficacy, she/he will exercise more effort and persistence in the face of adversity. Bandura (1977) also indicated that the strongest contributor to positive self-efficacy perceptions is one's personal performance history. Individuals who have a successful performance history have higher perceptions of self-efficacy. In addition to feelings of competence and self-control, central to self-leadership is also the feeling of purpose, or the "why" of behavior performance, which extends beyond the rewards for behavior performance. Feelings of purpose are seen to result from worthwhile contributions to something or someone other than the self (Manz, 1983, as cited in Manz, 1986).

Positive Emotions

The experience of both adversity and post-traumatic growth is inherently cognitive and emotional. Concerning the emotional dimension, positive affect is defined as the subjective experience of positive moods (Miller, 2011), while positive emotions involve positive feelings along with distinct patterns of physiological arousal, thoughts, and behaviors (Peterson, 2006). Experiences of positive emotions include both the experience of positive emotions in the moment, as well as positive trait characteristics such as pre-existing positive affectivity (Stanton & Low, 2004, p. 78). According to the Broaden and Build Theory of Positive Emotions (Fredrickson, 1998), positive emotions broaden an individual's thought-action repertoire, thus encouraging discovery of novel and creative ideas, actions, and social connections. These novel ideas, actions, and social connections build the individual's personal resources, which range from psychological

and intellectual resources to social resources, and which can be accessed by the individual when needed in later occasions.

Positive affect has been found to be positively associated with growth (Abraido-Lanza et al., 1998; Evers et al., 2001; Park et al., 1996). Similarly, positive emotions are closely linked to the experience of post-traumatic growth (Fredrickson et al., 2003; Stanton & Low, 2004). Positive emotions can help reduce levels of distress following adversity by undoing negative emotions (Fredrickson & Levenson, 1998) and by increasing contact with and support from social relationships (Bonanno & Keltner, 1997). Furthermore, positive emotions have shown to broaden one's thought-action repertoire (Fredrickson, 2001), thereby enhancing cognitive and behavioral flexibility. Thus, positive emotions are posited to facilitate the development of an individual's capacity for growth in the aftermath of traumatic and adversarial events (Fredrickson et al., 2003).

Numerous studies in the field of trauma research have provided empirical support for the aforementioned concepts. For example, research has found that individuals who experience genuine laughs and smiles when speaking about a recent loss have better adjustment over several years of bereavement (Bonanno & Keltner, 1997). Also, such individuals evoked more favorable responses in observers (Bonanno & Keltner, 1997). Other research has pointed to positive emotions acting as mediators between growth and adjustment following a traumatic event (Fredrickson et al., 2003). Expression of positive emotion has been found to predict better adjustments and better social relations over time (Bonanno et al., 2007). Additionally, research has demonstrated that positive emotions mediate the relationship between pre-crisis resilience and post-crisis depressive symptoms and post-crisis growth in psychological resources in various contexts,

including terrorist attacks, health problems, psychological problems, etc. (Fredrickson et al., 2003; Tugade & Fredrickson, 2004).

KINDING Theory of Human Growth Through Positive Self-Leadership

To offer a description and explanation of the process of growth following trauma which incorporates positive emotions, positive cognitions, and positive behaviors, I developed the KINDING Theory of Human Growth Through Positive Self-Leadership. The conceptualization of this theory, which offers both descriptive and explanatory elements, arose from personal experiences, observations, and a literature review of growth following trauma. Grounded in positive self-leadership, the theory describes and explains how positive behaviors rooted in positive emotions and positive cognitions can potentially foster growth following the experience of traumatic or highly adversarial events. More specifically, the theory describes and explains how the experience of positive emotions initiates a positive upward spiral, leading to experiences of positive cognitions and positive behaviors.

The KINDING Theory comprises seven core constructs: Kindness, Imagination, Nurturing Soul, Dreams (i.e., aspirations/ goals), Implementation, Narrative, and Gratitude. These constructs “come to life” through active engagement in positive behaviors/ practices associated with each one. For instance, Kindness towards the self is demonstrated through practices of self-love; Imagination is expressed by envisioning a better future; and so forth. The activation of each construct results in positive outcomes or consequences (e.g., Kindness *uplifts*, etc.), which in turn fuel the experience of subsequent positive emotions and thoughts, thereby creating an upward spiral. My hypothesis suggested that when integrated, these constructs empower individuals to

effectively lead themselves in a positive direction following a traumatic or highly challenging event, ultimately leading to post-traumatic growth. Table 1.1 below provides definitions for each of the seven constructs constituting the KINDING Theory.

Table 1.1

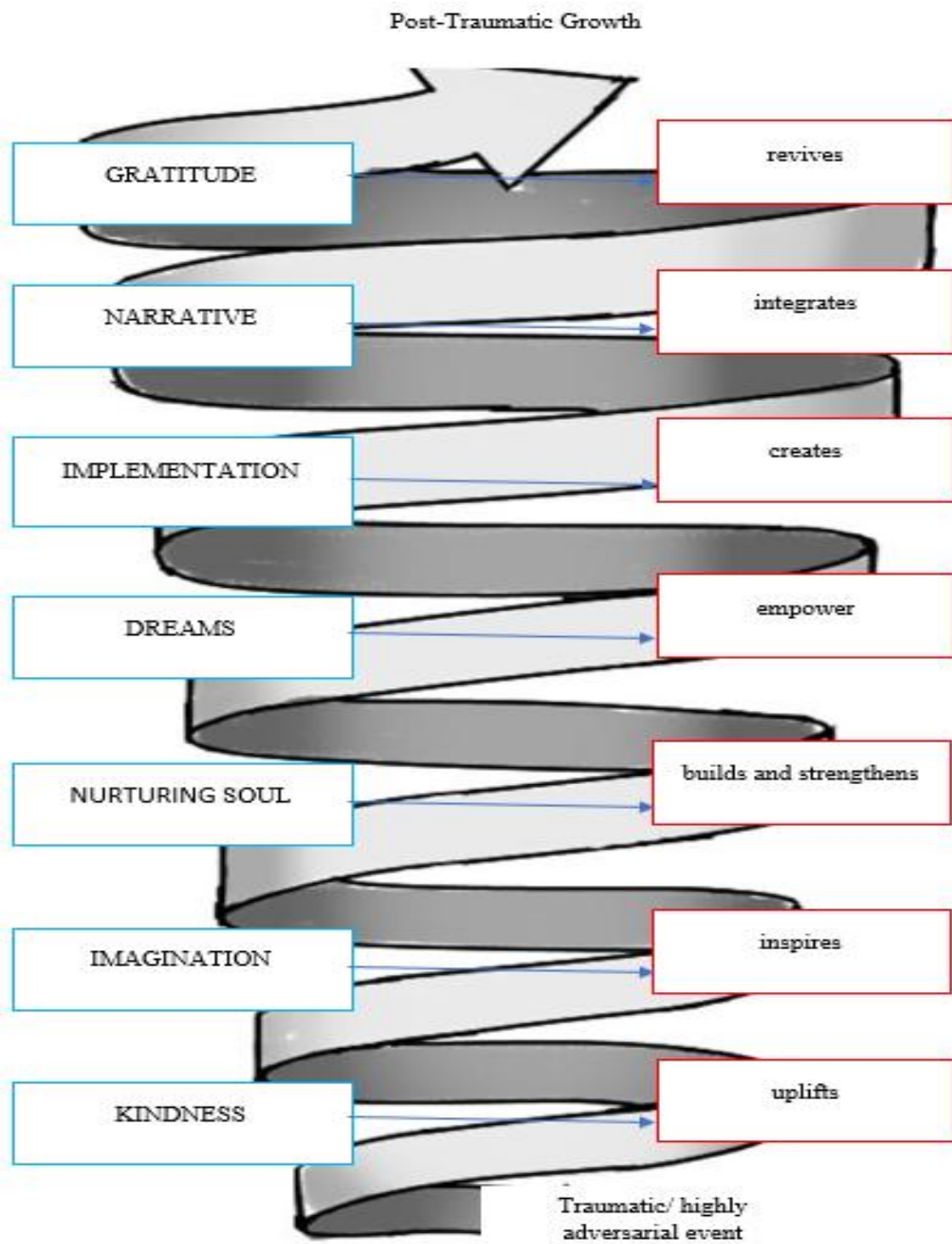
Definition of Constructs of the KINDING Theory of Human Growth Through Positive Self-Leadership

Constructs	Definitions
Kindness	Being warm and understanding toward ourselves in instances of pain, suffering, and failure rather than being harshly self-critical (Neff, 2003)
Imagination	The act and process of forming a mental image of something not present to the senses or never before wholly perceived in reality; from the Latin <i>imaginari</i> meaning "to picture oneself" (Merriam-Webster, 2022)
Nurturing Soul	An individual's ability to actively participate in intentional self-care practices aimed at nurturing and fostering personal growth and development (my definition)
Dreams	A strongly desired goal or purpose; an aspiration (Merriam-Webster 2022)
Implementation	Putting a plan into effect, including the process of monitoring progress, making adjustments, and evaluating impact (National Center on Supportive Learning Environments, 2022)
Narrative	An introspective recounting of one's development to understand who one is through the stories one tells about oneself, which is accomplished by integrating different roles or elements of life as they arise at one time (synchronically) and across time and space (diachronically) (McAdams, 2001)
Gratitude	Life orientation towards noticing and appreciating the positive in oneself, one's life, and the world (Wood et al., 2010)

Figure 1.1 presented below offers an initial visual depiction of the KINDING Theory. On the left, positive emotions and positive cognitions are outlined, while the corresponding outcomes/consequences are indicated on the right.

Figure 1.1

The KINDING Theory of Human Growth Through Positive Self-Leadership



Encountering a traumatic or highly adversarial event disrupts or shatters the individual's assumptive world (Janoff-Bulman, 1992), as the person struggles to assimilate or accommodate the experience. The individual becomes conscious of the disequilibrium caused by the traumatic experience and seeks to “go back” to a state of equilibrium. The KINDING Theory describes and explains this process, extending it beyond mere equilibrium restoration to the achievement of growth surpassing previous levels of functioning. The subsequent paragraphs provide a detailed explanation of the theory, its constructs, and the intricate interplay between them.

The first construct of the theory is Kindness towards the self, which involves demonstrating warmth and understanding toward oneself during instances of pain, suffering, and failure rather than engaging in harsh self-criticism (Neff, 2003). Acting kindly towards oneself serves to undo negative emotions (Fredrickson, 2001), thereby establishing an internal atmosphere of psychological safety where emerging feelings and/or memories related to the traumatic event do not pose a threat to the individual. I coined the expression “Your Kindness Uplifts” to illustrate that kindness elevates one’s spirit by undoing negative emotions and fostering psychological safety.

The second construct of the theory is Imagination. Imagination is defined as the act and process of forming a mental image of something not present to the senses or never before wholly perceived in reality (Merriam-Webster, 2022). Once the individual has established a sense of psychological safety, the individual begins to envision where she/he aspires to go, who she/he wishes to become, how she/he desires to feel, and what accomplishments she/he aims to achieve following the traumatic experience. Engaging

imagination (a cognitive state) to construct a potential future encourages the generation of novel ideas and roles that one wishes to explore. Consequently, imagination expands the individual's thought repertoire (Fredrickson, 2001). I coined the expression "Your Imagination Inspires" to illustrate that envisioning a new self and a new future serve as inspiration for taking action to actualize that envisioned self.

The third construct of the theory is Nurturing Soul. This construct is defined as “an individual’s ability to actively participate in intentional self-care practices aimed at nurturing and fostering personal growth and development.” At this stage, the individual further cultivates the "deep works" initiated earlier in the process. Positive practices contribute toward building up the individual’s inner resources (Fredrickson, 2001) and strengthening her/his emotional and spiritual resilience, subsequently contributing to good overall health. I coined the expression “Your Nurturing Soul Builds and Strengths” to illustrate that nurturing the various dimensions of oneself (personality dimensions, abilities, traits, etc.) helps in building and strengthening one's personal resources.

The fourth construct of the theory is Dreams. In the context of this theory, Dreams encompass strongly desired aspirations/ goals. As the individual begins to feel emotionally and mentally stronger and more positive, the individual starts dreaming about her/his future, contemplating where she/he sees herself/himself and plotting the path to get there. At this stage, the individual sets goals across various domains of life and strategizes their attainment. I coined the expression "Your Dreams Empower" to emphasize that harboring dreams about one's present and future empowers one to take proactive action toward fulfilling those aspirations.

The fifth construct of the theory is Implementation. Implementation is defined as putting a plan into effect, including the process of monitoring progress, making adjustments, and evaluating impact (National Center on Supportive Learning Environments, 2022). After having set goals, the individual proceeds to execute the plans to achieve said goals. Implementation results in creation, as the individual makes incremental progress towards the goals. The process of implementation empowers the individual as it gives her/him control of her/his life and allows her/him to witness the achievement of her/his plans. Working towards goal attainment instills motivation, while also enhancing self-efficacy and competence (Bandura, 1977). I coined the expression "Your Implementation Creates" to illustrate that executing one's goals propels one toward achieving one's dreams, and thus creating the life one desires.

The sixth construct of the theory is Narrative. Narrative is defined as an introspective recounting of one's development to understand who one is through the stories woven about oneself, and it is accomplished by integrating different roles or elements of life as they arise at one time (synchronically) and across time and space (diachronically) (McAdams, 2001). At this stage, the individual can retrospectively examine her/his journey from the occurrence of the traumatic event to the present moment. Reflecting on the progress made and the person into which she/he has evolved during this self-driven process helps the individual comprehend and redefine her/his life story. The new narrative emerges by interweaving past experiences, lessons learned, and insights gained from experiencing the traumatic event, and the internal and external changes experienced while navigating the aftermath of the traumatic event. Incorporated,

these elements help the individual chart a new life trajectory. This transformative process generates new schemas to accommodate the experiential knowledge, therefore contributing to the construction of a more coherent life story, one in which the individual becomes not just an experiencer but also a creator of life. I coined the expression "Your Narrative Integrates" to illustrate that the integration of lived experiences leads to the creation of a new life narrative. This expression also emphasizes the concept that the narrative that one chooses shapes how life experiences are integrated, ultimately influencing one's character and overall quality of life.

The seventh construct of the theory is Gratitude, defined as a life orientation towards noticing and appreciating the positive in oneself, one's life, and the world (Wood et al., 2010). The individual perceives the experience, no matter how painful, as an opportunity for personal growth. While the individual does not necessarily express gratitude for the traumatic event itself, the individual is thankful for what she/he *did* with the experience. In essence, the individual is thankful for using the experience as a catalyst for personal growth, feeling grateful for her/his own capabilities and empowered to turn things around and derive benefit from the experience. Additionally, the individual feels thankful for the lessons learned, insights gained, opportunities identified, relationships deepened, or new relationships formed. I coined the expression "Your Gratitude Revives" to illustrate that acknowledging life experiences with gratitude and taking control of how those experiences shape the individual infuse her/him with hope, optimism, and self-belief – these positive emotions and cognitions give rise to a sense of a new life being born, providing the individual with renewed energy.

Having progressed through each stage of the process detailed above, at its culmination, the individual not only attains the sought-after equilibrium following the traumatic event but also undergoes growth that transcends that equilibrium. This growth exceeds previous levels of being and functioning. Recognizing its benefits, the individual finds value in consistently participating in this process, leading to continuous growth.

Research Questions

The experience of post-traumatic growth is inherently emotional. Specifically, research has demonstrated that positive affect and positive emotions have been found to be positively associated with growth (Abraido-Lanza et al., 1998; Park et al., 1996; Fredrickson et al., 2003). To date, positive emotions have not been incorporated in the post-traumatic growth theory of Calhoun and colleagues (2012), however, Calhoun and Tedeschi (2006) acknowledge that positive emotions may be most appropriately situated within the “person pre-trauma” category, reflecting an individual’s pre-existing dispositions to positive affective states.

Through my dissertation work, I sought to investigate whether, and in what ways, the experience of positive emotions, cognitions, and behaviors contributes to or enhances the process of growth following trauma, independent of the individual’s pre-existing dispositions to positive affective states. Specifically, the study aimed to examine potential associations between the experience of positive emotions, positive cognitions, and positive behaviors within the framework of self-leadership in the aftermath of traumatic or highly adversarial events, and their relationship to reported post-traumatic growth. The overarching research question was *“What, if any, relationships exist between positive*

self-leadership – fueled by positive emotions and positive cognitions and manifested through positive behaviors – and self-reported experiences of growth after the experience of a traumatic or highly adversarial event for adults engaged in higher education?

Specifically, this study is looked at the following research questions:

- Examine specific positive self-leadership practices within each construct of the proposed theory: *What specific positive practices under each construct do individuals report having engaged in while going through a traumatic experience and with what frequency do they report having engaged in such practices?*
- Explore whether positive practices are related to theorized outcomes/ consequences within each construct: *Is there a correlation between engaging in positive practices and the theorized consequences?*
 - *Is feeling uplifted correlated with engagement in self-kind practices?*
 - *Is feeling inspired correlated with engagement in imagination-based/fueled practices?*
 - *Are feelings of strength correlated with engagement in self-nurturing practices?*
 - *Are feelings of empowerment correlated with engagement in practices focused on developing one's dreams (aspirations/goals)?*
 - *Is creation correlated with implementation of plans?*

- *Is life story integration correlated with revision and redevelopment of one's life narrative?*
 - *Are feelings of feeling revived correlated with feelings of gratitude?*
- Explore whether there are observable associations between experiencing the theorized consequence of a construct and engagement in positive practices in the following, upper construct: *Does experiencing a consequence (as a result of engaging in positive practices under the construct) relate to reported engagement in positive practices of the upper construct?*
 - *Does feeling uplifted correlate with imagination?*
 - *Does inspiration correlate with nurturing behaviors?*
 - *Does a nurturing soul correlate with dreams/ aspirations?*
 - *Does feeling empowered correlate with implementation?*
 - *Does creativity correlate with narrative development?*
 - *Does integration correlate with gratitude?*
 - *Does feeling revived correlate with self-kindness?*
- Explore the relationship between the KINDING process and the experience of post-traumatic growth: *Is there a correlation between engaging in positive practices while going through a traumatic experience and experiencing post-traumatic growth?*

Significance

This research holds considerable significance as it investigates the roles and effects of positive emotions, cognitions, and behaviors in facilitating post-traumatic growth. The theoretical framework that I propose offers both a descriptive and explanatory account of the growth process following trauma, emphasizing the integration of positive emotions, cognitions, and behaviors/practices. Furthermore, this research examined the influence of positive self-leadership in shaping the trajectory of growth in the aftermath of traumatic events. As such, this work represented an innovative, multidisciplinary contribution, thereby amplifying the discourse on post-traumatic growth by highlighting the centrality of positive emotion, cognition, and behavior as core mechanisms of positive self-leadership.

Chapter Summary

This chapter introduced a comprehensive exploration of post-traumatic growth through the lens of positive self-leadership, addressing the paradoxical reality that while traumatic events cause significant distress, they can also catalyze positive psychological transformation. Building on Tedeschi and Calhoun's foundational work on post-traumatic growth, which identifies five domains of positive change including increased appreciation for life, enhanced relationships, personal strength, spiritual development, and new possibilities, I proposed that positive self-leadership serves as a crucial facilitation mechanism for transitioning from trauma to growth. Defined as "the capacity to identify and apply positive practices to the process of leading oneself through a task or experience to reach positive outcomes," positive self-leadership emphasizes how positive

emotions, cognitions, and behaviors can undo negative emotional states and create psychological safety necessary for growth.

The theoretical centerpiece of this work is the newly developed KINDING Theory of Human Growth Through Positive Self-Leadership, which comprises seven interconnected constructs: Kindness (self-compassion that uplifts), Imagination (envisioning future possibilities that inspire), Nurturing Soul (intentional self-care that builds strength), Dreams (goal-setting that empowers), Implementation (action-taking that creates), Narrative (life story integration), and Gratitude (appreciation that revives). The theory describes how positive emotions initiate an upward spiral, leading to positive cognitions and behaviors that ultimately facilitate post-traumatic growth. Each construct produces specific outcomes that fuel subsequent positive experiences, creating a cyclical process where individuals move beyond mere equilibrium restoration to achieve growth that surpasses previous levels of functioning. This framework extends beyond traditional post-traumatic growth models by explicitly incorporating positive emotions, cognitions, and behaviors as active agents of transformation rather than merely pre-existing personality traits.

The research questions driving this dissertation examine the relationships between positive self-leadership practices and reported post-traumatic growth among adults in higher education who have experienced traumatic or highly adversarial events. Specifically, the study investigates which positive practices individuals engage in under each theoretical construct, whether these practices correlate with their theorized outcomes, and how the sequential activation of constructs relates to overall post-

traumatic growth. The significance of this work lies in its innovative, multidisciplinary approach that positions positive emotions, cognitions, and behaviors as central mechanisms of growth rather than peripheral factors, potentially offering new pathways for understanding and facilitating human resilience and transformation following traumatic experiences.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Research on Responses to Trauma

Trauma is conceptualized as the subjective perception of an intensely distressing experience (Micale, 1995). Such an experience triggers a cascade of neuro-biological, psychological, and cognitive manifestations. The nervous system is designed to respond to uncontrollable and overwhelmingly threatening experiences in a consistent pattern. Initial responses to trauma, albeit negative and regarded as abnormal, are indeed normal and purposeful. The body and psyche are designed to orchestrate a surge of responses in efforts to secure survival and restore equilibrium. Such responses are grouped into four main categories: neuro-biological, psychological and emotional, cognitive, and social responses.

Neuro-Biological Responses

Humans have a built-in stress response, which evolutionarily has played an indispensable role in our survival as a species. Trauma triggers the stress response, consequently setting in motion a wide range of neuro-biological responses. The process begins with the perception and detection of a stressor, a process called neuroception (Allen 1995). Neuroception involves neural circuits specialized in assessing the level of threat of a stressor. The stressor could be anything that the body interprets as a potential threat, such as a physical injury, psychological distress or mental overload. Detection of the threat leads to the mobilization of the body to respond to the threat, starting with the

deactivation of the parasympathetic system and activation of the sympathetic system. To recall, the sympathetic nervous system is responsible for the body's fight-or-flight response, while the parasympathetic nervous system is responsible for the body's relaxation response.

An integral part of the stress response is the hypothalamic-pituitary-adrenal (HPA) axis. The HPA axis is a complex neuroendocrine system with direct influence over the stress response and adaptation to stress (Daskalakis et al, 2015). Incorporating interactions among three major body components – the hypothalamus (a region in the brain), the pituitary gland (a small gland located at the base of the brain), and the adrenal glands (two small glands located on top of the kidneys) – the HPA axis mediates the effects of stressors by regulating numerous physiological processes, including the activity of the autonomic nervous system, the immune system, and metabolism. When the body perceives stress, the hypothalamus releases a hormone called corticotropin-releasing factor (CRF) hormone (Smith & Vale, 2006). The release of CRF signals the pituitary gland to release another hormone called adrenocorticotrophic (ACTH) hormone (Smith & Vale, 2006). ACTH then stimulates the adrenal glands to release stress hormones, such as cortisol, into the bloodstream. Cortisol is a stress hormone that helps the body cope with stress by changing the body's physiology. Specifically, cortisol increases blood sugar levels, suppresses the immune system, suppresses inflammation, mobilizes energy reserves and inhibits further release of CRH and ACTH (de Kloet et al., 2006; Gupta, 2013). Consequently, activation of the HPA axis leads to increased alertness, vigilance, and arousal (Gupta, 2013), which prepares the body to respond to the perceived stressor.

Simultaneously, non-essential functions, such as digestion, reproductive functions, growth, etc. are inhibited temporarily, as the body focuses its resources on dealing with the stressor. These physiological responses are aimed at helping the body cope with the perceived stressor and prepare for a "fight, flight or freeze" response (Thompson et al., 2014).

Neuro-biological responses are hard-wired into the tapestry of our biology and are anticipated to take place after the detection of a stressor. These reactions stay activated until the stressor gets eliminated or resolved. In some instances, resolution means escaping the stressor; in other instances, it means fighting against the stressor, and yet in other instances, it means “going along” with the stressor. While seemingly simple, the stress response is a very complex and intricate process.

Psychological and Emotional Responses

Trauma is invariably accompanied by a constellation of emotional or psychological responses. The most common psychological responses include fear, guilt and shame, anger, blame, and sadness (Boehnlein, 2002). Each psychological response is discussed below.

Fear is a prospective, primal emotion deeply rooted in our biology and evolution (Eisenberg et al., 1997; Lazarus, 1968). Fear is the initial, most basic response to trauma. According to emotion theories, fear arises in response to the possibility for harm present under conditions of perceived threat (Eisenberg et al., 1997; Lazarus, 1968). Combined with the element of surprise or shock, fear is manifested as pain in the body, similar to physical injury, and it produces similar physiological reactions (Young, 1995). Defined

as an unpleasant sensory and emotional experience, pain is associated with potential tissue damage (Mersky & Bodguk, 1994). Researchers studying how fear and pain are connected have concluded that fear is translated into pain through patho-physiological pathways (Young, 1995).

While fear is considered to be an adaptive response that triggers defensive behaviors to protect the individual from danger, if inappropriately regulated, it can become maladaptive. To illustrate, an individual who experiences sexual assault from their intimate partner will come to fear the partner, and potentially, end the relationship, in efforts to protect the self from further harm. If this individual associates intimate partnership with sexual assault, she/he may avoid any future intimate connections altogether. The fear induced by the prior intimate relationship has not been appropriately regulated, and thus becomes a maladaptive mechanism. In these instances, the stress response system fails to “switch off” and continues to operate as if the fear-inducing stressor is still present. This maladaptation can result in psychological disorders, such as anxiety, post-traumatic stress disorder, etc. (Steimer, 2002).

Guilt and shame are two of the most widely experienced emotions post-trauma. They are considered retrospective emotions as they arise from appraisals of the traumatic event. Both guilt and shame are rooted in negative appraisal, however, they are differentiated by the object that is being negatively appraised. Guilt stems mainly from cognitive appraisal and is the result of a negative appraisal of one’s behavior. Shame, on the other hand, is the result of a negative appraisal of oneself that stems from both a cognitive appraisal and moral judgment (Lewis, 1971; Tangey, 1991). To illustrate, in

examining one's own behavior in response to trauma, guilt says "I did something bad.", while shame says "I am bad." Shame is a more destructive emotion as it relates to feelings of having let oneself down (van der Kolk et al., 1996). Additionally, shame is predictive of posttraumatic stress disorder symptoms (Andrews et al., 2000).

The experience of blame after trauma takes many forms – individuals affected by trauma may blame themselves, others, a higher power, the system, etc. The most damaging blame one could experience is self-blame. Traumatized individuals, especially children, tend to blame themselves for having experienced trauma. As trauma poses a threat to one's assumptive world and mental schemas, it threatens to shatter one's view of the self as invulnerable (Janoff-Bulman, 1992). This threat to one's view of self as invulnerable generates feelings of anxiety and helplessness, which further threaten the individual's sense of control over her/his life. In an attempt to counteract these feelings and create some sort of control, the individual may assume responsibility for the trauma (van der Kolk, 1987). Feeling responsible for the trauma puts the individual in a position of "power" via rationalization that what led to the trauma could be corrected and/or avoided next time. Thus, self-blame restores (possibly illusional) control over one's life and manages to keep previously held mental schemas intact.

Anger is another commonly experienced emotion following traumatic exposures (Andrews et al., 2000; Connor et al., 2003; Brewin et al., 2000). Anger is often understood as a response to actions of an external agent which led to defeat or blocked goals (Lazarus 1968; Eisenberg et al., 1997). In other words, when an injustice has been caused against us, and we lack the ability to respond or "hit back" or we get defeated, we

feel anger. Some researchers (Eisenberg et al., 1997) believe that anger acts as a “force” propelling us to action.

Sadness experienced in response to traumatic events is understood as a response to appraisals of loss (Lazarus, 1968). Generally, individuals feel that trauma results in some loss, which can take the forms of loss of self, loss of resources, loss of support, loss of connection, loss of life, etc. Research shows that sadness is often elevated after experiencing trauma (Janoff-Bulman, 1985).

The prevalence of emotional responses during and after traumatic events is high for all types of trauma. Research has found that in the case of sexual trauma, emotional responses are especially high, increase sharply, and are much higher when compared to emotional responses reported in other trauma types, both pre and post trauma (Amstadtlet & Vernon, 2008). Generally, the experience of fear is higher during the traumatic event compared to after it, whereas shame, guilt, anger, and sadness tend to increase post-trauma (Amstadtlet & Vernon, 2008). This occurrence makes sense as fear is a primal, prospective emotion, whereas shame, guilt, anger, and sadness are retrospective emotions, arising from appraisals of the traumatic event. Anger, shame, guilt, and sadness increase drastically following traumatic events (Janoff-Bulman, 1985) with levels being significantly higher in victims of sexual assault than in victims of all other types of traumatic events (Amstadtlet & Vernon, 2008). Significantly high levels of anger have also been reported by combat veterans (Novaco & Chemtob, 2002), in addition to sexual assault victims (Ruch et al., 1991).

Cognitive Responses

While trauma is usually perceived as a highly emotional experience, it is also a highly cognitive experience. The most frequently experienced cognitive responses to traumatic events include withdrawal, dissociation, intrusive thoughts, avoidance, hypervigilance, and cognitive distortions. Each of these responses are discussed below.

The psyche's normal reaction to a traumatic experience is withdrawal from the source of trauma. For example, an individual who has experienced a severe car accident avoids driving or being a passenger in a car altogether. This withdrawal from the source of trauma is a coping mechanism aimed at protecting the individual from the potential reoccurrence of a similar traumatic event. If withdrawal is not possible, such as in cases when the individual cannot escape (e.g. domestic abuse, captivity, natural disaster, etc.), then a part of the self is withdrawn. For this withdrawal to take place, the ego splits into fragments or dissociates.

Dissociation is a normal trauma response initiated by the psyche as a defense mechanism against the potentially damaging impact of the trauma. Through the process of dissociation, unbearable traumatic memories are “sent” into different compartments of the mind and body, especially the unconscious (Kalsched, 1996). This process ensures survival, allowing the individual to function and go on with life. Kalsched (1996) described dissociation as an active attack of one part of the psyche on the other parts which is fueled by a surge in aggression. He posited that the external violence of the traumatic event activates internal innate primitive responses that reflect that violence; in

other words, it activates internal aggression. It is precisely this internal aggression that gives birth to the energy needed for the psyche's dissociation.

The psychological sequela of the traumatic event haunts the individual's inner world (Kalsched 1996, p. 13) even long after the event has ended. This haunting manifests as intrusive thoughts. Intrusive thoughts are unwanted, unwelcomed, and distressing memories of the traumatic event that pop into the individual's mind unexpectedly. For example, a child who has been constantly emotionally abused by a caregiver may frequently have thoughts of his abuser saying that she/he is worthless, that no one loves her/him, etc. Such thoughts are highly distressing, and, depending on the type of traumatic event, they can interfere significantly with daily functioning. Intrusive thoughts keep the victim in a constant state of reliving the traumatic experience, thus continuously being re-traumatized by it.

Being hunted by intrusive re-experiences of the traumatic event forces individuals to organize their life around avoiding triggers to such re-experiences, as well as numbing the emotions that these intrusions evoke. Examples of avoidant behavior include avoiding places, individuals or activities that could trigger memories of the traumatic event; dissociating to keep experiences away from conscious awareness; consciously "pushing down" reminders of the event; taking drugs or alcohol to numb cognitive and emotional distress, etc. According to research, avoidance hinders the effective processing of traumatic memories, the reduction of negative emotions linked to those memories, and the elimination of fear responses triggered by internal or external reminders of the trauma (Foa & Rothbaum, 1998; Keane & Barlow, 2002). Avoiding memories of the traumatic

event impedes the recovery process as it prevents the decrease of emotional arousal over time (Foa & Kozak, 1986). Furthermore, avoidance may also reinforce symptoms of post-traumatic stress disorder and other trauma-related disorders by informing the individual that the memories of the traumatic event are indeed perilous (Foa & Kozak, 1986). Moreover, avoidance of unwanted thoughts, emotions or reminders of the traumatic event contributes to the creation and maintenance of a generalized numbing of one's engagement with and responsiveness to life, including positive aspects of life. To illustrate, as an individual tries to avoid negative emotions arising from the memories of the traumatic event, simultaneously, she/he numbs any positive emotions arising from current positive life events. Avoidance leads to a state of simply "going through life", not "living through life".

Traumatic experiences also give rise to hypervigilance in individuals. Hypervigilance entails a heightened state of alertness coupled with an increased sensitivity to potential threats. Hypervigilance can be draining, interfering with daily functioning. According to Bessel van der Kolk (1987), it appears that the hypervigilance caused by trauma depletes both the biological and psychological resources necessary to experience a wide variety of emotions. One of the most troubling aspects of this hypervigilance is the tendency to generalize threat or perceive threat everywhere. Consequently, the world transforms into an unsafe place.

Lastly, traumatic experiences can also lead to cognitive distortions. Cognitive distortions encompass errors in thinking (Burns, 1980), as a result of which the individual engages in negative thinking and adopts negative beliefs. For example, a person who

experienced a traumatic event caused by a trusted individual may develop the belief that people are not trustworthy, and that they will never be able to fully trust someone again. In doing so, the individual engages in overgeneralization, one of the cognitive distortions. Thus, cognitive distortions are irrational thoughts and beliefs that we adopt throughout life. Born from life experiences, they may act as protective mechanisms, however, they have great potential to lead to maladaptive functioning.

In summary, traumatic experiences, while highly emotional, are also highly cognitive experiences. As a result, they lead to cognitive responses. The most frequently experienced cognitive responses to traumatic events include withdrawal, dissociation, intrusive thoughts, avoidance, hypervigilance, and cognitive distortions. Initially functioning in the capacity of protective mechanism, these cognitive responses may lead to maladaptive thinking and functioning if allowed to “run wild” and not be processed correctly.

Social Responses

In addition to individual responses, experiencing traumatic events also has an impact on social connections. Research indicates that the experience of trauma disrupts the attachment system (Mikulincer et al., 2015; Schimmenti et al., 2014), directly impacting relationships. According to attachment theory (Bowlby, 1983), attachment is a lasting emotional bond with another person originating with caregivers at birth and continuing with social and intimate attachments as life progresses. Attachment theory describes this emotional bond as innate and being evolutionary driven as it ensures survival. Traumatic events “throw off” the attachment system. As a result, individuals

with a history of trauma tend to feel a diminished sense of connection with family and friends (Dorahy et al., 2009). Others may experience difficulties with intimacy and/ or sexual functioning (De Silva, 2010; Mills & Turnbull, 2004).

Additionally, research has established a connection between interpersonal trauma and the development of maladaptive relationship schemas (Karatzias et al., 2016).

Relationship schemas involve ways in which individuals conceptualize relationships. For example, an individual may believe that intimate relationships are safe. However, after having been violated (emotionally, physically or sexually) in an intimate relationship, that individual's relationship schema may transform into "Intimate relationships are not safe; stay away from them". Such relationship schema is maladaptive as the individual generalized her/his experience to all future experiences in the sphere of intimate relationships. Holding maladaptive relationship schemas impacts relational attachment or one's ability to connect with and form attachment bonds with others (Mason et al., 2005). In the example above, the generalization that intimate relationships are not safe will potentially prevent the individual from creating an intimate bond with someone.

In summary, the experience of traumatic events generates intricate responses including neuro-biological, psychological, cognitive, and social responses. These responses impact the individual's experience of the traumatic events, her/his understanding of and meaning derived from it, and future trajectories post-trauma.

Research on Response Trajectories to Trauma

Following the occurrence of a traumatic event, the individual experiences a plethora of complex responses, including physiological, psychological, cognitive, and

social. Initial responses to trauma, albeit negative in nature, are normal and expected. After some time, depending on the individual, type of trauma, and a variety of other factors, responses tend to follow three main trajectories: (1) negative response trajectory or pathology, (2) neutral response trajectory or maintaining the status quo, also referred to as resilience, and (3) positive response trajectory or post-traumatic growth.

Negative Response Trajectory - Pathology

Levine (1997) stated that, “Trauma evokes a biological response that needs to remain fluid and adaptive, not stuck and maladaptive” (p. 37). However, the body’s regulatory response to threat is not always accurate, especially in the context of traumatic experiences (Porges, 2004). Oftentimes, this deregulation manifests as prolonged hyperarousal (Ford et al., 2010). The body interprets this hyperarousal as the presence of a constant state of threat. This could lead to faulty neuroception, meaning that the brain is no longer able to accurately assess threats. In fact, the brain is under the faulty impression that all stimuli are threatening. As a result, it becomes difficult for the body to regulate its physiological responses. Increased and chronic physiological distress and difficulties with emotional and behavioral regulation lead to changes in the biology and psychology of the individual (Porges, 2004). This departure from normal physiological responses gives rise to pathological responses.

Many individuals who fail to restore their internal equilibrium following a traumatic experience and who feel powerless in the face of a traumatic event show a tendency to engage in emotion-focused coping. As such, they focus on and try to alter their emotional state instead of the circumstances in which they find themselves. This

coping behavior is often a precursor to developing post-traumatic stress disorder (Porges 2004). At its core, post-traumatic stress disorder is conceptualized as the imprint of a traumatic past into the present. Thus, the trauma experienced in the past becomes the focal point and central force influencing how individuals structure their lives. Such individuals perceive any event in the present in the light of their past trauma, which eventually robs them of joy and a sense of meaning in life. Unlike the traumatic event that had a distinct beginning, middle, and end, the enduring impact of trauma that manifests as PTSD symptoms lacks temporal structure. That is why these individuals could often be described as “being frozen” into the past.

Post-traumatic stress disorder consists of three main elements: increased arousal, re-experiencing of memories, and avoidance. The first element, increased arousal, is exhibited through symptoms such as hypervigilance, irritability, difficulties with memory and concentration, and sleep disturbances. The heightened arousal leads individuals affected by trauma to become more easily distressed by minor irritations. Their perception becomes disorganized and confused, blurring the line between the present and the traumatic past. As a result, they may react to ordinary frustrations as if they were traumatic experiences. The second element, re-experiencing of memories of the traumatic event, manifests as repeated vivid mental images, sensory perceptions (smells and sounds), and physical sensations. These experiences are often accompanied by intense psychological distress and physiological states of both heightened and diminished arousal. Individuals may undergo trembling, crying, feelings of fear, anger, confusion, or even a sense of being paralyzed. These distressing symptoms can contribute to a sense of

disconnection, isolation, and self-blame. Lastly, avoidance of reminders of the traumatic experience is characterized by feelings of detachment and emotional numbing. Both detachment and emotional numbing lead to withdrawal from actively participating in life, which result in an inability to engage with life purposefully and derive pleasure from it.

Furthermore, it is common for traumatized individuals to experience a range of anxiety or fear-based symptoms, externalizing anger or aggressive symptoms, dissociative symptoms, or a combination of these (APA, 2023). Compared to people who have not experienced trauma, individuals who have experienced trauma are more likely to experience psychological problems, as well as having an increased risk for developing mental illness and substance abuse problems (APA, 2023). Additionally, this population is at greater risk for health problems, including neurological difficulties (Anda et al., 2006), and social and relational issues (Dodge et al., 1994). These pathological consequences develop because dysregulation of the body's stress response causes changes to the brain structure and development.

In summary, the negative response trajectory to trauma is also referred to as the pathological trajectory. It comprises pathological manifestations, such as post-traumatic stress disorder, anxiety disorders, and other trauma-related disorders that arise following the experience of traumatic events.

Neutral Response Trajectory - Resilience

Resilience describes the neutral response trajectory to trauma or maintaining the status quo. The word resilience originates from the Latin verb *resilire* which means “to spring back or leap back”. As a concept, resilience first became evident and was studied

in science, namely, physics, in the context of describing the quality of substances. In relation to humans and human behavior, resilience has been originally studied in the context of human development and psychopathology (Garmezy, 1974; Masten, 1989; Sroufe & Rutter, 1981). The most comprehensive definition of resilience is that provided by Masten, Best, and Garmezy, (1990, p. 426), which views resilience as a process of, capacity for or outcome of successful adaptation despite challenging or threatening circumstances followed by a return to a pre-trauma level of functioning.

Resilience is mediated by several factors. Such factors include both internal and external mediating factors. Internal factors are grouped into three main domains: personality domain (hardiness and sense of coherence), motivation domain (self-efficacy, self-motivation, and self-enhancement), and emotions domain (emotion regulation, optimism, hope, and positive emotions). With regards to external mediating factors, relationships and social support are the most critical external factors.

Research has differentiated between several types of resilience, including psychological resilience (Boardman et al., 2008), health resilience (Sanders et al., 2008), emotional resilience (Chow et al., 2007), physiological resilience (LeBrasseur, 2017), physical resilience (Resnick et al., 2011, Whitson et al., 2016), and disposition resilience (Rossi et al., 2007). Psychological resilience is defined as maintaining positive affect despite negative situations. Emotional resilience describes the ability to differentiate and maintain balance between positive and negative emotions in times of stress. Health resilience focuses on one's capacity to maintain good health in the face of stressful situations. Physical resilience is the ability to maintain physical health in the face of

stress. Physiological resilience describes the organism's capacity to respond to physiological stressors well. Disposition resilience refers to the combination of having a sense of control, being committed, and being willing to learn from a stressful situation. A shared feature among all these types of resilience is the ability to live through stressful situations while maintaining a positive attitude. As facets of the organism are interrelated, the experience of one type of resilience does influence and impacts other types of resilience.

Positive Response Trajectory - Post-Traumatic Growth

The term "post-traumatic growth" was coined in 1996 by Richard Tedeschi and Lawrence Calhoun, and it refers to positive psychological changes that are experienced after a traumatic event as one struggles with the trauma (Tedeschi & Calhoun, 1996). Such changes can include seeing oneself as stronger yet vulnerable, appreciating one's relationships with others, finding meaning in the traumatic experience, developing new goals after the traumatic event, etc. According to Tedeschi and Calhoun (2004), post-traumatic growth describes an experience that shatters an individual's assumptive world and in the struggle with the trauma, the individual's development in at least some areas surpasses the level of development before the traumatic event. The individual not only survives the trauma but undergoes significant changes in cognitive, emotional, and behavioral functioning, going beyond prior levels of functioning. It is important to note that it is not the traumatic event itself that produces growth but rather the struggle in the aftermath of the traumatic event and what comes out of that struggle.

Theoretical Perspectives of Growth After Trauma

Several models of growth have been proposed, describing growth as an outcome (Schaefer & Moos, 1998; Linley & Joseph, 2005), as a coping strategy (Taylor, 1953; Park & Folkman, 1997; Davis et al., 1998) or as both an outcome and coping strategy (Tedeschi & Calhoun, 1995, 2004). The models conceptualizing growth after trauma as an outcome offer a detailed description of growth as an outcome of the struggle with the trauma; thus, growth is the final state of the struggle with trauma. While outcome models provide possible factors that fuel and sustain growth, they offer less information about the underlying processes of growth. The models conceptualizing growth after trauma as a coping strategy, on the other hand, view growth as an adaptive response to trauma or a coping strategy. Finally, the models conceptualizing growth as both an outcome and coping strategy view growth as both an adaptive response and the final result of the struggle with trauma.

To date, the three most prominent theories explaining positive growth after trauma are the Functional-Descriptive Theory of Post-Traumatic Growth (Tedeschi & Calhoun, 1996; Calhoun et al., 2012), the Organismic Valuing Theory (OVP; Joseph & Linley, 2005) and the Biopsychosocial-Evolutionary Theory (Christopher, 2004). The first two theories have been conceptualized based on Janoff-Bulman's (1989, 1992) socio-cognitive theory of shattered assumptions, according to which individuals construct and are guided by core assumptions about the self (i.e., self-worth, self-control), the world (i.e., controllability, randomness, justice, luck) and its people (i.e., benevolence).

Functional-Descriptive Theory of Post-Traumatic Growth

The Functional-Descriptive Theory of Post-Traumatic Growth (Tedeschi & Calhoun, 1996, 2004; Calhoun & Tedeschi, 2006; Calhoun et al., 2012) offers the most comprehensive model of positive growth post-trauma to date. This model sees positive growth after trauma as both a process and an outcome of the struggle with the trauma and its consequences. Growth follows as a consequence of the reconstruction of one's worldview after having been shattered by the trauma. Cognitive engagement and processing is a fundamental component of this model.

Organismic Valuing Theory

The Organismic Valuing Theory (Linley & Joseph, 2005) derived from Joseph's Person-Centered Theory (Joseph, 2004), views human beings as having an innate ability of knowing their life direction and an innate desire to comprehend and integrate experiences in a coherent and meaningful way. The interaction of these innate abilities with the social environment determines one's behavior, whether towards or against one's organismic valuing process. The Organismic Valuing Theory operates within the process of growth through adversity (Janoff-Bulman, 1992), which conceptualizes growth as arising from the struggle to develop new mental schemas. According to this theory, the resolution of trauma results in three possible outcomes (Hollon & Garber, 1988): (1) trauma assimilation, which leads to a return to pre-trauma levels of functioning and is characterized by statements such as "Bad things happen to me;" (2) negative trauma accommodation, which leads to distress and psychopathology and is characterized by statements such as, "Bad things always happen, and I cannot control or prevent them;"

and (3) positive trauma accommodation, which leads to growth as the person's new worldview incorporates the challenges caused by the trauma and is characterized by statements such as, "Bad things happen, and while I may not predict or control them, I can always control my response to them, and I can live life to the fullest every day." Which outcome is manifested is greatly influenced not only by personal characteristics but also by characteristics of the social environment. Psychological safety, mindful presence, empathy, and unconditional positive regard are environmental conditions that foster growth. Thus, the Organismic Valuing Theory is a holistic growth theory that places great importance on how the interaction between our innate drive to integrate experiences in a coherent way and socio-environmental factors shape growth.

Biopsychosocial-Evolutionary Theory

The Biopsychosocial-Evolutionary Theory (Christopher, 2004) posits that shattering of one's worldview following a traumatic event is a normal response to the trauma. One's worldview gets gradually rebuilt through an inherited evolutionary mechanism which is biological, psychological, and social, and which leads to learning. Christopher concluded that distress following a traumatic event happens as a result of the interaction between one's bio-psychological state and the environment. He asserted that the normal outcome of traumatic stress is growth rather than psychopathology, further clarifying that psychopathology results from dysfunctional adaptation of the stress response. While the processes that regulate the stress response are universal, their interaction with the individual experiencing the stress is a function of the individual's unique personality, psychological makeup, cognitive configuration, and socio-cultural

milieu. The conversion of stress into positive adaptation and growth is affected by several factors: (1) the individual's biological health; (2) the individual's cognitive adequacy in interpreting trauma-related information; (3) the individual's capacity to use available resources to deal with the stressful event; (4) the individual's competence to transform stress into learning and adaptive behavior; (5) the responsiveness of the social relationships available to the individual during the traumatic event. The Biopsychosocial-Evolutionary Theory is a holistic theory of growth that highlights the impact of trauma on the biological level, in addition to the psychological level, and the evolutionary drives towards growth rather than psychopathology.

For purposes of my dissertation, I will focus on the Functional-Descriptive Theory of Post-Traumatic Growth (Calhoun et al., 2012) since it is the most comprehensive theory of positive growth after trauma to date.

Functional-Descriptive Theory of Post-Traumatic Growth

Definition

The term “post-traumatic growth” was coined in 1996 by Richard Tedeschi and Lawrence Calhoun, and it refers to positive psychological changes that are experienced after a traumatic event as one struggles with the trauma (Tedeschi & Calhoun, 1996). Such changes can include seeing oneself as stronger yet vulnerable, appreciating one's relationships with others, finding meaning in the traumatic experience, developing new goals after the traumatic event, etc. Over the past 45 years, several different terms have been used to describe the same phenomenon. Table 2.1 shows the term, the source, and an example of its use.

Table 2.1*Other Terminology Used to Indicate Post-Traumatic Growth*

Term	Source	Illustrative Quote
Perceived Benefits	Calhoun & Tedeschi, 1989-1990, 1991; Tedeschi & Calhoun, 1988, 1995; Tedeschi et al., 1984; Tedeschi & Calhoun, 2004	Women tend to report more perceived benefits – positive growth outcomes – than do men from the encounter and struggle with traumatic or highly adversarial events.
Positive Aspects	Calhoun & Tedeschi, 1989-1990, 1991; Tedeschi & Calhoun, 1988, 1995; Tedeschi et al., 1984; Tedeschi & Calhoun, 2004	Individuals facing critical problems such as spinal cord injury, serious illness, and the death of a loved one perceive positive aspects to their suffering, including becoming more grateful and present to life, having a greater understanding of life and its fragility, and developing deeper connections with loved ones.
The Transformation of Trauma	Calhoun & Tedeschi, 1989-1990, 1991; Tedeschi & Calhoun, 1988, 1995; Tedeschi et al., 1984; Tedeschi & Calhoun, 2004	Engaging in cognitive and emotional processing of a traumatic event as a means of reconfiguring one's shattered world assumptions transforms the trauma into positive growth, evidenced in five specific domains.
Positive By-product	McMillen et al., 2001	Positive by-products are defined as unanticipated ways in which the lives, relationships, and views of the self have been improved as a result of going through traumatic experiences.
Positive Emotions	Folkman & Moskowitz, 2000	Positive emotions (e.g., love, compassion, gratitude, hope, etc.) provide three adaptive functions during trauma or severe stress: maintaining coping efforts, providing space, and replenishing depleted resources.
Flourishing	Ryff & Singer 1998, 2000	Flourishing encompasses positive features of the human condition, including the nature of human strengths and well-being.
Discovery of Meaning	Bower et al., 1998	Discovering meaning is a cognitive outcome of thinking about the traumatic event and a central component of psychological recovery from traumatic experiences. Examples of discovering meaning include re-arrangement of life's priorities, living in the present, building deeper connections with loved ones, and developing a greater appreciation for the fragility and preciousness of life.
Transformational Coping	Aldwin, 1994; Pargament, 1996	Coping with a traumatic experience may lead to either a homeostatic function or it may be transformational – a process that leads to a positive transformation for the individual and his life.

Table 2.1 (cont.)

Term	Source	Illustrative Quote
Stress-related Growth	Park, 1998; Park et al., 1996; Schaefer & Moos, 1992	Stress-related growth refers to the potential for growth from highly stressful experiences. Determinants of stress-related growth are personal characteristics (i.e., gender, temperament, personality traits, etc.); characteristics of the environment (i.e., social support, living conditions, etc.); characteristics of the negative life event (i.e., stressfulness, duration, controllability, etc.); and coping behavior (i.e., cognitive redefinition, positive reinterpretation of the event, and acceptance).
Thriving	O'Leary & Ickovics, 1995	Thriving is a dynamic process of adaptation, influenced by numerous individual and social factors and identified in behavioral, cognitive, or affective domains.
Perceived Benefits	McMillen et al., 1995; McMillen & Fisher, 1998; Tennen et al., 1992; Calhoun & Tedeschi, 1991	Perceived benefits refer to self-reported positive life changes after traumatic experiences observed in several life areas (e.g., relationship with the self, lifestyle changes, spirituality, relationships with others, etc.)
Positive Psychological Changes	Yalom, 1980; Yalom & Lieberman, 1991	Stemming from traumatic experiences, trauma sufferers may undergo a series of positive psychological changes including communicating more openly with family and close friends, experiencing fewer fears, rearranging their life priorities, being more present to life, and being less preoccupied with insignificant things.
Positive Illusions	Taylor & Brown, 1988, 1994; Affleck & Tennen, 1996	Most people hold positive illusions about themselves and the world, meaning that they regard themselves and the world more positively than it actually is. In the context of trauma, positive illusions serve two important functions: (1) protective mechanisms, shielding the individual from experiencing overwhelming levels of distress, and (2) help the individual maintain some sort of cognitive and psycho-emotional stability in the face of trauma.
Positive Reinterpretation	Scheier et al., 1986	Positive reinterpretation is described as interpreting traumatic experiences in a positive light or finding the positive in the negative, which ultimately make way for individual growth.
Drawing Strength from Adversity	McCrae, 1984	Drawing strength from adversity is manifested as growing as a person, coming out better, rediscovering what is important, and taking strength from life experiences.
Stren conversion	Finkel, 1974, 1975	Stren, the antonym of trauma, is defined as a health-promoting experience. Trauma is considered an experience that offers growth potential and thus the possibility of being "converted" into a stren.

According to Calhoun and colleagues (2012), post-traumatic growth describes an experience that shatters an individual's assumptive world and in the struggle with the trauma, the individual's development in at least some areas surpasses the level of development before the traumatic event. The individual not only survives the trauma but undergoes significant changes in cognitive, emotional, and behavioral functioning, going beyond prior levels of functioning. It is important to note that it is not the traumatic event itself that produces growth but rather the struggle in the aftermath of the traumatic event and what comes out of that struggle.

I find the term "post-traumatic growth" to be predominant among the other terms because it captures the essence of post-traumatic growth better than the other terms in several ways. First, the term "post-traumatic growth" zeros in on major life traumas (e.g., rape, emotional abuse, natural disasters, etc.) (Tedeschi & Calhoun, 2004) rather than lower-level stress, in contrast to terms as "stress-related growth" (Park et al., 1996). Second, post-traumatic growth refers to transformational life changes that go beyond illusion (Tedeschi & Calhoun, 2004), in contrast to terms that describe growth as positive illusions (Taylor & Brown, 1988). Third, post-traumatic growth describes both a process of growth and an outcome of growth (Tedeschi & Calhoun, 2004), rather than a coping mechanism, in contrast to terms, such as transformational coping (Aldwin, 1994; Pargament, 1996), that describe this phenomenon as a way to cope with traumatic life events. Fourth, while post-traumatic growth represents positive changes following a traumatic event, it surpasses the mere experience of positive emotions (Folkman & Moskowitz, 2000); on the contrary, post-traumatic growth coexists with distress and

negative emotions (Tedeschi & Calhoun, 1996). Fifth, post-traumatic growth involves positive reinterpretation of traumatic events (Scheier et al., 1986) as a one of the cognitive processes, however, it goes beyond positive reinterpretation as it relies on other cognitive processes, as well as emotional processes. Lastly, post-traumatic growth requires shattering of fundamental schemas (Janoff-Bulman, 1992) and coexists with significant psychological distress (Tedeschi & Calhoun, 2004), which fall outside the scope of terms such as flourishing (Ryff & Singer, 1998) or thriving (O’Leary & Ickovics, 1995).

To better understand the concept of post-traumatic growth, it is important to distinguish it from related, yet distinct, concepts, such as resilience, optimism, hardiness, and sense of coherence. Resilience is defined as the ability to go on with life after adversity by remaining psychologically healthy (Garmezy 1985; Werner, 1989). Optimism has been defined as the expectation of positive outcomes after events (Scheier & Carver, 1985). Hardiness has been defined as the ability to be in control of adversities and see them as challenges from which one can grow (Kobasa, 1979; Kobasa et al., 1985). Sense of coherence describes one’s ability to understand and organize events in meaningful ways (Antonovsky, 1987). Post-traumatic growth, on the other hand, describes a phenomenon that differs from the above in several ways. First, post-traumatic growth describes positive growth in five domains that goes beyond the level of functioning pre-trauma. Second, individuals do not simply manage the traumatic event and go on with their lives; rather, they engage cognitively and emotionally with the event, as a result of which they experience growth that exceeds their pre-trauma level of

functioning in certain domains. In other words, post-traumatic growth is transformational in nature. Individuals who possess resilience, hardiness, sense of coherence or optimism report maintaining the status quo during trauma, post-trauma or both during and post-trauma. While these individuals may learn from the trauma, they do not exhibit growth as they do not struggle with the traumatic experience; rather they are able to manage it and “move on with life”.

The Process of Post-Traumatic Growth

Post-Traumatic Growth Theory is built on the constructivist perspective that people construct core beliefs about the self and the world and mental models or cognitive schemas to understand their experiences (Tedeschi et al., 2018). To understand post-traumatic growth in the constructivist perspective, three ways of understanding are integrated: Personal Construct Theory (Kelly, 1955), Cognitive Experiential Theory (Epstein, 1990), and Assumptive World Model (Janoff-Bulman, 1992).

The Personal Construct Theory was developed by George Kelly (1955). Kelly proposed that individuals organize their experiences by constructing dimensions of meaning, which he called “personal constructs”. Individuals use personal constructs to understand and predict their surroundings and the world, including how others might behave, what might happen in the future, what might happen if one engages in a given behavior, etc. Individuals’ experiences serve as a test to their personal constructs, which allows individuals to revise their personal constructs as needed. Founded on the philosophy of constructive alternativism, which assumes that there are infinite possibilities to conceptualize events, Kelly (1955) points out that people are free to

develop different constructions of meaning based on their utility of understanding or predicting events. In addition to understanding events and experiences, personal constructs are also used to construct the self. According to the Personal Construct Theory, the self is actually constructed, not discovered, through a continuous process involving a multitude of pathways. The core constructs are developed early in life and make up one's core of the self. These core constructs serve as building blocks of the self and are so foundational and profoundly deeply rooted that they are considered as indisputable truths rather than constructed realities. Because they are seen as unquestionable truths, they are extremely, if not impossible, to change. Kelly also pointed out that while the individual is the primary force behind the development of personal constructs, social and environmental factors do play a role in this process.

The Cognitive Experiential Theory is an integrative theory of personality developed by Seymour Epstein in 1990. It is based on the following three assumptions: (1) every individual automatically constructs an implicit theory of reality; (2) individuals process information based on two independent, yet interactive, conceptual systems, the experiential system and the rational system; and (3) there are four basic needs that are important: the need to maximize desire and minimize pain (Jones, 1953), the need for relatedness (Bowlby, 1988), the need for a coherent self-concept (Rogers, 1959), and the need to enhance self-esteem (Allport, 1961; Kohut, 1971). As mentioned above, every individual constructs an implicit theory of reality, which includes a self-theory, a world-theory, and connecting prepositions (Epstein, 1990). This theory consists of mental schemas, organized in a hierarchical structure with broad, general schemas at the center

and narrow, situation-specific schemas at the periphery. Broad, general schemas are abstract and include the following: the self is worthy; the world is orderly, and people are trustworthy. Because such schemas are broad, they are highly stable and resistant to change. A disruption of broad schemas results in disequilibrium and high distress (Epstein, 1990). On the other hand, narrow, situation-specific schemas are less abstract, less stable, susceptible to change, and exert less effect on the stability of the hierarchical structure. If and when disproved, these schemas are revised and re-constructed.

Of importance to the Cognitive Experiential Theory are the experiential and rational systems. The experiential system is defined as a preconscious cognitive system tightly related to the experience of affect (Epstein, 1990). It is an adaptive system, very well organized, that when thrown off equilibrium by invalidation of broad schemas results in disorganization and distress. The rational system, on the other hand, is defined as a conscious cognitive inferential system that functions based on a person's logic and that is effortful, analytical, affect-free and highly demanding of cognitive resources (Epstein, 1990). In the context of trauma, the experiential system is especially important since the experience of trauma is highly emotional.

The Assumptive World Model (Janoff-Bulman, 1992) suggests that individuals develop a set of beliefs and assumptions about the world which help them understand the causes and reactions of events, guide their actions and provide them with a general sense of meaning and purpose. These beliefs and assumptions provide individuals with paradigms or schemas in which they operate (Epstein, 1990). A major life crisis or traumatic event shatters these paradigms (Janoff-Bulman, 1992), thus significantly

challenging or even shattering one's understanding of the world and the self. It is the level of disruption of one's assumptive world, rather than the characteristics of the traumatic event, that initiates the process which could result in post-traumatic growth. It is important to note here that the same event can shatter some people's assumptive world but not others. The latter seem to be more capable of fitting the trauma into their assumptive beliefs.

As a result of shattered assumptions, the individual struggles with understanding the new reality in the aftermath of trauma. Tedeschi & Calhoun (2004) suggested that the degree of disruption to one's assumptive world is an indication of how traumatic an event is. Usually, individuals refer to the traumatic event as "dividing" their life story into "life before trauma" and "life after trauma." For example, one of the most basic and universally held assumptions is that people are benevolent. When an individual inflicts pain on another, such as in the case of rape, the assumption that people are benevolent no longer holds true. The traumatic event – the rape – shattered that assumption, leading the individual to struggle with the new reality (i.e., that individuals may not necessarily be benevolent or at least not all the time). Another example is the basic assumption that events are predictable. This assumption gets shattered when a foreign country attacks one's own country, for example. The individual is faced with unpredictability as a characteristic of events, which opposes her/his assumption that events are predictable, and which, in turn, causes the individual to struggle with understanding the new reality.

The struggle to understand a traumatic event that shatters one's assumptions about the self, the world, and its people is evidenced as a struggle of comprehensibility and a

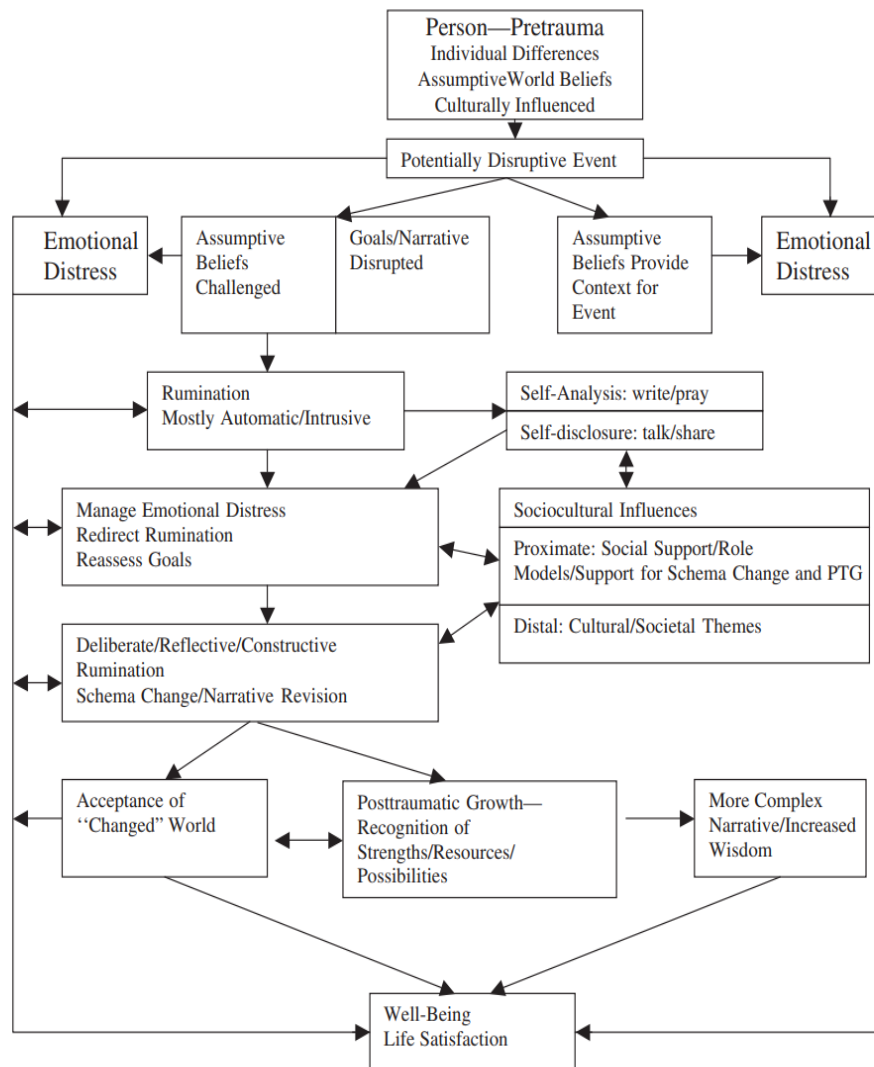
struggle of meaningfulness. Comprehensibility is an attempt to understand that the traumatic event has indeed happened, and it is described by statements such as “I *really* was raped.” Gaining some understanding of the traumatic event leads to a better sense of managing the event and arising emotions and consequences. It is exactly this struggle that determines the extent to which post-traumatic growth occurs (Tedeschi & Calhoun, 2004). Following the struggle for comprehensibility comes the struggle for meaningfulness. The individual engages with questions such as “Why did this event happen, and how is what happened meaningful to me and my life?”

As stated earlier, cognitive engagement with and processing of the traumatic experience is fundamental to the Post-Traumatic Growth Theory. The initial coping responses to the trauma to manage overwhelming negative emotions are gradually substituted by intense cognitive processing which leads to cognitive re-construction (Kelly, 1955). In other words, the engagement in cognitive processing of the traumatic event produces schemas that incorporate the trauma (Tedeschi & Calhoun, 2004). The cognitive processing of the trauma is highly emotional, and it is this affective component that makes these experiences transformative (Tedeschi & Calhoun, 2004). In other words, the growth is not a result of only cognitive reflections on the traumatic event but also a profound emotional engagement with the aftermath of trauma. Because of the rebuilding of shattered fundamental schemas and the high emotional engagement in the struggle with the aftermath of the trauma, growth seems to have both a qualitative and a quantitative difference in trauma survivors (Tedeschi & Calhoun, 2004). The degree to which one engages cognitively with the trauma is a central element in the process of post-

traumatic growth, as engagement in cognitive processing of the traumatic event produces schemas that incorporate the trauma and that are more resistant to being shattered (Tedeschi & Calhoun, 2004). The Theory of Post-Traumatic Growth's most comprehensive representation (Calhoun et al., 2012, p. 6) is presented in Figure 2.1 below.

Figure 2.1

A Model of Post-Traumatic Growth



As seen in the figure above, the post-traumatic growth process starts with the individual pre-trauma and ends with positive changes that occur as a result of the individual's struggle with the trauma. Some elements that play a key role in the experience of post-traumatic growth are: the characteristics of the person pre-trauma, characteristics of the traumatic event, management of emotional distress, rumination/ cognitive engagement and processing, self-disclosure, socio-cultural influences, and life narrative development.

Since cognitive engagement and processing, also referred to as rumination, is of fundamental importance to the Functional-Descriptive Theory of Post-Traumatic Growth, it is worth taking a closer look at this concept. It is proposed that trauma must be processed and integrated into a coherent model of the self (Creamer et al., 1992; Foa & Kozak, 1986). A crucial and foundational factor to achieving this integration is rumination. Rumination involves thinking about the event, the feelings that arise, and trying to make sense of it. Engaging in these cognitive activities is considered beneficial because it helps the individual to restore balance to the disequilibrium between the her/his outer and inner world (Linley & Joseph, 2004).

In Calhoun and colleagues' (2012) Theory of Post-Traumatic Growth, rumination is synonymous with cognitive engagement. The authors adopt the definition of rumination from Martin & Tesser (1996) as "conscious thoughts that revolve around a common instrumental theme and that recur in the absence of immediate environmental demands requiring the thoughts (p.1). Rumination or cognitive processing is positively correlated to post-traumatic growth (Manne et al., 2004). Engaging cognitively with the

traumatic event helps the individual to re-construct her/his life story by incorporating the traumatic event and its consequences. In fact, research has shown that the more traumatic an event, the higher the rumination on that event (Calhoun & Tedeschi, 2004; Tedeschi & Calhoun, 1995, 2008). Higher levels of rumination come as a result of one's pre-trauma assumptive world being shattered significantly (Janoff-Bulman, 1992), therefore, the more the individual tends to ruminate on the event in efforts to make sense of it. Moreover, the higher the rumination levels, the higher the level of growth reported (Linley & Joseph, 2004; Stanton et al., 2006; Wild & Paivio, 2003). While the authors maintain that the more severe the traumatic event, the higher the levels of post-traumatic growth reported, it is important to note that the relationship is curvilinear (Fontana & Rosenheck, 1998; Linley & Joseph, 2004). Extreme levels of trauma may in fact overwhelm the psychological and cognitive resources of the individual, and thus lower one's ability to be able to process the traumatic event.

The initial automatic rumination, which tends to be intrusive, negative, and depressive (Nolen-Hoeksema et al., 1999) is gradually replaced by intentional rumination that is reflective (Nolen-Hoeksema & Davis, 2004; Treynor et al., 2003), deliberate (Calhoun & Tedeschi, 2006), and focused on sense-making (Martin & Tesser, 1996). In this stage, the individual ruminates on the traumatic event for the purposes of rebuilding one's assumptive world by contemplating why the event happened and what can be learned from it (Epstein, 1990; Janoff-Bulman, 1992). To reiterate from earlier, the ruminative process allows the individual to accomplish two things: (1) comprehensibility and (2) meaningfulness (Lazarus & Folkman, 1984). Comprehensibility refers to

accepting that the event actually occurred, being able to make sense of the event, and accepting that certain consequences will follow as a result. After being able to have some understanding of the event, the individual is in a better position to cope with the aftermath of the traumatic event. In coping with the aftermath of the traumatic event, the individual engages in reflective rumination for purposes of creating meaning out of the event. Ruminating reflectively allows the individual to move from “Why did this happen?” to “Why and in what ways is this event significant, and how can I create meaning of what happened?” Engaging in reflective rumination allows the individual not only to “come to terms” with what had happened but to intentionally reflect on it and meaningfully integrate it into one’s life narrative.

Engagement in cognitive processing leads to psychological preparedness or the ability of the transformed assumptive world to resist subsequent traumas (Janoff-Bulman, 1992). This psychological preparedness has also been conceptualized as resilience or the ability to bounce back from highly distressing events. Tedeschi & Calhoun (2004) suggested that it is the personal strength and the changed life philosophy that accommodate the awareness and existence of the possibility of traumatic events, and the changed life priorities that create psychological preparedness to manage subsequent traumas. The new assumptive world assuages experiences of high distress in the face of new traumas as the individual’s world remains comprehensible and significant in the face of subsequent traumatic events. Consequently, subsequent traumatic events do not set in motion extensive engagement in cognitive processing. Psychological preparedness increases one’s resilience in facing subsequent traumatic events. In other words, resilient

individuals are not traumatized by traumatic events as their assumptive world has been psychologically prepared to accommodate and successfully manage traumatic events.

Domains of Post-Traumatic Growth

Initially, qualitative data resulted in three domains of post-traumatic growth: Changes in the Perception of the Self, Changes in one's Life Philosophy and Changes in the Experience of Relationships with Others (Tedeschi & Calhoun, 1995). Factor analysis in a later study (Tedeschi & Calhoun, 1996) resulted in five domains: Increased Appreciation for Life, Relating to Others, Personal Strength, Spiritual Change and New Possibilities.

Increased Appreciation for Life is described as a changed sense of what is important in life that comes as a result of the confrontation with trauma. Confrontation with trauma leads the individual to face her/his vulnerability and inability to control or predict certain events (Calhoun & Tedeschi, 2001). It is accompanied by changed priorities, formulation of new goals reflecting the changes of the post-trauma world, focusing on the present moment, and appreciating life (Tedeschi & Calhoun, 1996; Lindstrom et al., 2013).

Relating to Others involves the development of closer, more intimate relationships with others, as well as the letting go of other relationships (Tedeschi & Calhoun, 1996). Individuals tend to develop closer relationships with family and friends to which they reach out to disclose their trauma and from whom they are well-received (Tedeschi & Calhoun, 2004), as well as with other sufferers who have "been in their shoes." On the other hand, individuals tend to let go of relationships that are not healthy

for their world post-trauma or who do not receive well their disclosure of the traumatic event (Tedeschi & Calhoun, 2004). Additionally, the individual experiences a change in the quality of their connection with others – feeling a deeper connection with people in general, especially more compassion towards people who suffer.

Personal Strength is shown by an increase in one's personal strength, accompanied with a sense of being vulnerable (Tedeschi & Calhoun, 1996). These changes come about as a result of significant disruptions to one's assumptive world (Janoff-Bulman, 1992), which lead to the realization of being able to face whatever life throws one's way, as one recognizes one's pool of capacities to deal with adversities and ability to initiate and sustain needed changes. The struggle with the trauma gives the individual the awareness that she/he possesses more strengths and skills as compared to before trauma (Lindstrom et al., 2013). This sense of personal strength is accompanied by the recognition of one's vulnerability and a deep understanding of the negative impact of the trauma in one's life (Tedeschi & Calhoun, 2004).

Spiritual Change refers to the creation of a deeper spiritual life, marked by engagement with fundamental existential questions (Tedeschi & Calhoun, 1996). Also, the individual opens up to religious questions and growth in religious spheres (Lindstrom et al., 2013). Research suggests that an increase in religious faith after trauma may act as a coping mechanism as one struggles to find meaning (Calhoun & Tedeschi, 2001). Individuals who do not identify with a particular religion or identify as non-religious also experience growth in the spiritual domain by engaging in existential questions (Tedeschi & Calhoun, 2004). It is important to note that the experience of spiritual growth varies

across survivors and traumatic events, as well as one's previous commitment to and relationship with religion and spirituality (Pargament et al., 2006).

New Possibilities refers to the identification of new goals and possibilities in one's life (Tedeschi & Calhoun, 1996). As older assumptions have been shattered and no longer serve the individual, the individual disengages from goals that cannot accommodate the reality of the trauma. The individual discovers new options for her/his life (Lindstrom et al., 2013) that allow the individual to move toward new goals that are permitted by the new reality. The new possibilities and new goals reinforce the new philosophy of life.

The post-traumatic growth domains are important in the conceptualization of post-traumatic growth because they describe the main categories of positive changes that individuals report after having struggled with processing, comprehending and making meaning of their traumatic experiences. Additionally, these domains are critical in the facilitation of posttraumatic growth as part of the construction of the trauma narrative.

Traumatic Events Associated with Post-Traumatic Growth

Post-traumatic growth has been reported to occur in a wide array of major life adversities or traumatic events. Table 2.2 below lists the traumatic events and examples.

Table 2.2*Traumatic Events Associated with Post-Traumatic Growth*

Traumatic Events	Sources	Category/ Examples
College students experiencing negative events	Park et al., 1996	Problems in a romantic relationship, academic performance problems, moving away from home, death of a significant other, illness/accident, etc.
Bereavement	Calhoun & Tedeschi, 1989-1990; Edmonds & Hooker, 1992; Hogan et al., 1996; Lehman et al., 1993; Miles & Crandall, 1983; Schwab, 1990; Schwartzberg & Janoff-Bulman, 1992	
Personal Illness	Tennen et al., 1992 Bower et al., 1998; Schwartzberg, 1993; Milam, 2006; Schwartzberg, 1994; Cadell et al., 2003 Collins et al., 1990; Cordova et al., 2001; Stanton et al., 2006; Casellas-Grau et al., 2017 Andrykowski et al., 1993 Senol-Durak & Ayvasik, 2010 Abraido-Lanza et al., 1998 Affleck et al., 1987 Jones & al., 2010	Rheumatoid arthritis HIV infection Cancer Bone marrow transplantation Myocardial infarction Chronic illness Heart attack Critical illness
Coping with medical problems of children	Abbott & Meredith, 1986; Affleck et al., 1985	
Transportation accidents	Joseph et al., 1993	
House fires	Thompson, 1985	
Sexual assault and sexual abuse	Burt & Katz, 1987; Frazier et al., 2001; McMillen et al., 1995; Silver et al., 1983; Veronen & Kilpatrick, 1983	
Combat	Elder & Clipp, 1989; Sledge et al., 1980; Maguen et al., 2006	
Immigration & Refugee experience	Berger & Weiss, 2006; Ersahin, 2022	
Being taken hostage	Cole, 1992; Sank, 1979	

Table 2.2 (cont.)

Traumatic Events	Sources	Category/ Examples
Natural disasters	Cryder et al., 2006; Bernstein & Pfefferbaum, 2018	
Automotive accidents	Snape, 1997	
Sexual assault	Frazier et al, 2004; ; Kennedy et al., 1998; Borja et al., 2006; Cole & Lynn, 2010	
Rape	Vanhooren et al., 2017; Thompson, 2000; Frazier et al., 2001; Frazier et al., 2004; Burt & Katz, 1987; Veronen & Kilpatrick, 1993	
Terrorist attacks	Adams et al., 2019	
Intimate partner violence	Cobb et al., 2006; Song, 2012; Senter & Caldwell, 2002; Taylor, 2004; How et al., 2013	
Incest	Silver et al., 1983	
Interpersonal violence	Kleim & Ehlers, 2009; Grubaugh & Resick, 2007; Kunst, 2010; Kunst, 2011	
The Holocaust	Kahana, 1992	

As evidenced from the table above, post-traumatic growth has been researched and found to be evident in a variety of traumatic experiences. Life events that are most likely to promote growth are the ones that significantly challenge the individual's fundamental assumptions about the world, including assumptions that the world is benevolent, predictable, and controllable; that one is safe and secure, and that others are benevolent and can be trusted (Janoff-Bulman, 1992).

Facilitation of Post-Traumatic Growth

Post-Traumatic Growth can be facilitated through approaches that combine elements of existential, humanistic, cognitive, and narrative approaches to change. Among the factors that contribute to post-traumatic growth are: education, engagement in emotional regulation, constructive self-disclosure, creating a trauma narrative with post-traumatic growth domains, engagement in dialectical thinking, and developing life principles that are robust to challenges (Tedeschi & McNally, 2011).

The role of education in this context is to understand trauma responses as a precursor to post-traumatic growth. Specifically, education focuses on three main points: (1) the phenomenon of trauma which leads to shattering one's beliefs about life; (2) understanding that the reactions to the trauma are normal; and (3) understanding that the shattered beliefs lay the foundation for their growth later. For example, individuals are taught that experiencing feelings of fear, helplessness and anger following a trauma are normal reactions given the context. Likewise, shock and disbelief are common reactions as the trauma shatters one's understanding of the world and the self. In general, education equips individuals with a broad understanding of trauma, including trauma responses and reactions.

Emotional regulation aims to equip survivors with methods to reduce anxiety and somewhat control their automatic intrusive thoughts, which sets the stage for future reflective rumination in contrast to automatic rumination. The initial responses to trauma are anxiety and intrusive thoughts and images that occur automatically. Trauma survivors need to be equipped with methods to reduce anxiety, such as breathing styles,

mindfulness activities, etc. Engaging in activities that lower anxiety also aids individuals in dealing with their intrusive thoughts which initially occur automatically. For example, when an individual is more mindful of one's thoughts and feels less anxiety as a result of having such thoughts, the individual is in a better position to respond in healthy ways. Emotional regulation paves the way for more deliberate rumination, which is intentional and reflective in nature. As the individual feels more mindful and "in control" of his emotions, she/he can then consciously think about the event in efforts to make sense of it.

Constructive self-disclosure following trauma aids post-traumatic growth facilitation through various mechanisms. Disclosure following traumas has been associated with a lower level of distress (Bolton et al., 2003), better physical functioning (Kelley et al., 1997), and a more resilient self-concept (Hemenover, 2003). Additionally, research (Angelo et al., 2008) has found that self-disclosure allows for better cognitive and emotional processing of the traumatic experience. A by-product of sharing one's thoughts, emotions, and feelings about a traumatic event is alleviation of intrusive rumination (Lepore et al., 2000) and fostering of deliberate and reflective rumination (Treyner et al., 2003) – one of the major antecedents to post-traumatic growth (Calhoun & Tedeschi, 2006). In contrast, isolation and keeping things to the self leads to worsening of the negative symptoms post-trauma.

Self-disclosure, which can be achieved by talking to a confidant, a safe group, or a professional, helps the individual reappraise the traumatic event and find meaning as a way of understanding and coping with the event, consequently contributing to the reconstructing one's assumptive world (Janoff-Bulman, 1992) which has been highly

disrupted or shattered as a result of the traumatic event. It is important to note here that in order for self-disclosure to have a positive and facilitating impact, it must be constructive. In other words, the experience must be shared with the intention of gaining understanding and perspective, not simply venting. Of importance in this process is the reaction that the individual receives from the listener. If the reaction of the listener is negative, the individual is likely to experience more negative feelings, including shame and feeling damaged. This is the reason why many individuals find it difficult to open up to others and choose not to discuss their experiences with others. On the other hand, receiving supportive responses from others offers perspectives which are integrated into the individual's reconstruction of mental schemas, ultimately helping the individual craft a narrative that incorporates the changes due to the traumatic event.

Additionally, expression of emotions via disclosure which has been well-received by the listener/ recipient may help the individual feel a deeper connection to the listener, which contributes towards the strengthening of a current relationship or the gaining of a new relationship. Moreover, in sharing one's traumatic experience, the individual may find others who have had similar experiences, and who function as role models for post-traumatic growth. Sharing experiences with this group in particular is very validating as this group, having gone through the same experience, really knows what and how the individual is feeling. Indeed, significant changes in relationships, such as a greater sense of intimacy and closeness, is one of the domains of post-traumatic growth (Tedeschi & Calhoun, 1996). Thus, in conclusion, constructive self-disclosure serves as a way of

receiving support, processing the traumatic event, developing a coherent trauma narrative, and finding models for healthy trauma response.

Furthermore, post-traumatic growth could be facilitated by creating a trauma narrative with post-traumatic growth domains (Tedeschi & McNally, 2011). As trauma leads to shattered beliefs and disengagement from previous goals, the revised life narrative will include creation of new goals. Especially important here is organizing the story of trauma into a coherent narrative where trauma is the turning point and is viewed as a catalyst.

Equally important is engagement in dialectical thinking and appreciating paradoxes (e.g. that good things can come out of bad). Also, it is important to introduce the kind of changes that may occur by using the same language used by Tedeschi and Calhoun (1996) to refer to the domains of growth: Personal Strength, Spiritual Change, Enhanced Relationships with Others, New Opportunities and Appreciation for Life.

Lastly, in facilitating posttraumatic growth, it is important to develop life principles that are robust to challenges (Tedeschi & McNally, 2011). Having gone through trauma and having experienced growth as a result of the struggle in the aftermath of trauma, trauma survivors are better equipped to develop ways of thinking and behaving that will increase their resilience in the future.

Measurements of Growth Following Trauma

To measure growth after trauma, several self-report instruments have been developed to date, each producing different growth dimensions. Table 2.3 below offers a

summary of these instruments in chronological order, their authors, and a brief description of each.

Table 2.3

Instruments Measuring Growth Following Trauma

Instrument Name	Authors	Brief description
Changes in Outlook Questionnaire (CiOQ)	Joseph et al., 1993	26 items measuring positive (11 items) and negative (15 items) changes in outlook following trauma
The Posttraumatic Growth Inventory (PTGI)	Tedeschi & Calhoun, 1996	21 items measuring areas of positive growth following trauma; items are grouped under 5 subscales (new possibilities, relating to others, personal strength, spiritual change, and appreciation of life)
Stress-Related Growth Scale (SRGS)	Park et al., 1996	50 items assessing growth related to experiences of stress; half of the items reflect positive changes in personal resources, and the other half reflect positive changes in social relationships and coping Skills
Thriving Scale (TS)	Abraido-Lanza et al., 1998	21 items measuring thriving; composed of 3 items from the PTGI, 15 items from the SRGS, and 2 items developed by the authors
Perceived Benefits Scales (PBS)	McMillen & Fisher, 1998	30 items measuring commonly reported positive by-products of adversity; items are grouped under eight subscales: increased self-efficacy, increased compassion, lifestyle changes, increased spirituality, increased family closeness, material gain, increased faith in people, increased community closeness

Table 2.3 (cont.)

Instrument Name	Authors	Brief Description
Revised Stress-Related Growth Scale (R-SRGS)	Armeli et al., 2001	43 items under eight subscales assessing self-understanding, personal strength, life satisfaction, affect regulation, optimism, belongingness, religiousness, treatment of others
Psychological Well-Being Post-Traumatic Changes Questionnaire (PWB-PTCG)	Joseph et al., 2012	18 items assessing perceived changes in psychological well-being following traumatic events.

Initially developed in English-speaking countries, these instruments have since been translated in several languages as the study of post-traumatic growth has expanded around the world. The most used instrument worldwide to measure positive changes following trauma is the Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996).

The Post-Traumatic Growth Inventory resulted from three studies conducted by Richard Tedeschi and Lawrence Calhoun. Initially, Tedeschi and Calhoun conducted an extensive literature review of the body of literature comprising experiences of positive outcomes from the struggle with traumatic events. Based on the literature review, 34 items were generated describing three major benefits reported by individuals. Table 2.4 below lists these three major benefits and their sources.

Table 2.4*Benefits Post-Trauma*

Term	Sources
Perceived changes in the self	Affleck et al, 1985; Andreasen & Norris, 1972; Joseph, et al., 1993; Collins et al, 1990
Changed sense of relationships with others	Affleck et al, 1985; Malinak et al., 1979; Veronen & Kilpatrick, 1993; Burt & Katz 1987; Dakof & Taylor, 1990
Changed philosophy of life	Malinak et al.,1979; Affleck et al., 1985; Taylor et al., 1984; Joseph et al., 1993; Schwartzberg & Jannof-Bulman, 1991; Pargament et al., 1990; Janoff-Bulman, 1992; Taylor & Brown, 1988

The 34 items were administered to a total of 199 males and 405 females who were recruited from undergraduate Psychology classes in a university in the Southeastern part of the U.S.A. The participants' age ranged from 17 to 25, and 95% were single. The participants were asked to indicate for each statement the degree to which they had experienced that particular change in their life as a result of the struggle with a traumatic experience. A 6-point Likert scale was used, ranging from "I did not experience this change as a result of my crises." (scored 0) to "I experienced this change a very great deal as a result of my crises (scored 5). The questionnaire form also included demographic

data and space to describe difficult life events experienced by the participants. The traumatic events that the participants reported to have experienced included bereavement (36%), injury-producing accidents (16%), separation or divorce of parents (8%), relationship breakup (7%), criminal victimization (5%), academic problems (4%), unwanted pregnancy (2%), and a variety of other traumatic events. These events were reported to occur between 6 months ago in 22% of the cases to more than 4 years ago in 13% of the cases.

Given that the 34 items had produced high internal consistency ($\alpha=0.94$), in order to maximize the distinction among the components, a principal component analysis followed by a varimax rotation analysis were performed on the items (Tedeschi & Calhoun, 1996). Out of the six factors produced with eigenvalues greater than one, five were easily interpretable, therefore the items loading on these factors (21 items) were retained as having utility. A second principal component analysis and varimax rotation analysis were conducted using the 21 items, producing five factors with eigenvalues greater than one, identical to those found with the 34 items and accounting for 62% of the common variance. These five factors were labeled Relating to Others, New Possibilities, Personal Strength, Spiritual Change and Appreciation of Life (Tedeschi & Calhoun, 1996).

The second study was conducted for the purpose of establishing that the perceived benefits post-trauma did not reflect other tendencies, including social tendencies (e.g., social desirability) and personality dimensions (e.g., optimism, religiosity, extraversion, etc.). To examine the relationship between the post-traumatic growth inventory and these

other tendencies, the authors used valid measures of these tendencies. Specifically, to examine the relationship between the post-traumatic growth inventory and social desirability, the authors used the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960). To examine the relationship between optimism and the post-traumatic growth inventory, the authors used the Life Orientation Test (LOT; Scheier & Carver, 1985). To examine the relationships between the ability to perceive benefits in trauma and various personality characteristics, the authors used the NEO Personality Inventory (Costa & McCrae, 1985), which consists of scales of Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. To examine the relationship between the post-traumatic growth inventory and religion, the authors used a three-item religion measure (Pressman et al., 1990). Results of these examinations concluded that the post-traumatic growth inventory was not related to social desirability, but was positively correlated with optimism, religiosity, Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and negatively related with Neuroticism.

The third study was conducted for the purpose of establishing construct validity; in other words, to establish that the post-traumatic growth inventory measures benefits that are unique to trauma and not benefits experienced by ordinary life events. A gender by severity of trauma analysis of variance with the total post-traumatic growth inventory score found that women reported more benefits than men, and that individuals experiencing more severe trauma reported experiencing more benefits. The same approach of gender by severity of trauma applied to a multivariate analysis of variance

with the five post-traumatic growth factors found that women experienced more benefits post-trauma than men. In addition, women reported more benefits than men in all four domains except Appreciation of Life. Finally, individuals reporting more severe trauma reported experiencing more benefits, especially in the areas of New Possibilities, Relating to Others, Personal Strength, and Appreciation of Life but not Spiritual Change. Based on the findings above, the authors concluded that the post-traumatic growth inventory is a valid measure of benefits that are unique to the experience of trauma.

Variables Associated with Post-Traumatic Growth

Research has found several variables to be associated with post-traumatic growth. Variables associated with post-traumatic growth can be conceptualized as variables related to (1) the person, (2) the traumatic event, and (3) circumstances. Variables related to the person include cognitive appraisal, socio-demographic characteristics, personality characteristics, coping ability, religiousness, access to social support, emotional disclosure, culture, cognitive processing, affective state, psychological distress, personal control and sense of coherence. Variables related to the traumatic event include event type, event severity, source of violence, and intentionality (Kimerling et al., 2007; Kucharska, 2017). Variables related to circumstances include time passed since the traumatic event, number of positive events since the traumatic event, and event centrality.

A person's cognitive appraisal of the traumatic experience has been found to be related to post-traumatic growth. Cognitive appraisal is defined as the personal interpretation of a situation that ultimately determines whether or not a situation is considered stressful (Folkman et al., 1986). Cognitive appraisal consists of (1) assessing

whether an event presents threat or danger to one's well-being; (2) evaluating whether one has the necessary resources to face the event; and (3) evaluating what can be done to overcome the event and extract benefits from it. In terms of cognitive appraisal, awareness (Park et al., 1996), controllability of the event (Evers et al., 2001; Park et al., 1996; Tennen et al., 1992), and positive reframing (Hamama & Sharon, 2013; Trzebinski & Zieba, 2013) are associated with higher levels of growth.

Additionally, a person's socio-demographic characteristics have been found to be related to their post-traumatic growth. Socio-demographic variables include gender, age, education, and income. Research has shown that women experience higher levels of growth than men (Park et al., 1996; Tedeschi & Calhoun, 1996). There are a plethora of explanations for these findings, which will be explained in greater detail in later sections. With regards to age, research suggests that younger participants report higher levels of growth provided that a certain level of developmental growth has been attained (Milam et al., 2004). Other studies (Polatinsky & Esprey, 2000) have found older age groups to be less likely to experience post-traumatic growth. Given the complexity of the post-traumatic growth phenomenon, no definitive answers have been generated to explain these observations, however, several explanations have been proposed. Researchers agree that a certain level of maturity or level of developmental growth must be obtained. Such level of maturity ensures that the individual has an established or somewhat established assumptive world (i.e., beliefs and assumptions about life, the self, and others), which get shattered as a result of the traumatic experience (Janoff-Bulman, 1992), and consequently sets in motion the necessary emotional and cognitive processing. Younger individuals,

who do not have a somewhat established assumptive world or solid mental schemas, are more likely to assimilate the experience; whereas older individuals, who tend to have an established, yet flexible, assumptive world, are more likely to accommodate the experience. In both such cases, one's assumptive world does not get shattered; rather, the experience flows more easily inside the individuals' assumptive world.

Moreover, higher levels of education and income have been associated with higher levels of growth (Fontana & Rosenheck, 1998; Updegraff et al., 2002). Attaining higher levels of education allows for vaster knowledge and better understanding of a wide variety of life events and experiences, including trauma, trauma recovery, and growth post-trauma. In addition to having better internal resources (i.e., more knowledge, understanding, coping abilities, etc.), individuals with higher levels of education also possess more external resources to help them deal with, recover from, and grow post-trauma. Examples of such resources include social support, therapeutic services, etc. Likewise – and tied to higher levels of education – higher levels of income facilitate one's journey post-trauma, as higher income makes it possible for the individual to pursue help from various sources, thus increasing the chances of experiencing growth following the traumatic event.

An individual's personality characteristics also impact their growth following trauma. According to the American Psychological Association (2023), personality refers to a constellation of distinctive characteristics and patterns of thinking, feeling, and behaving that comprise a person's unique persona. These characteristics and patterns tend to be stable throughout life and influence how an individual engages with life, others, and

the self. Examples include major traits, values, drives, self-concept, abilities, interests, and emotional patterns. While the development of personality is explained in various ways by different theorists, they all agree that that personality helps determine behavior. One of the most widely studied and applied theories of personality is the “Big Five Personality Traits” theory developed in 1949 (Fiske, 1949), and later expanded upon by other researchers including Smith (1967), Goldberg (1981), and McCrae and Costa (1987). This theory describes five main personality characteristics: conscientiousness, openness, extraversion, agreeableness, and neuroticism. Conscientiousness is a trait that includes high levels of thoughtfulness, goal-directed behavior, and good impulse control. Openness is a characteristic that includes insight, imagination, and an eagerness to experience and learn from new things. Extraversion means being energized through interactions with others, and it is manifested via behaviors such as sociability, talkativeness, and high amounts of emotional expressiveness. Agreeableness is a trait characterized by kindness, affection, trust, and altruism, manifested behaviorally as sharing, cooperating, and engaging in prosocial behaviors. Lastly, neuroticism is characterized by moodiness and emotional instability. Of the Big Five personality profiles, extraversion, openness to experience, conscientiousness, and agreeableness have been positively associated with growth, while neuroticism has been negatively associated with growth (Tedeschi & Calhoun, 1996, 2004; Evers et al., 2001; Liney & Joseph, 2004). Tennen and Affleck (1998) proposed that individuals are prone to experience growth in areas that match their pre-trauma predispositions. For example, individuals who used to be very extraverted pre-trauma are prone to see more positive changes in

their relationships with others. Individuals who were more open to experiences pre-trauma are more prone to reflect on their life philosophy and formulate new goals post-trauma.

Furthermore, self-efficacy, hardiness, optimism, and high self-esteem have been positively associated with growth (Davis et al., 1998; Evers et al., 2001; Tennen et al., 1992; Updegraff et al., 2002; Abraido-Lanza et al., 1998; Joseph et al., 1993). Research has indicated that individuals who are particularly high in cognitive complexity, self-efficacy, and dispositional hope (the tendency to utilize a cognitive-focused process; Snyder et al., 1991), are more likely to report growth following trauma (Tedeschi & Calhoun, 1995; Tennen & Affleck, 1998). Thus, an individual's cognitive complexity coupled with personality traits play an important role in her/ his capacity to experience post-traumatic growth.

Ability to cope with adversity has been found to impact post-traumatic growth (Prati & Pietrantonio, 2009). In analyzing variables associated with growth following a traumatic event, coping is defined as a context-specific process of emotional, cognitive, and behavioral flexibility to manage internal or external demands placed on an individual that are perceived as exceeding one's intrapersonal resources (Folkman et al., 1986). Coping includes the parameters of emotion-focused coping (Maercker & Langner, 2001), problem-focused coping (Armeli et al., 2001; Evers et al., 2001; Koenig et al., 1998; Tedeschi & Calhoun, 1996), acceptance coping (Brooks & Matson, 1982), and positive reinterpretation (Tedeschi et al., 1998) – all of which have been associated with positive growth. Coping strategies characterized by denial, emotional suppression or repression

are negatively associated with post-traumatic growth and positively associated with diminished health outcomes (Linley & Joseph, 2004). This work suggested that one's desire to engage with the trauma in order to learn from the experience and find positive meaning in it increases the likelihood that one will experience and report growth (Tedeschi et al., 1998).

Similarly, some aspects of a person's religiousness have been studied in their connection to one's post-traumatic growth (Pargament et al., 2000). As religiousness has been linked to psychological well-being, it does also influence the experience of growth post-trauma. From the three main types of religiousness – extrinsic, intrinsic, and quest (Maltby & Day, 2003), – only intrinsic religiousness has been found to have a positive association with perceptions of growth (Maltby & Day, 2003). Intrinsic religiousness is defined as the degree to which religion assists an individual to comprehend the event and find meaning in it (Park et al., 1996). Thus, religion is used as a framework to understand life post-trauma; the more consolidated the belief system, the more one is able to make sense of one's experience of the event and derive meaning from it. Related to religiousness, the concepts of existential openness (Calhoun et al., 2000) and religious participation (Koenig et al., 1998) have also been found to be positively associated with post-traumatic growth.

A person's access to or experience of social support is another variable associated with post-traumatic growth, although results on the impact of social support on growth are mixed. For the study of post-traumatic growth, social support is conceptualized as a multidimensional construct defined as emotional or material comfort, assistance, and

information that an individual receives from other individuals or groups (Wallston et al., 1983). Some studies have concluded that pre-event social support acts as a buffer in the aftermath of traumatic events (Cadell et al., 2003). In this regard, supportive others help through acceptance and cognitive processing, especially with regard to finding meaning after traumatic events (Tedeschi & Calhoun, 1996, 2004). Other studies suggest that while the amount of social support generally tended not to be associated with growth, support satisfaction was (McMillen et al., 1997). In other words, it was the satisfaction of the individual having suffered a traumatic event with the support received that aided in growth post-trauma. Mutual support – support from those who have already experienced the same traumatic event – was found to be especially beneficial, as these individuals have already “been there” as opposed to individuals who have not and are only supposed to understand the traumatic event. While the impact of social support on post-traumatic growth has been evidenced through research, there is not enough concluding evidence to determine whether social support enhances post-traumatic growth or whether having experienced post-traumatic growth enhances satisfaction with social support (Schaefer & Moos, 1998; Tedeschi & Calhoun, 2004).

Self-disclosure of the traumatic experience to significant others has also been found through research to contribute to post-traumatic growth (Dirik & Gocek-Yurulmaz, 2018; Oginska-Bulik & Kobylarczyk, 2015). Disclosure fosters cognitive engagement and processing and acts as a mediator of the relationship between cognitive engagement and post-traumatic growth (Calhoun and Tedeschi, 2013). Emotional self-disclosure promotes post-traumatic growth through promotion of the process of meaning-making

and interpersonal (social) and intrapersonal (temporal) comparisons (McFarland & Alvaro, 2000). Self-disclosure opens one up to others' perspectives, thus facilitating the cognitive processing of the traumatic event (Lepore et al., 2004; Taku et al., 2009). The cognitive processing of a traumatic event is significantly amplified when disclosure happens in the context of sharing with others who have undergone similar experiences. This exchange of experiences helps in normalizing the individual's situation and feelings (Palmer et al., 2016; Richardson, 2016). Further, research indicates that disclosure has the biggest impact on post-traumatic growth when the listener has intimate knowledge of the other's experience of trauma and its consequences, thus being able to better "hold" the other during disclosure (Palmer et al., 2016). Additionally, self-disclosure has been associated with reduced stress, increased physical functioning, and enhanced immune system functioning (Lepore et al., 2004; Pennebaker et al., 2001).

Post-traumatic growth does not take place in a vacuum. In fact, post-traumatic growth is highly influenced by socio-cultural elements, both distal and proximal. Culture is defined as "a socially constructed constellation of practices, ideas, competencies, symbols, values, norms, goals, institutions, rules, artifacts, and modifications of the physical environment (Fiske, 2002, p. 85). As culture is passed on through environmental influences (Stuart, 2004, p. 3), one is impacted by both distal and proximal cultural elements, which are materialized through interactions with others. Thus, interactions with others play a key role (Brown, 2004). Distal cultural elements refer to socio-cultural elements that prevail in societies at large, such as countries, while proximal cultural

elements refer to socio-cultural elements that prevail in smaller communities, such as families or social networks (Calhoun & Tedeschi, 2004).

The socio-cultural milieu colors one's perception of traumatic events and has a direct impact on the possibility of experiencing growth after traumatic events. Studies have shown that while originally studied in North America (Affleck et al., 1987; Tedeschi & Calhoun, 1995), post-traumatic growth is not a concept unique to North America. For example, studies conducted with populations suffering from various traumatic events in other countries, (Morris et al., 2005; Taku, 2010; Taku et al., 2012; Rich & Sirikantraporn, 2020), show that post-traumatic growth is experienced across nations and cultures. Differences do exist, however, in the amount and nature of growth. For example, while both Americans and Australians report post-traumatic growth, Americans report higher levels of post-traumatic growth, while Australians report moderate levels (Morris et al., 2005). These differences could be explained by the different socio-cultural elements and cultural narratives operating in each country. To illustrate, individuals who live in countries where the cultural narrative is dominated by themes of redemption, such as in the U.S. (McAdams, 2006) are more likely to report growth and finding benefits in traumatic experiences (Pals & Adams, 2004) than those living in countries where themes of redemption do not dominate the cultural narrative.

The country's cultural narrative permeates the individual's personal narrative. As a result, individuals living under the influence of such cultural elements are likely to be influenced by these elements (Smith, 2003). Related to cultural narratives are cultural themes that permeate the cultural narratives. Experiences of post-traumatic growth may

be encouraged by specific cultural themes. For example, the American notion of individualism, placing the individual at the driver's seat of her/ his life, may influence individuals in the U.S. to understand and organize their life experiences around themes of growth (Smith, 2003). As such, after going through a traumatic event, individuals are more likely to rely on themes of growth as they emotionally and cognitively process the experience. For example, relying on the theme of personal strength, individuals may come to view the traumatic event as a catalyst to deepening or expanding their personal strength.

Culture also exerts influence on the emotional and cognitive processing of the traumatic event, including rumination, cognitive strategies, rumination content, and self-disclosure. Engaging in rumination following traumatic events is common in many cultures (Zou & Gan, 2007; Shiotsuki & al., 2007; Noguchi & Fujiu, 2007; Taku et al., 2009). Findings suggest that rumination mediates the relationship between locus of control and depression (Zou & Gan, 2007). Ruminating on the traumatic event in efforts to exert some personal control over its aftermath decreases one's depressive symptoms as it establishes a sense of – no matter how fragile – personal control. Indeed, research has indicated that reflective rumination decreases depressive feelings (Noguchi & Fujiu, 2007). The opposite effect has been noticed with regards to mindless or impulsive rumination revolving around negative facets of the traumatic event. Specifically, research suggests that negative rumination enhances anxiety (Shiotsuki et al., 2007). Furthermore, rumination over causes of sadness leads to higher depressive symptoms over time (Roelofs et al., 2006).

Culture impacts rumination by influencing the cognitive strategies involved in it. It does so by influencing one's thoughts on personal control, sources of causation, and stability over time (Janoff-Bulman, 1992). For example, with regards to personal control, there is a major difference between how people from Western and Eastern or Oriental cultures perceive and experience personal control. Individuals from Western cultures tend to believe that they have personal control over shaping events in their life, whereas individuals from Eastern or Oriental cultures tend to believe that they should adjust themselves to the events that they encounter (Morling et al., 2002; Morris & Peng, 1994; Nisbett, 2003). So, in the Western cultural context, when a traumatic event takes place, the individual, assuming more responsibility for the event, shows a tendency to explain the event based on her/his own actions. As a result, the individual is more likely to identify changes in personal strength while dealing with the aftermath of the traumatic event. Individuals from Eastern or Oriental cultures, on the other hand, tend to feel less responsible for the event and tend to engage in finding ways to adjust to the event. They tend to ruminate on the event more so than on their influence on or causation of the event, and as a result, they start seeing the world differently rather than seeing themselves differently or identifying changes in themselves as a result of the traumatic event.

Another notable example is the inclination of individuals from Western cultures to believe that personality characteristics hold a stronger causal force than situational factors (Choi et al., 1999; Kitayama & Uchida, 2005). Consequently, when engaging in meaning making after trauma, these individuals ask questions such as “What is it about *me* that led to this traumatic event?,” thus placing themselves at the center of the issue or

seeing themselves as the cause of the event. Individuals from Eastern cultures, on the other hand, engage in meaning-making in the context of the event. Consequently, they ask questions such as “How can I adapt myself to the situation?” or “How can I avoid these situations?” These examples illustrate that culture heavily influences how one perceives personal control and causality, thus influencing one’s responses to traumatic events and possibilities for post-traumatic growth.

In addition, culture influences assumptions about stability and change over time. Western cultures tend to believe that there is predictability to the future, whereas Eastern cultures assume that events cannot be predicted (Ji, 2005; Ji et al., 2001). Because Eastern cultures’ worldviews accept unpredictability, individuals from these cultures experience less cognitive disruption after a traumatic event. As a result, they may be less likely to experience growth post-trauma (Ji et al., 2004). Individuals from Western cultures, on the other hand, assuming predictability coupled with higher personal control and responsibility, tend to experience more cognitive disruption, and thus report higher levels of post-traumatic growth.

Furthermore, culture has a direct influence on responses to traumatic events. Cultures are broadly categorized in two groups: individualistic and collectivist. Individualistic cultures are characterized by the concept of independence, whereas collectivist cultures are characterized by the concept of interdependence (Markus & Kitayama, 1991; Triandis, 1995). Independence placed emphasis on individual differences, striving for individual achievement, and meeting personal goals. In contrast, collectivism or interdependence focuses on relationships among individuals, seeking

harmony with others, and choosing collective action over individual action (Heine, 2005). Due to these cultural influences, individuals from these very different cultural mindsets experience and engage with traumatic events differently. In other words, culture influences their responses to traumatic events. For example, engaging in rumination after a traumatic event, individuals with an interdependence mindset tend to consider how their reactions to the event might affect others and pay much more attention to how they appear to others (Cohen & Hashino-Browne, 2005; Cohen et al., 2007).

Closely linked with these relationships is culture's influence on how individuals see themselves and their relationships with others, and consequently, their ability to engage in self-disclosure. Self-disclosure, as described earlier, helps in generating new schemas that help facilitate post-traumatic growth. People from interdependent cultures tend to not seek help for emotional problems, and they tend to feel a need to honor their families by not publicly acknowledging the experience of any traumatic events (Cheng et al., 1993; Tracey et al., 1986). The expression of negative emotions is discouraged in these cultures because it is seen as being disruptive to the harmony of the group (Matsumoto et al., 1998). In contrast, individuals from individualistic cultures are more open to ask for help and share their personal experiences, including traumatic experiences. Self-disclosure is further affected by social norms about event type, context, and gender roles (Horenstein & Downey, 2003; Sinha, 1976; Hastings, 2000).

Apart from distal cultural influences, individuals' responses to traumatic events are also influenced by proximal cultural elements, such as their families and social circles. The influences of proximal cultural elements have been especially noted with

regards to self-disclosure, responses of important others to self-disclosure, rumination, and presence of models of post-traumatic growth (Calhoun & Tedeschi, 2006). Research suggests that individuals who engage cognitively with the traumatic experience and who have a high need to self-disclose are more likely to be influenced by the responses of important others (Lepore & Helgeson, 1998). Such responses, in turn, influence the individual's content, manner, and style of self-disclosure. When responses from significant others are not supportive, problems in adjustment and increase in unproductive rumination has been ascertained (Ingram et al., 2001). Supportive responses, on the other hand, have been linked to experiences of growth (Calhoun & Tedeschi, 2006).

Of particular importance in this regard are idioms of trauma, coping, and growth that are transmitted from supportive others to the sufferer and which have the potential to influence one's responses to traumatic events. To illustrate, two idioms – “God never gives you more than you can handle” and “Random shit happens.” – yield two different experiences of and interpretations of traumatic events. While the first idiom puts one in a position of power amidst the trauma, the latter highlights the randomness of life and one's lack of control over life's chaotic events. As one grows up in and around circles where one or the other idiom is given preference, so are one's own beliefs shaped by those idioms. Such beliefs give way to ways of perceiving, thinking, speaking, and understanding traumatic events, all of which directly influence how the individual experiences the traumatic event and its consequences, including how important others will respond to her/his experience of the traumatic event. Such forces, in turn, influence

how the individual copes with the traumatic event, and whether or not she/he experiences post-traumatic growth.

One's coping with trauma and potential for experiencing post-traumatic growth are further influenced by the proximal group's expectations, norms or rules regarding the experience of traumatic events. For example, in some families, disclosure of traumatic experiences is welcome, and even encouraged, while in others, disclosures of this nature are looked down upon and considered shameful. Hence, the post-trauma response and potential growth in these different proximal groups will look very different.

An individual's cognitive processing also impacts their growth following trauma. Cognitive processing in the context of trauma means engaging in rumination or repeated comparisons of trauma-related content with pre-existing cognitive schemas with the goal of achieving cognitive integration and consequently trauma resolution (Horowitz, 1986; Janoff-Bulman, 1992). In studying its relationship to post-traumatic growth, indicators of rumination, intrusion, and cognitive avoidance are positively associated with growth (Calhoun et al., 2000; Cordova et al., 2001; Maercker & Langner, 2001; Snape, 1997; Nolen-Hoeksema & Davis, 1999). In other words, thinking about the traumatic event, its potential causes and consequences, and deriving meaning from it helps one to process the experience and grow as a result of its integration with one's life story. As explained by Tedeschi & Calhoun (1996) and Janoff-Bulman (1992), the initial ruminative thoughts about the traumatic event are intrusive in nature and are gradually replaced with deliberate thoughts of reflective nature. Cognitive avoidance means not engaging with the traumatic event cognitively or in other words, not thinking about the traumatic event.

Cognitive avoidance can occur both unconsciously and consciously. When one's mental capacities feel overwhelmed from the traumatic event or thinking about it, in an effort to not overextend mental capacities, one's psyche automatically disengages from thinking about the trauma. Likewise, when one feels a heavy cognitive or emotional load due to thinking about the trauma, one may consciously choose to "take a break" from the trauma and engage in other activities. Cognitive rumination and avoidance speak to the importance of processing traumatic events cognitively in efforts to rebuild the shattered cognitive schemas and world assumptions.

Someone's overall emotional or affective state also impacts growth following trauma. Positive affect is defined as the subjective experience of positive moods such as joy, interest, love, etc., which are initiated from the experience of positive emotions. On the other hand, negative affect is defined as the experience of negative moods or emotional distress (Watson et al., 1988). Examples of negative affect include experiences of fear, guilt, shame, anger, and other unpleasant emotions, which are natural initial emotional responses to trauma. Positive affect has been found to be positively associated with growth (Abraido-Lanza et al., 1998; Evers et al., 2001; Park et al., 1996; Tennen et al., 1992). Similarly, negative affect has been found to be negatively associated with growth (Abraido-Lanza et al., 1998; Evers et al., 2001).

Under the umbrella of positive affect are positive emotions, which also play a significant role in coping with traumatic events, and research suggests that they have important connections to post-traumatic growth (Fredrickson et al., 2003; Stanton & Low, 2004). Experiences of positive emotions include both the experience of positive

emotions in the moment, as well as positive trait characteristics such as pre-existing positive affectivity, an example of which is extraversion (Stanton & Low, 2004, p. 78). As already known in research, extraversion is indeed positively associated with post-traumatic growth (Linley & Joseph, 2004). Research has also indicated that positive emotions can help reduce levels of distress following adversity by undoing negative emotions (Fredrickson & Levenson, 1998) and by increasing contact with and support from social relationships (Bonanno & Keltner, 1997). Furthermore, positive emotions act in broadening one's thought-action repertoire, as well as building personal resources (Fredrickson, 1998; Fredrickson, 2001). In this way, it is suggested that positive emotions help build one's capacity for growth following traumatic and adversarial events (Fredrickson et al., 2003). While to date, positive emotions are not included in the post-traumatic growth theory of Tedeschi and Calhoun (2004), Calhoun and Tedeschi (2006) suggest that positive emotions are best to be placed within the category of "person pre-trauma" to describe the person's pre-existing dispositions to positive affective states.

Psychological distress as a variable associated with growth refers to bio-physiological changes within the organism, accompanied by experiences of stress, anxiety, and depression, and it is indicative of impaired mental health (Cuijpers et al., 2009). Research suggests that growth and distress are two separate constructs, not ends of a continuum. Initial stressfulness due to the traumatic event has been found to be positively associated with both growth and pathology (Tedeschi et al., 1998). After the experience of a traumatic event, individuals experience a range of distressing emotions, including arousal, intrusions, avoidance, fear, shame, guilt, etc. The more distressing the

event, the higher the chances of experiencing either pathology or growth. Research (Briere & Elliott, 2000) suggests that the more a traumatic event leads to perceived threat and higher levels of uncontrollability and helplessness, the higher the perceived growth. Such correlation is due to higher disruption and reconstruction of one's assumptive world resulting from more severe traumatic events. In other words, the higher the level of disruption or shattering of one's cognitive schemas and assumptive world, the higher the growth. In contrast, other research suggests that psychological distress is not associated with growth (Frazier et al., 2001; Updegraff et al., 2002). Thus, research is not conclusive on the impact of psychological distress on post-traumatic growth.

Additionally, a person's sense of personal control and coherence have been linked to higher levels of post-traumatic growth. Coherence has been defined as the feeling of confidence that the world is predictable and that things work out as well as reasonably expected (Antonovsky, 1979). Believing that we operate in a predictable world where things do get resolved allows one to feel optimistic and develop the belief that one can influence one's environment, if not fully control it (Xiu et al., 2018). Both these beliefs – personal control and coherence – have been known to enhance psychological growth post-trauma.

Variables associated with the traumatic event itself include event type, event severity, source of violence, and intentionality (Kimberling et al., 2007; Kucharska, 2017). As mentioned earlier, research describes several types of traumatic events with varying degrees of severity (Kessler et al., 1995). Research suggests that traumatic events of sexual nature and emotional abuse are more severe, and consequently, inflict more

damage than other types of traumatic events (Silove et al., 2017; Chung & Breslau, 2008). These events lead to traumas that “cut deeper”, leave deeper scars, and are more likely to lead to post-traumatic stress disorder and other mental health conditions (Kessler et al., 1995). Indeed, the more traumatic an event, the larger its effects on emotions, cognitions, and behaviors (Baum, 1970). Research has established that greater levels of threat are associated with greater levels of post-traumatic growth (Armeli et al., 2001; Fontana & Rosenheck, 1998; Fromm et al., 1996; McMillen et al., 1997). Likewise, greater levels of harm are associated with greater levels of post-traumatic growth (Fontana & Rosenheck, 1998; McMillen & Fisher, 1998; Pargament et al., 1998; Park et al., 1996). However, if the degree of harm or threat surpasses a certain level, then post-traumatic growth declines. In other words, there is a curvilinear relationship between trauma exposure and psychological benefits.

The source of trauma is another characteristic of the traumatic event that warrants consideration. Source of trauma refers to the perpetrator who inflicted harm. The perpetrator could be another human whom the victim does or does not know, as is the case in sexual traumas, physical assaults, combat or accidents, or it could be a superior power, as is the case in natural disasters. The most traumatic events are those caused by another human being, in particular one that the victim knows or with whom the victim has some sort of relationship (Heim et al., 2013). For example, suffering rape in the hands of a family member/ relative or romantic partner is more traumatic than being raped by a stranger. The relational component of these traumas makes the experience

even worse. Thus, the source from which a traumatic event stems plays an important role in the perception of the event as traumatic and the severity of the trauma.

Intentionality refers to the degree to which the event was carried out intentionally to inflict harm, as is the case in sexual assaults or unintentionally, as is the case in natural disasters. Similarly, intentional traumas are more detrimental than unintentional ones. There is research to suggest that rates of post-traumatic stress disorder are higher for intentional traumatic events, such as sexual assault, than non-intentional traumatic events, such as accidents or nature disasters (Kessler et al., 1995). In instances when trauma is inflicted by a person which we know with the intention of causing harm, the harm is even more severe. An example would be experiencing rape from a family member or romantic partner. In addition to the inherent severity, traumas that are intentional and suffered in the hands of people one knows or to which one is related also impact the degree to which the victim's beliefs about the self, people, and world change. Having pain inflicted by a trusted individual "cuts deeper" because the victim feels especially betrayed and powerless (Finkelhor et al., 1986). The victim is likely to start thinking that no one is safe, not even familiar people, and starts seeing the self as worthless. Thus, the intention behind the traumatic event plays a crucial role in the impact that it has on the victim and the consequences afterwards.

Variables related to circumstances include time passed since the traumatic event, number of positive events since the traumatic event, and event centrality. With regards to time passed since the traumatic event, some studies have found that the more time has passed since the event, the higher the levels of growth reported (Cordova et al., 2001;

Evers et al., 2001; Park et al., 1996), while others have not found this association (Fromm et al., 1996; Park et al., 1996). Significant increases over time are especially reported with regards to priorities, spirituality, and life philosophy (Affleck et al., 1987; McMillen et al., 1997), while closeness in relationships tended to decline over time (McMillen et al., 1997). These results may be suggestive that it is not the passage of time that determines levels of growth but rather what the individual does during that time.

The number of positive life events happening parallel to or after the traumatic event also contribute to post-traumatic growth. Individuals who experience positive events while or after having experienced a traumatic event are more likely to later report growth (Park et al., 1996). In other words, individuals who face recent negative events will experience less distress if they also encounter recent positive events. This finding implies that a highly stressful event can foster personal growth when accompanied by the occurrence of multiple positive events. In fact, research has shown that positive life events can buffer the detrimental effects of negative life events (Cohen et al., 1987; Cohen et al., 1984). It could be suggested that the experience of positive events may help in restoring certain positive states of being, such as hope, or character traits, such as optimism.

Furthermore, event centrality plays a crucial role in post-traumatic growth. Event centrality refers to the extent to which an individual feels that a particular event is central to one's identity. According to Bernstein and Rubin (2006, p. 218-219), highly accessible and vivid personal memories help to give structure and meaning to our life narratives and help to anchor and stabilize our conceptions of ourselves. Traumatic events, due to their

strong emotive element and tremendous existential impact, are considered to be pivotal elements of one's life story. In fact, traumatic events seem to "divide" one's life story into two segments: life pre-trauma and life and post-trauma. For example, having experienced rape, an individual is likely to perceive their/his life as comprising two significant chapters: the pre-rape chapter and the post-rape chapter. They may even perceive themselves as differentiating between the "pre-rape" version of themselves and the "post-rape" version of themselves. This magnitude in importance makes traumatic events central to one's identity and life story. Research has reported that traumatic events of higher centrality are associated with higher levels of both PTSD (Berntsen & Rubin, 2006; Bohn, 2010; Rubin et al., 2014) and post-traumatic growth (Allbaugh et al., 2016; Barton et al., 2013; Roland et al., 2014; Schuettler & Boals, 2011; Staugaard et al., 2015) in survivors of different traumatic events. This duality could be explained by the fact that since the traumatic event is central to one's life, the individual will engage in post-traumatic cognitions, such as rumination, cognitive processing, etc., which as stated above, research has linked to higher levels of post-traumatic growth (as well as post-traumatic stress). In simpler terms, the more central a traumatic event is to one's identity and life, the more that individual will engage in thinking about and processing the event, thus increasing one's post-traumatic stress in the present, as well as one's chances of experiencing post-traumatic growth.

In summary, several variables have been suggested through research to facilitate post-traumatic growth. These variables are conceptualized as variables related to the person, the traumatic event, and circumstances. Variables related to the person include

cognitive appraisal, socio-demographic characteristics, personality characteristics, coping ability, religiousness, access to social support, emotional disclosure, culture, cognitive processing, affective state, psychological distress, personal control and sense of coherence. Variables related to the traumatic event include event type, event severity, source of violence, and intentionality. Variables related to circumstances include time passed since the traumatic event, number of positive events since the traumatic event, and event centrality.

Post-Traumatic Growth Controversies

When it comes to the study of post-traumatic growth, several controversies must be acknowledged. They could be grouped into two categories: controversies with the post-traumatic growth phenomenon itself and methodological issues.

Controversies with the post-traumatic growth phenomenon

In terms of controversies with the post-traumatic phenomenon itself, there exists three main issues: (1) whether post-traumatic characterizes real growth or an illusion; (2) whether measures of subjective perceptions of growth are indicative of objective growth, and (3) biases in reports of post-traumatic growth. To explain the duality of post-traumatic growth (real vs illusion), Zoellner and Maercker (2006) proposed the Janus-Face Model, which considers post-traumatic growth under two lights: an illusory construct and a constructive construct. The illusory construct, proposed initially by Tarylor and colleagues (Taylor et al., 2000), is a representation of illusions about growth that an individual may experience in the face of traumatic events. Such illusions serve two functions. First, illusions serve as protective mechanisms, shielding the individual

from experiencing overwhelming levels of distress caused by the traumatic event. Second, illusions help the individual maintain some sort of cognitive and psycho-emotional stability in the face of trauma (Affleck & Tennen, 1996). The constructive construct of post-traumatic growth is a representation of actual perceived growth that results as an outcome of coping successfully with the traumatic event. Such growth is reflected in changes in the five domains suggested by Tedeschi and Calhoun (1996).

There is empirical evidence to support that reports of post-traumatic growth are not an illusion. The literature on post-traumatic growth demonstrates that people who experience growth also experience distress and negative consequences; however, they seem to find the growth aspects more significant (Powell et al., 2003). Also, research indicates that growth is actually under-reported by respondents on quantitative measures (Smith & Cook, 2004). Research has also found that the great majority of people who report post-traumatic growth are not engaging in defensive denial (Dohrenwend et al., 2004). Further support comes from research indicating that self-reported growth tends to be corroborated by others (Park et al., 1996).

With regards to whether measures of subjective perceptions of growth are indicative of objective growth, research has shown that self-reported growth tends to be corroborated by others (Park et al., 1996). In other words, when significant others (i.e., family members, friends, etc.) were asked to rate whether individuals experiencing traumatic events had grown in positive aspects as a result of the traumatic event, significant others rated trauma survivors as having indeed grown as a result of the traumatic experience. The great majority of those who report positive changes from the

struggle with trauma are not engaging in some sort of defensive denial (Dohrenwend et al., 2004). Considering all the above, subjective perceptions of positive growth following trauma do seem to indicate objective growth.

To date, the knowledge of the existence and instances of post-traumatic growth have been made possible through individual reports of such experiences. Indeed, measures of growth post-trauma, including the most unutilized measure, the Post-Traumatic Growth Inventory (PTGI), are based on self-reports. The value of self-reports of post-traumatic growth comes into question when we consider biases to self-reports, specifically, social desirability, cognitive reconstruction, downward comparison, and effects of subsequent events.

Social desirability, as the word implies, reflects a desire to be viewed in a positive light by our social circles. This inclination coupled with the emergence of positive psychology has strengthened even more people's desire to be viewed positively by others. The American culture's "pursuit of happiness" (Diener & Suh, 2000) places an even greater emphasis on the need to appear a "winner". As a result, in an effort to act in accordance with cultural expectations, individuals may report growth even when growth is not evident. Reports of growth, however, show to not be correlated with social desirability (Weinrib et al., 2006; Wild & Paivio, 2003).

Biases in cognitive reconstruction refer to people's inclination to sometimes degrade their life pre-trauma compared to and their life post-trauma. Individuals engage in this degradation of life pre-trauma in order to create a favorable view of their current reality (Wilson & Ross, 2001). For example, individuals who have experienced rape may

view their old selves as weak and as a result more likely to be targets of rape, and their current selves as strong.

Downward social comparison is defined as the tendency to think of oneself as better off than others (Zoellner & Maercker, 2006). Despite being frequently reported in the trauma literature, this type of comparison is either due to an illusion or underestimation of others' strengths (Zoellner & Maercker, 2006). For instance, an individual who has experienced and healed from intimate partner violence may view herself/ himself as stronger and better than another individual who seems to struggle more after having experienced intimate partner violence. Downward social comparison, however, does not constitute post-traumatic growth (Weiss, 2002).

A fourth bias stems from the effects of subsequent events on the individual. In other words, the events that one experiences post-trauma and their impact on the individual may also have an impact on one's experience of post-traumatic growth. Research has demonstrated that the stability of growth is indeed affected by subsequent events, interactions among events and between events and the individual, and ways in which the newly developed traumas have been allowed to be integrated into new experiences post-trauma (Tedeschi, 1999). To strengthen this assertion further, research has also demonstrated that the stability of post-traumatic growth is dependent on personality factors, the ability to reinterpret one's experience positively, and the impact of proximal and distal socio-cultural factors (Tedeschi, 1999).

Methodological Issues

Methodological issues concerning post-traumatic growth revolve around three main themes: (1) overreliance on quantitative measures, (2) lack of longitudinal studies, and (3) lack of studies with pre-post designs and control groups.

Currently, there is an overreliance on self-reports that quantitatively measure only positive changes following a traumatic event (e.g., PTGI). While there are other measures that measure both positive and negative changes post-trauma – e.g., The Changes in Outlook Questionnaire (Joseph et al., 1993), and the Revised Stress-Related Growth (Armeli et al., 2001), these measures are not usually utilized. Tedeschi and Calhoun (2004) emphasize that it is important to investigate growth using quantitative approaches based on positivist science, as they provide descriptions that characterize the process, predictors, and consequences of the positive changes. Important findings about the process, predictors, and consequences of positive changes have been demonstrated in the works of Cadell, Regehr, and Hemsworth (2003) and Frazier and colleagues (2004). The need for qualitative methods becomes evident when considering the richness in data and description of the phenomenon that they provide, which allow for deeper understanding of the phenomenon. Ideally, a combination of qualitative and quantitative design would be most beneficial.

Second, there is a lack of longitudinal studies on post-traumatic growth, therefore the trajectory and the prediction of post-traumatic growth overtime is hard to determine. The utilization of longitudinal studies becomes especially important with regards to identifying antecedents and predictors of growth (Calhoun & Tedeschi, 2006). Third,

there is a lack of studies with pre-post designs and control groups. Lack of data on pre-traumatic events makes it difficult to validate post-traumatic growth. To combat this shortcoming, some researchers have used data from third party reports, which have reliably validated post-traumatic growth (Park et al, 1996; Weiss, 2002).

In conclusion, with regards to methodological issues, there is a need for more rigorous and well-validated measures, utilization of a variety of research methods, conducting longitudinal studies and studies with pre-post designs and control groups.

Traumatic Experiences and Gender Differences

The experience of traumatic events is a universal and non-discriminatory phenomenon. In fact, between 60-61% of men and 50-51% of women report having experienced at least one traumatic event in their lifetime (Kessler et al., 1995).

Nonetheless, genders are not affected equally – an observation seen cross-culturally. In most societies, exposure to traumatic events is higher in men than women (Breslau et al., 1999; Kessler et al., 1995; Morris et al., 2005). The most common traumatic events to which men are exposed include accidents, physical assault, combat or witnessing death and injury. Women, on the other hand, are more prone to experience emotional abuse, rape, sexual assault, and sexual abuse, especially as children.

Paradoxically, despite their lower rates of exposure to traumatic events compared to men, women are more profoundly impacted by traumatic events than men. To illustrate, women manifest higher levels of negative psychological effects post-trauma (Platt, 2020; Stevens, 2020; Levy et al., 2021); they feel more worried and frustrated after traumatic events (Stevens, 2020; Platt, 2020); they are more likely to develop anxiety

disorders, mood disorders, and post-traumatic stress disorder (Breslau et al., 1999; Tolin & Foa, 2006); they suffer greater severity of post-traumatic stress disorder (Tolin & Foa, 2006), with substantially longer duration, approximately five years as compared to two years in men (Kessler et al., 1995). Specifically, studies have shown that women's risk of developing post-traumatic growth after trauma exposure is 20.4% compared to 8.1% for men (Kessler et al., 1995).

About 10% to 12% in women compared with 5% to 6% in men do develop post-traumatic stress disorder (Kessler et al., 2017; Yazawa et al., 2022; Breslau et al., 2004). Even within categories of traumatic events more often experienced by men (e.g., non-sexual assaults, physical assaults, accidents, etc.), women are four times more likely than men to suffer negative consequences, including post-traumatic stress disorder (Stein et al., 2000; Tolin & Foa, 2006). Moreover, even within the same traumatic event type, women are more likely to report higher severity and meet criteria for post-traumatic stress disorder and other mental and health conditions (Tolin & Foa, 2006; Kessler et al., 1995). In general, women are more profoundly impacted by traumatic events than men.

Upon initial examination, it may seem perplexing that men have a higher likelihood of experiencing traumatic events than women, yet the impact of traumatic events on women tends to be more pronounced than on men. This observation, in conjunction with the aforementioned research findings, highlights the significance of taking gender into account when discussing trauma, recovery from trauma, and post-traumatic growth. Indeed, research suggests that gender is a key predictor of individual differences in both responses to traumatic events (Fox et al., 2009) and growth following

trauma (Tedeschi & Calhoun, 1996). Several explanations have been proposed to describe and explain gender differences in these contexts. The following sections will provide a summary of the factors contributing to gender disparities in (1) experiences of traumatic events, and (2) post-traumatic growth.

Factors Contributing to Gender Differences in Experiences of Traumatic Events

A constellation of biological, psychological, socio-cultural, and event-specific factors contribute to gender differences in the experiences and impact of traumatic events. These factors are listed and explained in the paragraphs that follow.

Characteristics of the traumatic event

Research indicates that the type of traumatic event accounts in part for gender differences in response to traumatic events. Features of the traumatic event of importance to consider include event type, event severity, source of violence, and intentionality (Kimberling et al., 2007; Kucharska, 2017; Olff, 2017).

Men and women are exposed to different types of traumatic events with varying degrees of severity. Women experience events that lead to more severe traumas and that are correlated with the highest probability of developing post-traumatic stress disorder and other trauma-related conditions (Breslau et al 1999; Kessler et al., 1995). Categories of such events include traumatic events of sexual nature (e.g., sexual assault, sexual abuse), and traumatic experiences related to emotional abuse. Research has found that women experience significantly higher rates of rape and other sexual assaults than men (Bresslau et al., 1998, 1999; Kessler et al., 2005). Similarly, research has found that women experience significantly higher rates of emotional abuse than men (Coker et al.,

2002). Males, on the other hand, are more likely to experience non-sexual traumas, such as combat, physical assault, and accidents (Tolin & Foa, 2006; Norris et al., 2002). As evidenced from the research cited above, the types of traumatic events to which women and men are exposed vary across genders, with women experiencing more traumatic events that are correlated with the development of post-traumatic stress disorder and other trauma-related conditions.

Tied to trauma type is trauma severity. Research suggests that traumatic events of sexual nature and emotional abuse are more severe, and consequently, inflict more damage than other types of traumatic events (Silove et al., 2017; Chung & Breslau, 2008). These events lead to traumas that “cut deeper”, leave deeper scars, and are more likely to lead to post-traumatic stress disorder and other mental health conditions (Kessler et al., 1995). Indeed, the more traumatic an event, the larger its effects on emotions, cognitions, and behaviors (Baum, 1970). In the case of sexual trauma, research has found that it is very damaging for both genders. For traumatic events of sexual nature, such as child sexual abuse and adult sexual assault, some studies show no significant gender differences in post-traumatic stress disorder (Tolin & Foa, 2006). Other studies do show a significant gender difference – over 50% of the cases of post-traumatic stress disorder among women have been attributed to assaultive violence and sexual assault (Norris et al., 2002), as compared with 15% of cases for men (Kessler et al., 1995), with rape being the most highly related to post-traumatic stress disorder for women.

Another type of event high in severity is emotional abuse. Emotional abuse encompasses various forms such as verbal assault, dominance, control, isolation, ridicule

or the use of intimate knowledge for degradation (Follingstad et al., 2005). Its primary focus is on damaging the emotional and psychological well-being of the victim, and it is frequently a precursor to physical abuse and other types of abuse. Emotional abuse can be exceptionally detrimental as it can change brain configuration, impacting emotional and physical health, as well as social and cognitive development (Heim et al., 2013). Women experience higher levels of emotional abuse compared to men (Coker et al., 2002) and consequently higher levels of trauma-related diseases (e.g. PTSD, anxiety, depression, etc.) (Loring, 1994; Van Houdenhove et al., 2001). Some studies have found emotional abuse to be associated with higher rates of post-traumatic stress disorder than those of other forms of abuse (Hart et al., 1996). To summarize, events including sexual abuse and emotional abuse rank higher in severity when compared to other traumatic events for both genders and consequently, have a higher probability of inflicting profound damage to the individual.

The source of trauma is another characteristic of the traumatic event that warrants consideration. Source of trauma refers to the perpetrator who inflicted harm. The perpetrator could be another human whom the victim does or does not know, as is the case in sexual traumas, physical assaults, combat or accidents, or it could be a superior power, as is the case in natural disasters. The most traumatic events are those caused by another human being, in particular one that the victim knows or with whom the victim has some sort of interpersonal relationship (Heim et al., 2013). For example, suffering rape in the hands of a family member/ relative or romantic partner is more traumatic than being raped by a stranger. Research shows that women, when compared to men, are

indeed more likely to be assaulted by someone they know and with whom they may have an ongoing interpersonal relationship, also known as interpersonal violence (Tolin & Foa, 2002, p. 76–97). The relational component of these traumas makes the experience even worse. Given that relationships may be of particular importance to women and a critical source of women's sense of self (Chodorow, 1978; Miller, 1986), women may be even more prone to post-trauma disorders following assaultive violence. In contrast to women's experiences, men experience higher rates of traumatic events that are caused by chance (e.g., accidents) or known enemies (e.g., combat). Clearly, research shows the sources of traumatic events experienced by women and men differ, with women experiencing traumatic events originating from known others and men experiencing traumatic events originating from chance or known enemies.

Intentionality refers to the degree to which the event was carried out intentionally to inflict harm, as is the case in sexual assaults or unintentionally, as is the case in natural disasters. Similarly, intentional traumas are more detrimental than unintentional ones. There is research to suggest that sex differences in rates of post-traumatic stress disorder are higher for intentional traumatic events, such as sexual assault, than non-intentional traumatic events, such as accidents or nature disasters (Kessler et al., 1995). Women experience significantly higher rates of rape and other sexual assault when compared to men (Bresslau et al., 1999). Men, on the other hand, are more likely to experience traumatic events that are either unintentional/ happening by chance (e.g., accidents) or intentional but caused by “known enemies” (e.g., war). In instances when trauma is inflicted by a person we know with the intention of causing harm, the harm is even more

severe. An example would be experiencing rape from a family member or romantic partner. In addition to the inherent severity, traumas that are intentional and suffered in the hands of people one knows or to which one is related also impact the degree to which the victim's beliefs about the self, people, and the world change. Having pain inflicted by a trusted individual "cuts deeper " because the victim feels especially betrayed and powerless (Finkelhor et al., 1986). The victim is likely to start thinking that no one is safe, not even familiar people, and starts seeing the self as worthless. Thus, the intention behind the traumatic event plays a crucial role in the impact that it has on the victim and the consequences afterwards.

To summarize, characteristics of a traumatic event, including event type, event severity, source of violence, and intentionality, account in part for gender differences in response to traumatic events. Specifically, traumatic events of higher severity, in particular sexual assault and abuse and emotional abuse, can result in more profound and lasting damage. Women experience these types of events at higher rates compared to males, resulting in greater suffering and adverse impacts on their well-being.

Age

The age when an individual is exposed to a traumatic event is a possible explanatory factor for gender differences. Exposure to traumatic events at a younger age, especially during early childhood, is damaging to both genders as that trauma experienced interferes with and influences brain development (Teicher et al., 2004), and consequently, the physical, emotional, cognitive, and social development (Heim et al. 2013). Girls may be particularly vulnerable to the negative impact of childhood sexual

abuse as they are more likely than men to experience traumas of a sexual nature during early childhood (Teicher et al., 2004). Research indicates that when compared to boys, girls exposed to childhood sexual abuse have a higher likelihood of developing post-traumatic stress disorder (Walker et al., 2004). Additional research indicates that the severity of post-traumatic stress disorder is even higher after having experienced sexual abuse during childhood as compared with exposure after age of 15 (Breslau et al., 1998; Kessler et al., 1995).

Cognitive Appraisal

Several trauma theorists (Ehlers & Steil, 1995; Foa et al., 1989) have advocated that cognitive factors play a critical role in trauma response. Cognitive models of trauma (Janoff- Bulman, 1985; Foa et al., 1989) consider cognitive appraisal of equal importance in trauma response and the development and maintenance of trauma-related disorders as trauma severity and individual variations pre-trauma. The concept of cognitive appraisal is described under the appraisal theory (Lazarus, 1966). The appraisal theory is a psychological framework developed to understand how individuals evaluate and interpret events. The theory proposes that people evaluate events based on the events' perceived significance to their well-being. Specifically, cognitive appraisal refers to the individual's sequence of thinking patterns that make up her/his subjective perception, evaluation, and interpretation of events, which ultimately influence the extent to which the situation is perceived as stressful or traumatic.

Cognitive appraisal is a process of assessing (a) whether an event or situation poses a threat to well-being, (b) whether there are adequate personal resources to cope

with the demands of the event, and (c) whether the chosen strategy for dealing with the event is effective (Lazarus, 1991). Cognitive appraisals exist in two basic forms of appraisal: primary and secondary. Primary appraisal is concerned with the relevance of the event to the individual's well-being, whereas secondary appraisal is concerned with coping. Specifically, stressors can be appraised primarily as: (1) irrelevant, indicating that the situation has no effect on the individual, (2) benign positive, indicating that the situation is viewed as positive, or (3) stressful (Lazarus & Folkman, 1984). When a stressor is evaluated as stressful, it can undergo a secondary appraisal, which involves categorizing it as (1) harm/loss, resulting in damage to self or social esteem, (2) threat, indicating a perceived risk of pain, or (3) challenge, presenting an opportunity for gain and growth (Lazarus & Folkman, 1984).

Cognitive appraisal has been shown to play an important role in determining the impact of the stress response (Harvey et al., 2010). Usually, it manifests as negative, positive or neutral. Appraising an event as neutral means perceiving it as irrelevant, neither threatening nor beneficial and not triggering any emotional response. Perceiving an event as negative refers to creating a negative perception, interpretation, and evaluation of the traumatic event. By virtue of including greater perceptions of threat or loss of control, a negative cognitive appraisal may contribute to post-traumatic stress disorder and other trauma-related psychopathology because it steers coping efforts away from problem-solving and towards excessive emotional regulation (Maes et al., 2001). Perceiving an event as positive, on the other hand, refers to creating a positive perception, interpretation, and evaluation of an event. Reductions in perceptions of threat dampen the

physiological stress response, thus decreasing the risk of the development of post-traumatic stress disorder and other trauma-related conditions (Maes et al., 2001). Furthermore, perceiving traumatic events in a positive light has been associated with quicker habituation of cortisol responses to subsequent stressors, suggesting enhanced adaptability in the functioning of the hypothalamic-pituitary-adrenal (HPA) axis (Maes et al., 2001). Thus, appraising traumatic events positively may serve as a protective factor against the development of post-traumatic stress disorder and trauma-related disorders (Epel et al., 1998). Research points out that subjective cognitive appraisals of potentially traumatic events are far better predictors of post-traumatic stress disorder and other trauma-related disorders than objective facts (Ozer et al., 2003). Moreover, subjective appraisals have been found to explain the variability to risks of development of trauma-related conditions. The significance of subjective appraisals becomes evident when addressing questions about why some individuals may develop post-traumatic stress disorder following non-catastrophic events like divorce, while others may not experience trauma-related disorders despite enduring severe traumas like kidnapping or torture (McNally, 2003). By having a direct influence on how an individual perceives an event, subjective cognitive appraisal plays an important role in that individual's response to the event, as well as the likelihood of the occurrence of trauma-related disorders.

Cognitive appraisal is heavily influenced by gender. The literature on trauma suggests that the higher risk for stress-related disorders in women may originate from the subjective interpretation of events rather than the objective exposure to traumatic events (Norris et al., 2002). Other studies corroborate these findings (Anderson & Manuel, 1994;

Lerner et al., 2003; Delahanty et al., 1997). Results from these studies suggest that gender influences the subjective perception, interpretation, and evaluation of events across a variety of potentially traumatic events.

Additional research has identified gender differences in the cognitive appraisal of traumatic events, particularly in the domains of perceived threat, perceived controllability, and perceived coping ability (Levine, 2000). Empirical research has consistently shown that women are more likely than men to report threat and loss appraisals (Mak et al., 2004; Ptacek et al, 1992; Cole & Sapp, 1988). In other words, women tend to perceive situations as more threatening, dangerous or risky, and as involving more loss. These types of appraisals have been associated with higher rates of psychopathology in women, including affective disorders (van Nieuwenhuizen & de Rideer, 1994). It has further been proposed that gender differences in threat appraisal may contribute to different responses of the hypothalamic-pituitary-adrenal (HPA) axis to psychosocial stressors between men and women, and consequently, varied risks for the development of post-traumatic stress disorder and other trauma-related disorders (Rasmusson & Friedman, 2002).

With regards to control appraisals, studies confirm that women and men show differences in perceived controllability, which is a significant predictor of post-traumatic stress disorder and trauma-related disorders (Dickerson & Kemeny, 2004). Specifically, men tend to perceive higher levels of control than women (Mak et al., 2004). Perceiving higher levels of control is associated with lower levels of blaming others and a reduced risk of developing post-traumatic stress disorder (Mak et al., 2004). In contrast, women

report higher levels of perceived distress and lack of available coping strategies (Eisler & Skidmore, 1987).

Research has suggested that gender differences in stress appraisal – with females being more sensitive than males – may be impacted by differences in how the male and female brain engages during the evaluation of threat cues (Kemp et al., 2004). It is possible that women and men react differently to traumatizing events because of differences in their cerebral hemispheres, especially with regards to their development, specialization, and functionality. Gender-related differences in brain structures and cognitive processes could potentially be implicated in the mechanisms underlying stress sensitivity and psychopathology observed in women and men.

To summarize, women are reported to be significantly more likely than men to experience negative cognitive appraisals of events – specifically, perceive a situation as threatening, rate events as more stressful, endorse more loss of personal control, report higher levels of perceived distress and lack of available coping strategies compared to males. As a result, they are more likely to experience both acute psychological and biological reactions to trauma, such as intense fear, panic, anxiety, helplessness, intrusive thoughts, helplessness, and horror (Olf et al., 2007) as well as higher risks for the development of post-traumatic stress disorder and other trauma-related disorders (Rasmussen & Friedman, 2002).

Coping

An individual's coping style influences his or her reactions to traumatic events. Coping is defined as a process of “ongoing efforts in thought and action to manage

specific demands appraised as overwhelming” (Lazarus, 1993, p.8). In simpler terms, coping refers to the ways of thinking and acting in which an individual engages in attempts to meet the demands placed upon him/her by a stressful situation. There are two main types of coping styles: problem-focused coping and emotion-focused coping. Problem-focused coping treats the event or situation as a problem to be solved and describes coping attempts characterized by intentional efforts to solve a problem or alter the stressor (Jeavons et al, 2000). Examples of problem-focused cognitive and behavioral strategies include planning, reaching out for instrumental support, and religion (Schnider et al., 2007; Carver et al., 1989). Problem-focused coping is associated with better adjustment and health outcomes (Herman & Tetrick, 2009).

Emotional-coping refers to attempts to control the emotional response to an event in order to reduce stress or to change one’s interpretation of the event (Jeavons et al., 2000). It is particularly used when the individual believes that she/he cannot change the situation (Galvin & Godfrey, 2001). Emotional-coping strategies can be divided into active emotional-coping and avoidant emotional-coping (Hodes et al., 2008; Schnider et al., 2007). Examples of active emotional coping include positive reframing, venting, acceptance, humor, and seeking emotional support. Examples of avoidant emotional-coping include self-blame, denial, self-distraction, disengagement, and substance use (Schnider et al., 2007; Carver et al., 1989). Emotion-focused coping is viewed as a maladaptive form of coping, and it is associated with impaired health outcomes, unhealthy lifestyle practices such as smoking, lack of exercise, drinking, etc. (Baker & Berenbaum., 2007; Herman & Tetrick, 2009). Generally, an individual has a preferred or

automatic pattern of coping, however, situational factors can impact such preferences. If, following a traumatic event, the individual thinks that something could be done to change the situation, she/he will most likely use problem-focused coping; however, if the individual thinks that the situation cannot be changed, she/he will most likely resort to emotion-focused coping.

Consistent gender differences have been reported in the types of coping that men and women use (Watson & Sinha, 1998; Gavranidou & Rosner, 2003). For both genders, coping strategies such as disengagement, social isolation, self-destructive behavior, denial, rumination, and blaming oneself or others are maladaptive (Norris et al., 2002). Research further suggests that women use less effective combinations of coping strategies than men (Tamres et al., 2002). Specifically, women tend to use emotion-focused coping more often than men, whereas men tend to use problem-focused coping more often than women (Endler & Parker, 1990; Folkman & Lazarus, 1980). These findings have implications when considered under the lens of higher prevalence among females for trauma-related psychopathological conditions. Research has found emotion-focused coping to be less effective in reducing stress than problem-focused coping (Carver et al., 1989). Additionally, it has been found that emotion-focused coping increases vulnerability to future trauma-related symptomatology (Jeavons et al., 2000). These findings have been confirmed by other studies (Epstein, 1993; Solomon et al., 1988).

Furthermore, women tend to rely on using avoidant emotional-coping strategies (Matud, 2004), such as denial, distraction, minimization, emotional suppression,

daydreaming, blame shifting, social withdrawal, isolation, etc., which have been shown to contribute to the development of symptoms and are predictive of the severity of post-traumatic stress disorder (Bryant et al., 2000). A connection has also been established between avoidant emotional-coping strategies and peritraumatic dissociation (Koopman et al., 2004), which has been associated with increased rates of post-traumatic stress symptoms and a higher likelihood of receiving a diagnosis of post-traumatic stress disorder (Shalev et al., 1996). Research suggests that avoidant emotional-coping may disrupt the typical pattern of physiological reactivity and neuroendocrine response in the body (Olf et al., 2005). For example, instead of engaging in active problem-solving, individuals using avoidant emotional-coping may engage in behaviors such as denial, suppression, or distraction to avoid facing the stressor. This can result in delayed or incomplete processing of the traumatic event, and may contribute to heightened physiological arousal and dysregulated emotional responses, both of which can potentially contribute to the development or exacerbation of symptoms associated with trauma-related disorders.

As mentioned earlier, part of active emotional-focused coping is social connectedness or the tendency to seek social support in efforts to sustain oneself during stressful situations. Research indicates that women are more likely than men to seek social support (Swickert et al., 2004). This finding is meaningful in the trauma context because social connectedness has been linked to both lesser trauma symptomatology (Swickert et al., 2004) and higher levels of perceived benefits (Swickert & Hittner 2009).

To summarize, an individual's coping style influences her/his reactions to and experience of a traumatic event and its consequences. Of the two coping styles, men use more problem-focused coping, which is associated with better adjustment post-trauma, whereas women rely heavily on emotional-focused coping, including both active emotional-coping and avoidant emotional-coping. While active emotional-coping is associated with better adjustment post-trauma, taken as a whole, emotion-focused coping is associated with poorer outcomes. Paradoxically, some studies have found that emotion-focused coping is positively associated with post-traumatic growth (Linley & Joseph, 2004).

Acute Reactions to Trauma

Acute reactions to trauma are reactions that arise immediately after experiencing a traumatic event. They involve both bio-physiological and psychological reactions such as dissociation, fear, emotional distress, and more. Acute reactions to trauma are observed occurring in two patterns: hyperarousal or peritraumatic dissociation. Hyperarousal is characterized by heightened activation of the sympathetic nervous system, whereas peritraumatic dissociation is characterized by a state of limited or distorted awareness during and immediately following a traumatic event (Bryant & Harvey, 2003; Grieger et al., 2003; Perry et al., 1995). Both age and gender influence an individuals' response patterns to threat. In both males and females, it has been observed that the younger the individual, the more likely he/she will use disassociation over hyperarousal (Perry et al., 1995).

With regards to the experience of hyperarousal and dissociation between genders, research indicates that there are gender-based variations in acute responses to trauma, with women reporting higher levels of both hyperarousal and peritraumatic dissociation following a traumatic event. Studies have shown that women tend to exhibit higher physiological arousal after experiencing a traumatic event, as evidenced by increased activation of the sympathetic nervous system, including elevated heart rate, blood pressure, pupil dilation, and heightened production of stress hormones such as adrenaline and cortisol (Delahanty et al., 2000). Additionally, studies suggest that women are more likely than men to report acute emotional reactions (Brunet et al., 2001), including intense fear, helplessness, horror, intrusive thoughts, avoidance, panic, and anxiety (Freedman et al., 2002; Bryant & Harvey, 2003; Holbrook & Hout, 2004). Overall, research suggests that women tend to experience higher levels of hyperarousal following a traumatic event.

Furthermore, research indicates that women may be more prone than men to report peritraumatic dissociation. It has been suggested that women have a more sensitized dissociative system and are more likely to exhibit symptoms such as anxiety, withdrawal, physical pain, and disorders like anxiety disorders, depression, and dissociative disorders (Perry et al., 1995). Men, on the other hand, have a more sensitized physiological hyperarousal system (resembling the “fight or flight” response) which makes them more prone to exhibit poor impulse control, hypervigilance, and aggression (Perry et al., 1995; Perry & Pollard, 1998). Some research has suggested that peritraumatic psychological responses, rather than pre-trauma personal characteristics,

are the strongest predictors of post-traumatic outcomes (Ozer et al., 2003). Victims who experience immediate dissociative responses to various types of trauma have been shown to be at a greater risk for developing post-traumatic stress disorder (Birmes et al., 2001; Fullerton et al., 2001; Bryant & Harvey 2003). For instance, research suggests that peritraumatic dissociation has been reported to explain gender differences in post-traumatic stress disorder, whereas injury, previous traumatization, major depression, and other anxiety disorders have not (Fullerton et al., 2001). In some studies, women reporting dissociation were over seven times more likely to develop post-traumatic stress disorder than men (Fullerton et al., 2001). Overall, research suggests that women tend to experience higher levels of peritraumatic dissociation following a traumatic event.

To summarize, acute reactions to trauma – hyperarousal and peritraumatic dissociation – influence an individual’s experience of and response to the traumatic event. There are gender-based variations in acute reactions to trauma, with women reporting higher levels of both hyperarousal (Delahanty et al., 2000) and peritraumatic dissociation (Bryant & Harvey, 2003; Grieger et al., 2003) following a traumatic event than men. Such reactions have implications in post-traumatic outcomes (Ozer et al., 2003) and have been shown to be associated with a greater risk for developing post-traumatic stress disorder and trauma-related psychopathology (Birmes et al., 2001; Fullerton et al., 2001; Bryant & Harvey 2003).

Neuro-Biological and Hormonal Differences

Based on biological theories, there are distinctions in brain structure and function, reproductive processes, and other genetic factors between males and females (Kornstein,

1997). Researchers believe that these differences are also reflected in and contribute to differences in responses to traumatic events. Especially when considering higher rates of exposure to traumatic events among men (Breslau, 2001; Norris et al., 2002), yet higher prevalence of trauma-related disorders among women (Breslau et al., 1999; Kessler et al., 1995; Platt, 2020; Stevens, 2020), neuro-biologically based explanations become even more attractive. In the trauma literature, these explanations are often referred to as “biologically-based feminine vulnerability” (Breslau et al., 1999; Breslau et al., 1997; Castanho et al., 2014). While a comprehensive review of all the neuro-biological influencers is outside of the scope of this paper, of importance to consider, given their involvement and influences in responses to trauma, are brain structure and function, the hypothalamic-pituitary-adrenal (APA) axis and the sympathetic-adrenal-medullary (SAM) axis, sex hormones, and other hormones, specifically cortisol and oxytocin.

Brain. Numerous areas of the brain, such as the amygdala, hippocampus, and prefrontal cortex, are implicated in the reaction to stress and trauma (Crews et al., 2007). There are notable distinctions in both structure and function of these brain regions between males and females in relation to stress and trauma responses (Cahill, 2006). For example, adolescent boys tend to exhibit a more pronounced increase in amygdala volume in response to stress and trauma, whereas girls tend to show a greater increase in hippocampal volume. (Giedd et al., 1997). These brain parts are also very sensitive to hormones released during stress, especially glucocorticoids (McEwen, 2005). Glucocorticoids modify the shape of these brain areas (Sapolsky, 2003) by altering the synaptic function and plasticity of the brain (Sapolsky 2003). As noted earlier, girls are

more likely to experience traumatic events at a younger age than boys. This group of girls enters later stages of development at a disadvantage because childhood traumas have influenced and altered the development of their brain structure and function. Moreover, experiencing traumas early in life increases their risk of development of future psychiatric disorders and chances of experiencing additional traumatic events (Heim et al., 2002).

HPA & SAM axis. As described and explained in prior sections, both the hypothalamic-pituitary-adrenal (HPA) and sympathetic-adrenal-medullary (SAM) axis are integral in the body's response to stress. A slower response to stress is regulated by the HPA axis, while a faster response is regulated by the SAM axis. Research has documented sex-based differences in reactivity to psychological stress in relation to the activation of the HPA and SAM axis. Research indicates that under conditions of stress, adult women, especially between puberty and menopause, usually show lower HPA axis responses than men of the same age (Kemp et al., 2004; Kudielka & Kirschbaum, 2005). Low cortisol levels are associated with specific dimensions of post-traumatic stress symptomatology, such as emotional numbing (Hawk et al., 2000). Moreover, the sensitivity of the HPA axis in women makes them more susceptible to develop mood and anxiety disorders (Faravelli et al., 2012)). This is further supported by research showing that women are diagnosed with mental disorders more often than men; gender differences apply to both the types and patterns of psychiatric problems (Eaton et al., 2012; Kessler et al., 2005). It is important to note that lower HPA axis responses to stress in women compared to men do not necessarily mean that women are less affected by stress. The

impact of stress on health and well-being is complex and multifactorial, and other physiological and psychological factors beyond the HPA axis also play a role. Additionally, the HPA axis is just one component of the body's stress response system, and other stress pathways, such as the sympathetic-adrenal-medullary (SAM) axis, are also involved in the stress response.

Males, on the other hand, tend to exhibit a more sensitive SAM axis system (Olff, 2017), which is responsible for the rapid "fight or flight" response to stressors. In terms of behavioral manifestations, high activation of the SAM axis tends to encourage externalizing aggressive behavior, resulting in men showing more aggressive and antisocial disorders than women (Olff, 2017).

Oxytocin. Gender differences in stress response and coping mechanisms are indicative of the distinct ways that females and males have evolved in order to manage stress. In stressful situations, females commonly display a tend-and-befriend response, which is regulated by the hormone oxytocin and impacted by female reproductive hormones such as estrogen, along with endogenous opioids (Taylor et al., 2000). Tending refers to nurturing actions aimed at protecting oneself and one's offspring, promoting safety and reducing distress. Befriending involves building and maintaining social connections that can provide support. The tend-and-befriend response suggests that women tend to respond to stress by displaying nurturing behaviors to protect themselves and their offspring(s) from harm, while also seeking social support from groups to mitigate risk. The tend and befriend response is mediated by oxytocin. Elevated levels of oxytocin have been linked to reduced stress and anxiety, increased positive social

interactions and parental care (Taylor et al., 2000), increased positive emotions (Polk et al., 2005), and reduced conditioned avoidance behavior (Uvnäs -Moberg, 1998). Reduced oxytocin levels, on the other hand, have been associated with sad emotions and social isolation (Taylor et al., 2000). The tend-and-befriend response differs from the fight-or-flight response commonly seen in men. (Taylor et al., 2000). In contrast, the “fight-or-flight” response is characterized by activation of the sympathetic nervous system, mobilizing the body to defend and take action.

Exposure to traumatic events, especially in early childhood, can disrupt the normal development of the oxytocin system, leading to difficulties with emotion regulation (Wismer-Fries et al., 2005). As a result, individuals who have experienced early childhood adversity may have lower oxytocin levels throughout their lives compared to those who have not experienced such trauma. This is particularly of importance to women, who are more likely than men to experience traumatic events in early childhood. Impaired development of the oxytocin systems may also be a suggestive factor in women experiencing higher mental health disorders than men (McEwen, 1999).

Sex hormones. Sex hormones play a role in modulating the activity of body systems involved in the stress response (Muñoz-Reyes et al., 2020; Olf ,2017; Christiansen & Berke, 2020). Compared to men, women have greater variations in neuroendocrine response to stress because of their reproductive cycle (Vasterling & Brewin, 2005). Female sex hormones have been regarded as significant factors contributing to the increased vulnerability of females to psychopathology (McEwen, 1999). The interconnection between the female reproductive system and the

hypothalamic-pituitary-adrenal (HPA) axis is multifaceted. Female sex hormones modulate the HPA axis response in intricate ways (Patchev & Almeida 1998; Handa et al., 1994). Estrogen has been found to enhance the HPA axis response to stress, while androgens have been shown to inhibit HPA axis responses (Da Silva, 1999). Activation of the HPA axis results in heightened sensitivity and responsiveness to stressors, leading to increased release of stress hormones, such as cortisol. Inhibition of the HPA axis response reduces the release of stress hormones. Prolonged elevation of estrogen, such as during chronic stress, further exacerbates HPA axis responses, increasing the likelihood of developing trauma-related disorders, including post-traumatic stress disorder (Vasterling & Brewin, 2005).

In summary, gender differences in response to trauma are affected by neuro-biological and hormonal differences between the genders. Of importance in the trauma context are gender differences in the brain structure and function, the hypothalamic-pituitary-adrenal (APA) axis and the sympathetic-adrenal-medullary (SAM) axis, sex hormones, and other hormones, specifically cortisol and oxytocin. All these elements play a significant role in the body's response to trauma.

Cultural Norms and Socialization

Socialization and cultural norms play a role in shaping how males and females respond to trauma. This can be seen in how societal expectations and gender roles shape how males and females express their emotions, seek help or disclose their traumatic experiences, ultimately affecting their coping strategies. As mentioned above, research has shown that females tend to use emotion-focused coping styles (Endler & Parker,

1990; Folkman & Lazarus, 1980) or avoidance-focused coping styles (Matud, 2004). These findings align with the socialization hypothesis (Miller & Kirsch, 1987), according to which females are socialized to adopt more avoidant and emotion-focused coping behaviors, while males are socialized to adopt more active coping strategies. Several studies linking gender role characteristics to post-traumatic stress disorder have supported this argument (Norris et al., 2001). These studies suggest that gender role expectations and cultural influences may be associated with the differences in coping styles and post-traumatic stress disorder risk between females and males.

Tightly connected to socialization is culture, which has been shown to play a role in gender differences responses to trauma. There is research (Norris et al., 2001) to suggest that women emerged in patriarchal cultures experience higher rates of post-trauma psychological disorders. Other research, however, has found no gender differences when adjusting for other risk factors. Specifically, research by Valentine and colleagues (Valentine et al., 2019) has found no gender differences in post-traumatic stress disorder symptomatology among Latinas and Asians, both of which are patriarchal cultures, but significantly more post-traumatic stress disorder symptoms in women than men from all other ethnic groups. While results are mixed, they do highlight the influence of culture on gender differences in responses to traumatic events.

In summary, both the cultural milieu and socialization processes play a significant role in shaping how different genders respond to traumatic events. Societal expectations and gender norms influence how men and women perceive and cope with trauma.

History of Prior Traumatization

Research suggests that a history of previous exposure to traumatic events, especially during childhood (Halligan & Yehuda, 2000), increases the risk of developing post-traumatic stress disorder and other trauma-related disorders (Burges & Holmstrom, 1987; Rothbaum et al., 1992). Researchers suggest that going through traumatic events seems to create a priming effect, influencing how individuals perceive, process, and respond to subsequent traumatic events. As a result, these individuals may view themselves as less competent, perceive the world as less safe, and see people as malevolent. These cognitive schemas act as filters through which all new experiences are processed, and the occurrence of additional traumas may further reinforce these schemas. In general, individuals who have experienced trauma in the past may be more susceptible to increased reactions to current traumas.

Research further suggests that women's higher rates of post-traumatic stress disorder may be associated with a greater number of traumatic events during childhood (Breslau et al., 1997; Galvin & Godfrey, 2001) or throughout their lifetime (Stein et al., 2000; Breslau et al., 1997). Other studies, however, have suggested that prior traumatization may not be a contributing factor to gender differences in post-traumatic stress disorder rates (Breslau et al., 1999; Bromet et al., 1998). While results are mixed, they are still indicative that prior traumatization may be worthy of consideration with regards to gender differences in trauma responses.

Pre-Trauma Schemas

According to the schema theory, an individual possesses a system of beliefs and attitudes that impact her/his perceptions, interpretations, and memories (Beck et al., 1995). Schemas are created based on and influenced by life experiences. According to one's life experiences, an individual alters schemas by (1) assimilating new information to fit pre-existing schemas or (2) accommodating schemas to fit new information. The schemas that the individual held prior to the trauma will influence how he/she perceives, experiences, reacts to, and recovers from the trauma. Individuals who prior to the trauma viewed themselves as worthy and invulnerable, people as benevolent and the world as just are at higher risk for experiencing detrimental effects post-trauma because the traumatic experience forces them to change their schemas (Janoff-Bulman 1992; Epstein 1991; Horowitz, 1986). In other words, the traumatic experience showed them that they are not invulnerable, that people are not always benevolent or not all people are benevolent, and that the world is not necessarily just. Confronted with this new reality, they are forced to restructure their previous schemas in order to integrate this new experience.

Research has revealed that traumatic events can impact schemas differently in men and women. Notably, women tend to experience more negative self-beliefs compared to men, as evidenced by feelings of incompetence, helplessness, and similar emotions (Foa et al., 1999). Additionally, women report more negative views of the world than men (Foa et al., 1999). In other words, women see the world as more

dangerous than men after a traumatic experience and develop negative feelings and views of themselves.

In summary, the mental schemas of the individual pre-trauma, which were created based on previous life experiences, are influenced by, and as a consequence, experience changes following the traumatic events. Such changes in schemas vary across genders, with women experiencing more negative changes in beliefs about the self and the world.

Trauma Memory

The memory of a traumatic event is composed of the event itself and the individual's beliefs about it, which are heavily influenced by mental schemas. Memories of traumatic events include representations of stimulus elements, response elements, and meaning elements (Foa et al., 1989). To illustrate, suppose that a woman who viewed herself as worthy, people as benevolent and the world as just is followed and raped by a man with long hair holding a gun to her; she screams, fights him. Her memory of this event will consist of representations of the stimulus elements (e.g., man, long hair, gun); response elements (e.g., scream), and meaning elements (e.g., helpless, dangerous). This traumatic experience may force the woman to change her previously held beliefs in order to accommodate the trauma. Additionally, her emotional and behavioral responses to future events may be greatly impacted by this event.

Research suggests that men and women differ in how the memory of the traumatic event is encoded in their mind, as well as their own perceptions and beliefs about the traumatic event. For example, research indicates that males report a variety of traumatic events as less frightening than females (Ehlers et al., 1998; Fritz et al., 1981;

Rind et al.,1998). Females, on the other hand, experience greater feelings of fear post-trauma when compared to men and exhibit elevated physiological indicators, such as heart rate acceleration (Stamps & Porges, 1975). Additional research has confirmed this finding. For instance, research by Fredrickson and colleagues (Fredrickson et al., 1976) found greater electrodermal responses in women in anticipation of fear-provoking conditions. Although these results are valid, caution should be exercised in interpreting them, as there may be mediating variables at play, such as socialization and gender role expectations, that could influence this relationship.

In summary, traumatic events impact the way that the trauma is experienced by the individual. Gender plays a significant role in how the memory of the traumatic event is encoded in the mind and how it colors one's perceptions and beliefs about the traumatic event.

Affective Processing

The experience of a traumatic event requires some affective or emotional processing of the aftermath and consequences of the trauma. Differences in affective processing have been noted in the literature between genders. There is research to suggest that women and girls are more prone to internalize their pain, whereas men and boys have a tendency to externalize it (Maschi et al., 2008). In women this tendency translates in adopting more emotion-focused coping strategies, whereas in men it is translated in adopting more problem-focused coping strategies. Other research, however, has found no gender differences in affective processing of trauma (King et al., 2013).

Gender Differences in Post-Traumatic Growth

Similar to experiencing differences in their responses to traumatic events, men and women experience differences in posttraumatic growth, as well. This gender difference has been documented in adolescents, as well as adults (Linley & Joseph, 2004; Laufer & Solomon, 2006). Gender differences in post-traumatic growth have been reported across various types of traumatic events including, HIV/AIDS, cancer, terrorism, and natural disasters (Milam et al., 2005; Bellizzi, 2004). Gender differences in experiences of post-traumatic growth were initially observed in the original study by Tedeschi and Calhoun (1996) leading to the conceptualization of post-traumatic growth as a phenomenon. They found that while post-traumatic growth was experienced by both women and men, women seemed to experience higher rates of it as measured by the post-traumatic growth inventory. Similar findings were found by Park, Cohen, and Murch (1996) who used the Stress-Related Growth Scale (SRGS) to assess post-traumatic growth.

Additional research (Vishnevsky et al., 2010; Jin et al., 2014; Casali et al., 2022) confirmed that women demonstrate higher levels of post-traumatic growth than men in stressful and traumatic events. Furthermore, a meta-analysis (Vishnevsky et al., 2010) of 70 studies (N=16,076) revealed small to moderate gender differences, with women reporting more post-traumatic growth than men; the post-traumatic growth reported increased as the mean age of the sample increased. Several explanations have been proposed to explain the gender differences in post-traumatic growth. Among these

explanations are the level of perceived threat and loss, cognitive processing, and coping styles.

Higher levels of perceived threat and loss have been associated with greater levels of post-traumatic growth (Tedeschi & Calhoun, 1996). As research shows, women are more likely than men to perceive a situation as threatening, rate events as more stressful, endorse more loss of personal control, experience acute psychological and biological reactions to trauma, such as intense fear, panic, anxiety, helplessness, intrusive thoughts and horror (Olff et al., 2007). While research in this area is not conclusive yet, it has been proposed that higher levels of perceived threat and loss may lead to more trauma processing efforts, and consequently higher levels of post-traumatic growth

Cognitive processing of the traumatic experience highly influences experiences of post-traumatic growth. Specifically, rumination and reflection have been linked with higher levels of PTG. Women are more likely than men to engage in rumination, both negative rumination and constructive rumination (Treynor et al., 2003). While engaging in negative rumination has been linked to depression in women (Nolen-Hoeksema et al., 1999; Nolen-Hoeksema et al., 1993), engaging in constructive rumination leads to greater reports of post-traumatic growth (Tedeschi & Calhoun, 2004; Janoff-Bulman, 1992). Constructive rumination focuses on trying to understand the event, generating possible explanations as to why it occurred, thinking about how it impacted one's life and how one could "use" the traumatic experience to benefit from it. The latter two steps give way to reflection. Research shows that women engage in reflection more than men (Prieto-Ursúa & Jódar, 2020). Reflection is critical to post-traumatic growth development

because it is associated with increased awareness of personal strengths and capabilities and an awareness of the importance of social relations (Tolin & Foa, 2008).

Coping style, specifically differences in coping styles between men and women, may be another explanation for gender differences in post-traumatic growth. Women are more likely to rely heavily on emotion-focused coping (Vingerhoets & Van Heck, 1990; Thoits, 1991) and social support seeking (Park et al., 1996; Tedeschi & Calhoun, 2004). Emotion-focused coping involves using strategies to manage stressors and maintain emotional equilibrium (Billings & Moss, 1981). While research has found emotion-focused coping to be less effective in reducing stress than problem-focused coping (Carver et al., 1989), paradoxically, research has found emotion-focused coping to be linked to higher levels of post-traumatic growth. Emotion-focused coping is an essential element in achieving a sense of acceptance following the aftermath of the traumatic event and positive reframing of the event (Tedeschi & Calhoun, 1996). Women are more inclined to use emotion-focused coping strategies (Konaszewski et al., 2021) and report higher levels of acceptance and positive appraisal (Else-Quest et al., 2012; Helgeson et al., 2006), both of which are related to post-traumatic growth (Jin et al., 2014).

Utilizing social support seeking as a coping strategy has been linked to numerous favorable outcomes, including heightened levels of post-traumatic growth. Social support is presumed to assist individuals in evaluating events as less stressful (Cohen & Wills, 1985), and it has been shown to positively impact outcomes (Spiegel et al., 1989). Moreover, social support has been associated with post-traumatic growth (Park et al., 1996; Tedeschi & Calhoun, 2004). In this regard, supportive others provide a platform for

traumatized individuals to express themselves and receive emotional support, information, and feedback pertaining to their stressful experience. This can result in the individual relating to others in a more positive manner and feeling more self-assured when faced with future stressful situations (Tedeschi & Calhoun, 2004, 2006). Studies have demonstrated that individuals who have received support from others after a traumatic event feel closer to their loved ones (McMillen, 1999). Studies show that women tend to seek social support at higher levels when compared to men (Bellizzi, 2004; Calhoun & Tedeschi, 1998). Socialization processes are thought to be a potential factor in explaining the differences in utilization of social support between males and females (Eagly & Crowley, 1986). According to this theoretical perspective, females are expected and encouraged to seek assistance and support from others when confronted with problems. In contrast, males are often discouraged from exhibiting such support-seeking behavior. As a result of these socialization expectations, females are more inclined than males to seek out others for help when coping with stressful events.

Chapter Summary

Trauma is conceptualized as the subjective perception of an intensely distressing experience (Micale, 1995). Such an experience triggers a cascade of responses grouped into four main categories: neuro-biological, psychological and emotional, cognitive, and social responses. Initial responses to trauma, albeit negative in nature, are normal and expected. After some time, depending on the individual, type of trauma, and a variety of other factors, responses tend to follow three main trajectories: (1) negative response

trajectory or pathology, (2) neutral response trajectory or maintaining the status quo, also referred to as resilience, and (3) positive response trajectory or post-traumatic growth.

Several models of growth have been proposed, describing growth as an outcome (Schaefer & Moos, 1998; Linley & Joseph, 2005), as a coping strategy (Taylor, 1953; Park & Folkman, 1997; Davis et al., 1998) or as both an outcome and coping strategy (Tedeschi & Calhoun, 1995, 2004). To date, the three most prominent theories explaining positive growth after trauma are the Functional-Descriptive Theory of Post-Traumatic Growth (Tedeschi & Calhoun, 1996; Calhoun et al., 2012), the Organismic Valuing Theory (OVP; Joseph & Linley, 2005) and the Biopsychosocial-Evolutionary Theory (Christopher, 2004). The Functional-Descriptive Theory of Post-Traumatic Growth (Tedeschi & Calhoun, 1996, 2004; Calhoun & Tedeschi, 2006; Calhoun et al., 2012) offers the most comprehensive model of positive growth post-trauma to date. This model sees positive growth after trauma as both a process and an outcome of the struggle with the trauma and its consequences.

The term “post-traumatic growth” was coined in 1996 by Richard Tedeschi and Lawrence Calhoun, and it refers to positive psychological changes that are experienced after a traumatic event as one struggles with the trauma (Tedeschi & Calhoun, 1996). According to Tedeschi and Calhoun (2004), post-traumatic growth describes an experience that shatters an individual’s assumptive world and in the struggle with the trauma, the individual’s development in at least some areas surpasses the level of development before the traumatic event. The individual not only survives the trauma but undergoes significant changes in cognitive, emotional, and behavioral functioning, going

beyond prior levels of functioning. It is important to note that it is not the traumatic event itself that produces growth but rather the struggle in the aftermath of the traumatic event and what comes out of that struggle.

The Post-Traumatic Growth Theory is built on the constructivist perspective that people construct core beliefs about the self and the world and mental models or cognitive schemas to understand their experiences (Tedeschi et al., 2018). The post-traumatic growth process starts with the individual pre-trauma and ends with positive changes that occur as a result of the individual's struggle with the trauma. The positive changes have been evidenced in five domains: Increased Appreciation for Life, Relating to Others, Personal Strength, Spiritual Change and New Possibilities. The most used instrument worldwide to measure positive changes following trauma is the Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996).

Post-traumatic growth has been reported to occur in a wide array of major life adversities or traumatic events. Life events that are most likely to promote growth are the ones that significantly challenge the individual's fundamental assumptions about the world, including assumptions that the world is benevolent, predictable, and controllable; that one is safe and secure, and that others are benevolent and can be trusted (Janoff-Bulman, 1992). Elements that play a key role in the experience of post-traumatic growth are the characteristics of the person pre-trauma, characteristics of the traumatic event, management of emotional distress, rumination/ cognitive engagement and processing, self-disclosure, socio-cultural influences, and life narrative development.

Research has found several variables to be associated with post-traumatic growth conceptualized as variables related to (1) the person (e.g., cognitive appraisal, socio-demographic characteristics, personality characteristics), (2) the traumatic event (e.g., include event type, event severity, source of violence, and intentionality), and (3) circumstances (e.g., event centrality, time passed since the traumatic event, number of positive events since the traumatic event, etc.) Post-Traumatic Growth can be facilitated through approaches that combine elements of existential, humanistic, cognitive, and narrative approaches to change. Among the factors that contribute to post-traumatic growth are: education, engagement in emotional regulation, constructive self-disclosure, creating a trauma narrative with post-traumatic growth domains, engagement in dialectical thinking, and developing life principles that are robust to challenges (Tedeschi & McNally, 2011).

When it comes to the study of post-traumatic growth, several controversies must be acknowledged. They could be grouped into two categories: controversies with the post-traumatic growth phenomenon itself and methodological issues. In terms of controversies with the post-traumatic phenomenon itself, there exists three main issues: (1) whether post-traumatic characterizes real growth or an illusion; (2) whether measures of subjective perceptions of growth are indicative of objective growth, and (3) biases in reports of post-traumatic growth. Methodological issues concerning post-traumatic growth revolve around three main themes: (1) overreliance on quantitative measures, (2) lack of longitudinal studies, and (3) lack of studies with pre-post designs and control groups.

The experience of traumatic events is a universal and non-discriminatory phenomenon. Nonetheless, genders are not affected equally – an observation seen cross-culturally. In most societies, exposure to traumatic events is higher in men than women (Breslau et al., 1999; Kessler et al., 1995; Morris et al., 2005). The most common traumatic events to which men are exposed include accidents, physical assault, combat or witnessing death and injury. Women, on the other hand, are more prone to experience emotional abuse, rape, sexual assault, and sexual abuse, especially as children. Paradoxically, despite their lower rates of exposure to traumatic events compared to men, women are more profoundly impacted by traumatic events than men (Stevens, 2020; Platt, 2020; Breslau et al., 1999). A constellation of biological, psychological, socio-cultural, and event-specific factors contribute to gender differences in the experiences and impact of traumatic events.

Similar to experiencing differences in their responses to traumatic events, men and women experience differences in posttraumatic growth, as well. While post-traumatic growth was experienced by both women and men, women seemed to experience higher rates (Tedeschi & Calhoun, 1996; Vishnevsky et al., 2010; Casali et al., 2022). Several explanations have been proposed to explain the gender differences in post-traumatic growth, among which the level of perceived threat and loss, cognitive processing, and coping styles.

CHAPTER THREE

METHODS

Overview of Dissertation Study

Highly stressful events and major life traumas can lead to a variety of negative psychological, emotional, and behavioral outcomes. Paradoxically, the struggle with traumatic events can also lead to positive experiences. Tedeschi and Calhoun (1996) coined the term “post-traumatic growth” to capture positive psychological changes experienced in the aftermath of traumatic events stemming from the struggle with such events. A crucial element in transitioning from trauma to post-traumatic growth involves leadership, particularly self-leadership and positive leadership. Likewise, positive affect and positive emotions have been found to be positively associated with growth (Abraido-Lanza et al., 1998; Park et al., 1996; Fredrickson et al., 2003). To date, positive emotions are not included in the post-traumatic growth theory of Tedeschi and Calhoun (2004), however, Calhoun and Tedeschi (2006) suggest that positive emotions may be best to be placed within the category of “person pre-trauma” to describe the person’s pre-existing dispositions to positive affective states.

Through my dissertation work, I explored if and how experiencing positive emotions, cognitions, and behaviors aids and/or enhances the process of growth following trauma, regardless of the individual’s pre-existing dispositions to positive affective states. Specifically, I examined the “dance” between positive emotions, cognitions, and behaviors and self-leadership; their potential relationships; and the

potential relationship between them and post-traumatic growth. The overarching research question of my dissertation study was *“What, if any, relationships exist between positive self-leadership – fueled by positive emotions and positive cognitions and manifested through positive behaviors – and self-reported experiences of growth after the experience of a traumatic or highly adversarial event for adults engaged in higher education?”*

Research Design

The theoretical paradigm framing the study was post-positivism. Post-positivism stems from the positivist tradition, also referred to as the scientific method, which adheres to the belief that there is a singular reality that can be measured (Creswell, 2009). Positivism embodies "a rationalistic, empiricist philosophy tracing its roots to Aristotle, Francis Bacon, John Locke, August Comte, and Emmanuel Kant" (Mertens, 2005, p. 8). It also "embraces a deterministic worldview where causes likely determine effects or outcomes" (Creswell, 2003, p.7). Post-positivism, on the other hand, questions the traditional concept of the absolute truth of knowledge (Phillips & Burbules, 2000). Under post-positivism, one cannot be entirely certain about claims of knowledge when studying the behavior and actions of humans. Post-positivism operates under the assumption that any research endeavor is “shaped by a number of well-developed theories apart from, and as well as, the one which is being tested” (Cook & Campbell, 1979, p. 24). Additionally, theories are seen as provisional, and new understandings may challenge the whole theoretical framework (Kuhn, 1962).

Positivist and post-positivist research are most commonly aligned with quantitative methods of data collection and analysis. Employed across various

disciplines, including the natural and social sciences, quantitative research offers a systematic approach to investigating phenomena. Creswell (1994) defined quantitative research as a method of explaining phenomena through the collection of numerical data, analyzed using mathematically based techniques, particularly statistics. Cohen and Manion (1980) added that quantitative research focuses on describing what "is" rather than what "ought" to be. Also, given its emphasis on measurable data, quantitative research excels in addressing questions pertaining to the "what" or "how" of a particular scenario but not the "why". Quantitative research highlights trends across data sets or study groups. Through the use of statistical tools, researchers can summarize, compare, and generalize findings, allowing for rigorous evaluation and replication of studies (Creswell, 2014).

Quantitative research encompasses various methodologies, including survey research, correlational research, experimental research, and causal-comparative research. Given that the current study uses survey research, the following paragraphs offer a description of survey research. Survey research is a widely employed method for gathering data and insights from a target population. It involves the systematic collection of information through structured questionnaires or interviews, aiming to understand attitudes, behaviors, opinions, and other measurable characteristics within a population (Goertzen, 2017). It aims to address questions like "How frequently do individuals engage in particular behaviors?" or "What proportion of individuals engage in a particular behavior?". According to Fowler Jr. (2013), survey research uses scientific sampling and questionnaire design to measure the characteristics of a population with precision. Using

sound sampling techniques ensures that samples are representative of the target population. Surveys must be constructed carefully to gather relevant and reliable data. Questions must be clear, unbiased, and effectively structured to elicit accurate responses (Fowler Jr., 2013). Surveys can be conducted through various mediums including online surveys, telephone interviews, face-to-face interviews, or mailed questionnaires, depending on the nature of the research and target population (Babbie & Benaquisto, 2015).

Additionally, survey research uses quantitative analysis techniques such as descriptive statistics, correlation analysis, and regression analysis to analyze the data and generate estimates from a sample that can be extrapolated to the target population with a certain level of confidence (Babbie & Benaquisto, 2015). Ensuring the validity and reliability of survey instruments is essential to produce accurate results. Pilot testing, validation studies, and reliability checks are often conducted to enhance the credibility of survey findings (Fowler Jr., 2013). Also, ethical principles must be upheld throughout the survey research process, including informed consent, confidentiality, and protection of participant rights (Babbie & Benaquisto, 2015).

In summary, the current study used quantitative research methods of data collection and analysis, specifically, survey research to address the questions under study.

Participants and Sampling

Population and Sample

The study took place in the context of higher education. Participants were derived from higher education institutions in a Midwestern state. Participants included students,

faculty, staff, and administration members of each institution in the state. The inclusion criteria to participate in the study were: (1) adults of 18 years of age and up, (2) having experienced a traumatic or highly adversarial event, and (3) engaged in (i.e., either student, staff member, faculty member, or administrator) a higher education institution.

Sampling Process

Participants were identified via a mix of population sampling and snowball sampling. I selected all higher education institutions in the state of Michigan. Participants were asked to share the recruitment information with individuals that they knew in and from other higher education institutions, thus creating a snowball sample process. Additionally, I shared internet postings with study information on various social media channels.

I recruited participants via (1) email messages and (2) social media postings. I sent an email soliciting participation in the research study (Appendix A) along with the study's information sheet (Appendix B) to potential participants via blind copied mass emails to faculty, administration, and staff at each higher education institution. I accessed email addresses of faculty, staff, and administration at each institution as they are publicly available on each institution's website. I asked the recipients to share the study document with their students and connections via email or word of mouth. Also, I emailed the study information to student organizations at each higher education institution using the email addresses provided on the institution's website, and they were asked to share the study information with their members and other students.

Additionally, I reached participants through social media posts, sharing study information with higher ed student groups at each institution, and relying on snowball sampling. I posted recruitment materials in the form of a post (Appendix C) on various social media channels, including but not limited to LinkedIn, Instagram, and Facebook.

Participants

A total of 489 participants participated in the study. Participant ages ranged from 18 to 78 years old, with a mean age of about 37 years old.

Sex and/or Gender

Of the 489 participants, 480 provided valid responses regarding their sex or gender. The majority identified as female (74.0%), followed by male participants (20.2%). A smaller proportion identified as non-binary (4.4%), trans-male (1.5%), and 1.8% did not provide a response.

Race and/or Ethnicity

Of the 489 participants, 471 provided valid responses concerning their race and/or ethnicity. The largest racial/ethnic group was Caucasian/White (69.9%), followed by Black/African American participants (9.3%), Middle Eastern (5.3%), and Asian (5.7%). Latino participants accounted for 4.2%, Native American participants for 0.6%, and individuals identifying as mixed race made up 4.9%; 3.7% did not report their race or ethnicity.

Religion

A total of 454 participants provided information about their religious affiliation. The largest group identified as Christian (45.8%), followed by those reporting no

religious affiliation (21.6%). Other religious affiliations included Islam (6.4%), Judaism (1.3%), Buddhism (1.1%), Hinduism (0.7%), and Indigenous spiritual traditions (0.2%). Additionally, 2.6% of the participants identified as spiritual, while 14.5% reported being secular or non-religious. A small number of participants identified with Taoism (0.2%), other religions (5.1%), or a mixed religious background (0.4%), and 7.2% of the responses were missing.

Occupation

Among the 489 participants, 336 reported their occupation, with the largest group consisting of professors, faculty members, or educators (43.2%). Students made up 36.3%, while individuals in higher education administration accounted for 20.5%. A portion of the sample (31.3%) did not provide information regarding their occupation.

Employment Status

Regarding employment status, 483 participants provided valid responses. The majority (63.1%) reported working full-time, while 23.4% were employed part-time. A smaller proportion (13.5%) indicated they were not working for pay. Employment status was not reported by 1.2% of the population.

Education Level

Of the 489 participants, 484 responded regarding their highest level of education. The largest group held a Ph.D. or equivalent (28.9%), followed by those with a Master's degree (25.8%) and a Bachelor's degree (17.4%). Additionally, 5.8% of the participants had a Professional degree, while 5.2% had an Associate degree. Some college experience without a degree was reported by 12.6% of the participants, and 4.1% reported having a

high school diploma; 0.2% reported having less than a high school education, and 1.0% did not report their education level.

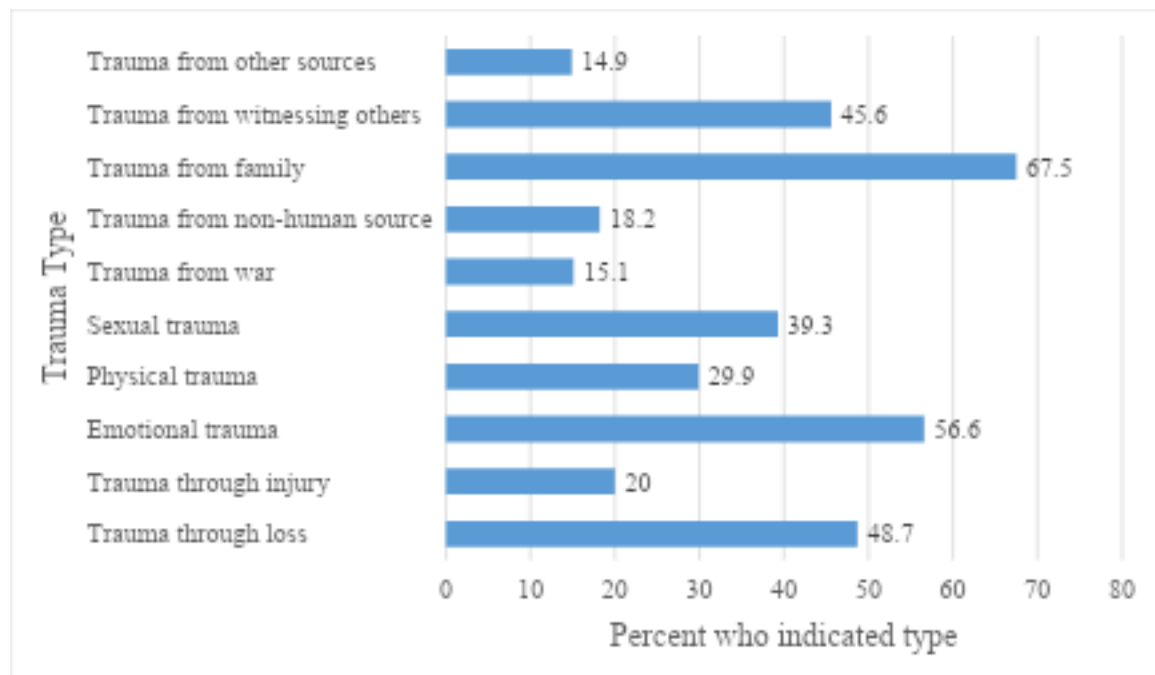
Trauma Experienced

The number of trauma types reported by participants ranged from 0 to 27, indicating that while some individuals reported no trauma exposure, others experienced a significant number of trauma types. On average, participants reported having experienced about six different types of trauma. However, there was considerable variation, as reflected in the standard deviation of 4.31, which indicates that individual trauma experiences varied widely. This result suggests that while some individuals may have encountered minimal trauma, others had endured multiple traumatic events, highlighting the diverse nature of trauma exposure within the population.

A detailed analysis of the data, categorized by different types of trauma experienced, revealed that the most frequently reported trauma type was trauma from family, reported by 67.5% of participants. It was followed by emotional trauma reported by 56.6% of the participants, trauma resulting from loss reported by 48.7% of the participants, and trauma experienced through witnessing others' trauma reported by 45.6% of the participants. The least frequently reported trauma type was trauma from other sources, reported by 14.9% of participants. Figure 3.1 presents a comprehensive breakdown of trauma types experienced by the participants.

Figure 3.1

Comprehensive Breakdown of Trauma Types Reported



In conclusion, the analysis reveals significant variability in trauma exposure, with participants reporting between 0 and 27 trauma types ($M = 5.60$, $SD = 4.31$). Trauma from family was the most common (67.5%), followed by emotional trauma (56.6%), trauma from loss (48.7%), and witnessing others' trauma (45.6%). These findings highlight the prevalence of interpersonal and emotional trauma within the sample.

Data Collection Instruments and Measures

The study used an electronic survey, the KINDING Scale of Positive Practices, which I developed. This survey aims to measure the KINDING constructs, their outcomes/ consequences, and the intricate interactions within and among the constructs.

Description of the KINDING Scale

I conceptualized the survey with the aim of accomplishing the following:

1. Examine specific positive self-leadership practices within each construct of the proposed theory in which individuals engage during and after the experience of a highly adversarial or traumatic event
2. Measure the frequency with which individuals engage in these positive practices
3. Understand the impact of these positive practices within each construct
4. Understand the impact of these positive practices among the different constructs
5. Explore the relationship between the KINDING process and the experience of post-traumatic growth

Considering the above, I conceptualized the survey to consist of several sections:

background information, traumatic experiences checklist, part one, part two, part three, and part four. The background section of the survey included the following information: age, gender, race, ethnicity, religion, profession, employment status, and education level.

The traumatic experiences checklist was generated based on a literature review of the most commonly experienced traumatic or highly adversarial events. For a complete list of traumatic events, please refer to the KINDING Scale of Positive Practices in Appendix D.

I designed Part One of the scale to capture the frequency with which individuals reported engaging in positive practices under each construct while navigating a highly adversarial or traumatic event. I designed Part Two to encapsulate the frequency with which the individuals reported engaging in the positive practices under each construct in

the present. The purpose of Part Two was to gather information to examine how engaging in positive practices during the traumatic experience (Part One) led to the outcome/ consequence of engaging in that practice (second part of the proposition, e.g. kindness *uplifts*, etc.).

To generate the scale items under each construct of the KINDING theory, I employed deductive methods. Specifically, I generated items based on a literature review of positive practices in which individuals engage while going through the experience of highly adversarial or traumatic events (items for Part One) and in the present/ currently (items for Part Two). The number of items under each construct varied based on what the literature review revealed. I grouped the items according to each construct. For example, kindness-based positive practices were grouped together; imagination-based positive practices were grouped together, and so forth. The response categories for Part One and Part Two of the scale reflected the frequency of engagement in each positive practice.

I designed Part Three to gather information with which to make inferences about the KINDING process and potential for experiencing post-traumatic growth. Therefore, I adopted the post-traumatic growth inventory (Tedeschi & Calhoun, 1996) for this section; see Appendix E.

Description of Piloting the Survey Draft

To craft and validate the construction of the scale, I conducted a pilot study. The pilot study included the development, testing, evaluation, and refinement of the KINDING scale. Specifically, I piloted the scale for ambiguity, validity, and feasibility, as stated in the following questions:

1. *Are the scale items clearly stated and easily understood by the general population? (ambiguity)*
2. *Does the scale measure the constructs that it was intended to measure (i.e., the KINDING constructs)? (content validity)*
3. *Is the KINDING electronic scale the most feasible data collection method considering my doctoral study's purpose, and what, if any, improvements are needed to streamline the data collection process? (viability of the data collection method)*

Specifically, I designed Part Four of the survey to gather feedback about the scale from participants via a series of questions as it related to the scale's clarity, ease of completion, emotional impact, confidentiality and privacy, suggestions for improvement, and overall impact. The questions were as below:

Clarity: (1) Were any of the statements confusing? If so, please identify what caused the confusion.; (2) Were the instructions for the items concerning responses to trauma clear? If not, please identify what was unclear and/or caused confusion.

Emotional Impact: Did any of the statements evoke strong emotional reactions or discomfort? If so, please identify the discomfort you felt.

Ease of Completion: Did the length of the survey feel appropriate?

Confidentiality and Privacy: Were there any concerns about the security of your data or how it would be used?

Suggestions for Improvement: Are there any changes that you would recommend to enhance the overall survey experience?

Overall Impact: How valuable do you think your participation in this survey will be for advancing the understanding of positive practices following trauma/ adversity?

To test the content validity of the survey, I conducted think-aloud interviews with seven of participants. The purpose of the think-aloud interviews was to understand the participants' interpretation of the statements and whether the statements meant to them what they were designed to assess by gaining insights into their thought processes and decision-making while engaged in taking the survey. During the think-aloud interviews, I asked the participant to read survey statements and verbalize their thoughts, feelings, and reasoning for responding to each statement. I analyzed the interviews to look for common themes describing concerns related to the scale. The analysis yielded important data germane to the development of the scale, which were incorporated in the final survey. I further assessed content validity by seeking input from my dissertation chair and committee members, who reviewed the items and offered feedback.

Based on participant feedback, several modifications were made to improve the survey's clarity and usability. To address concerns about survey length and fatigue, I shortened the survey to encourage completion. I provided definitions for complex or unfamiliar terms to enhance comprehension. I simplified the wording by removing jargon and field-specific terminology. I emphasized key instructions by highlighting essential words in bold, ensuring participants remain focused while completing the survey. I grouped similarly worded or structured items together, with the differentiating word highlighted in bold to aid concentration. I added clarifications to specify whether respondents should answer based on a single trauma or all traumas experienced, as well

as whether responses should reflect childhood or adulthood experiences. Additionally, “race” was included in the demographic section to allow for analysis of responses by racial background. Lastly, I added two trauma categories: (1) immigration by choice and (2) forced immigration or relocation due to circumstances such as war. These revisions helped to improve the survey’s accessibility, clarity, and effectiveness in capturing participants' experiences.

The second round of the pilot study consisted of administering the survey to a sample that closely resembled the target population in order to collect sufficient data for scale development and validation. The survey was created using Qualtrics. To participate in the pilot study, participants must be over the age of 18 years and have potentially experienced a traumatic or highly adversarial event. Participants were identified via convenience and snowball sampling. I used my own academic, professional, and personal networks to identify participants. I recruited participants via verbal communication and e-mail messages. I included the link of the KINDING Scale in the email notices emailed to potential participants. The survey took place online, and it was available for the duration of thirty (30) days since the day the email notices were sent out.

I collected the survey data via Qualtrics and then downloaded as an SPSS file in a password-protected file on a password-protected computer. Prior to commencing data analysis, I cleaned up the data. Out of twenty-four participants who had tried to complete the survey, nine (9) participants had not finished it. Only fifteen (15) surveys were fully completed and used for data analysis.

To make final decisions about reducing the number of survey items, I conducted a Principal Components Analysis (PCA) followed by a Principal Axis Factor analysis (PAF) (described below). For both of these processes, factors were rotated for better interpretation. Rotation aims to achieve an optimal simple structure by minimizing the number of factors on which each variable loads and maximizing the occurrence of high loadings on each variable. (Rummel, 1970). Each factor outlines a distinctive set of interconnected variables, simplifying the process of interpretation (Cattell, 1973). Of the two rotations available, orthogonal and oblique rotation, I chose orthogonal rotation, specifically, the Varimax rotation. Orthogonal rotation involves rotating the factors by 90 degrees from each other with the assumption that the factors are uncorrelated (DeCoster, 1998; Rummel, 1970). I opted for Varimax rotation because it minimizes the number of variables that have high loadings on each factor (Osborne & Costello, 2019).

I ran the Principal Components Analysis, which produces components, for purposes of data reduction or eliminating items that did not “go together” under each respective construct (e.g., kindness, imagination, etc.), while still being able to explain the same amount of variance with fewer variables (principal components). I ran the Principal Axis Factor analysis, which produces factors, to provide measures for latent factors by measuring correlations between variables. Eigenvalues were used to determine how many factors to retain. Only items with correlation coefficients of 0.7 and up were included in the final survey, meaning that the items were strongly or very strongly correlated. The same data analysis method and procedure were used to analyze the data for Part Two of the scale. The final KINDING scale is found in Appendix D.

In summary, the results of the pilot study demonstrated that the directions and items of the KINDING scale were clear and easily comprehensible. Results from statistical analyses indicated that there is evidence to suggest that the KINDING scale is a reliable and valid instrument for assessing positive practices aligned with the seven constructs of the KINDING theory: Kindness, Imagination, Nurturing Soul, Dreams, Implementation, Narrative, and Gratitude. Additionally, incorporating modifications reflective of participants' feedback improved the overall survey-taking experience.

Data Collection Procedures

After receiving IRB approval (Appendix F), I collected the data via the KINDING Positive Practices Scale. I provided potential participants with the link to the survey in the email soliciting participation in the study or via social media postings. Specifically, faculty, staff, and administration at each institution received an email soliciting participation in the research study. I also asked recipients to share the study document with their students and connections via email or word of mouth. I provided with the survey link to students via emails shared with them by faculty, emails shared with them by higher education student organizations at their institution, and social media postings.

The survey took place online and took approximately thirty to forty minutes to complete. The survey was open and available for data collection for two months. The survey was completely anonymous, ensuring that no identifiable data that could be directly linked to participants were collected. I collected the data from the survey through Qualtrics and then downloaded as an SPSS file in a password-protected file on a password-protected computer.

The information sheet was presented as page one of the survey. I asked participants to answer "yes" or "no" to the question "Do you agree to participate in this study?" located at the end of the information sheet. Only if the participant selected "yes" was she/he able to access the survey. At the end of the survey, I asked participants if they would like to be included in a drawing for a \$50 gift card. Responding "Yes" to this question took the participant to a separate survey, which only asked for the participant's email address. Using two surveys prevented email addresses from being linked to the survey responses.

Data Analysis

To analyze the data, I used SPSS. I used descriptive statistics to get a general description and understanding of the data.

Measures

In order to test if there were shared underlying constructs or "factors" for the group of survey items, I ran a principal components factor analysis with varimax rotation. Factor analysis is a method used to assess the variability among observed, correlated items with the goal of identifying a potentially lower number of underlying constructs. For example, between ten items, there may be as few as one and as many as ten different underlying constructs being measured. Principal components analysis estimates an eigenvalue solution to the multivariate equation suggested by the matrix made up of the survey items as variables and retains as potential groupings any eigenvalue greater than 1. The constructs identified through principle components analysis were then rotated for better interpretation. Rotation aims to achieve an optimal simple structure by minimizing

the number of factors on which each variable loads and maximizing the occurrence of high loadings on each variable. (Rummel, 1970). Each factor outlines a distinctive set of interconnected variables, simplifying the process of interpretation (Cattell, 1973).

Of the two rotations available, orthogonal and oblique rotation, I chose orthogonal rotation, specifically, the Varimax rotation. Orthogonal rotation involves rotating the factors by 90 degrees from each other with the assumption that the factors are uncorrelated (DeCoster, 1998; Rummel, 1970). I opted for Varimax rotation because it minimizes the number of variables that have high loadings on each factor (Osborne & Costello, 2019). The results of this analysis provide two critical pieces of information: (1) the number of underlying constructs measured by the items tested, and (2) the association (a correlation coefficient) between each item and that underlying construct. The second piece of information provides the text correspondence to the unmeasured construct needed to create a new name for the construct. I used this analysis process for purposes of data reduction or eliminating items that did not “go together” under each respective construct (e.g., Kindness, Imagination, etc.), while still being able to explain the same amount of variance with fewer variables (principal components). The paragraphs below show the information about the correlation of each KINDING Model component with its survey items (also referred to as the “factor loading” for each item on its component).

Kindness

I defined Kindness as being warm and understanding toward ourselves in instances of pain, suffering, and failure rather than being harshly self-critical (Neff,

2003). The Kindness component consisted of the following statements and factor loadings.

Table 3.1

Kindness Component Factor Loadings

Survey Statements	Factor Loading
I was loving towards myself.	.883
I gave myself the tenderness and caring I needed.	.878
I was patient with myself.	.871
I was tolerant of my own flaws and inadequacies.	.857
I was understanding towards myself.	.842
I tried to become mindful of my experience of the present moment.	.807
I tried to keep things in perspective.	.784

Imagination

I defined Imagination as the act and process of forming a mental image of something not present to the senses or never before wholly perceived in reality; from the Latin *imaginari* meaning "to picture oneself" (Merriam-Webster, 2022). The Imagination component consisted of the following statements and factor loadings.

Table 3.2

Imagination Component Factor Loadings

Survey Statements	Factor Loading
I imagined overcoming the challenges I faced.	.800
I visualized how I would feel after overcoming the traumatic/ adversarial event.	.784
I imagined myself engaging in positive activities.	.765
I imagined how I could use the traumatic/ adversarial experience to improve in one or several areas of life.	.761
I imagined a better future for myself.	.746
I engaged in positive thinking about the present.	.664

Nurturing Soul

I defined Nurturing Soul as an individual's ability to actively participate in intentional self-care practices aimed at nurturing and fostering personal growth and development. The Nurturing Soul component consisted of the following statements and factor loadings.

Table 3.3

Nurturing Soul Component Factor Loadings

Survey Statements	Factor Loading
I engaged in activities that brought me joy.	.751
I engaged in self-care routines.	.746
I sought out experiences to relax (e.g., petting an animal, cuddling a soft blanket, putting on comfortable clothes, etc.)	.673
I practiced recognizing how certain thoughts were associated with certain emotions.	.659
I spent time with loved ones.	.646
I tried to get adequate amounts of sleep, at least 7 hours of sleep a night.	.646
I spent time in nature.	.624
I avoided taking on too many demands.	.554
I read or listened to stories/ memoirs of people sharing their traumatic experiences.	.480

Dreams

I defined Dreams as strongly desired goals or aspirations (Merriam-Webster 2022). The Dreams component consisted of the following statements and factor loadings.

Table 3.4

Dreams Component Factor Loadings

Survey Statements	Factor Loading
I crafted a mission for my life.	.908
I created a vision for my life.	.896
I established a series of goals for my life.	.886

Table 3.4 (cont.)

Survey Statements	Factor Loading
I looked into activities that would motivate me to stick to my goals.	.840

Implementation

I defined Implementation as putting a plan into effect, including the process of monitoring progress, making adjustments, and evaluating impact (National Center on Supportive Learning Environments, 2022). The Implementation component consisted of the following statements and factor loadings.

Table 3.5***Implementation Component Factor Loadings***

Survey Statements	Factor Loading
I made changes to the action plan as needed.	.931
I created an action plan to reach my goals.	.926
I was mindful of my progress towards the action plan.	.908
I broke down my goals into smaller chunks.	.885

Narrative

I defined Narrative as an introspective recounting of one's development to understand who one is through the stories one tells about oneself, which is accomplished by integrating different roles or elements of life as they arise at one time (synchronically) and across time and space (diachronically) (McAdams, 2001). The Narrative component consisted of the following statements and factor loadings.

Table 3.6*Narrative Component Factor Loadings*

Survey Statements	Factor Loading
I thought about my mental responses to the traumatic event.	.850
I thought about how my life had been impacted by the traumatic experience.	.818
I thought about how my beliefs and assumptions were shaping how I was dealing with the traumatic experience.	.814
I thought about my emotional responses to the traumatic event.	.793
I thought about the traumatic experience – why it happened, how it could have been prevented (if possible), how it affected my present life and future, etc.	.745
I thought about lessons that I learned from going through the traumatic experience.	.742
I tried reframing the experience as a challenge that needed to be overcome rather than a trauma that defined me.	.574

Gratitude

I defined Gratitude as a life orientation towards noticing and appreciating the positive in oneself, one's life, and the world (Wood et al., 2010). The Gratitude component consisted of the following statements and factor loadings.

Table 3.7*Gratitude Component Factor Loadings*

Survey Statements	Factor Loading
I felt thankful for the positive aspects of my life.	.863
I identified the things that truly bring me joy in life.	.855
I savored the good things in my life.	.849
I realized that I have much in life for which to be grateful.	.846
I looked for good things in life.	.843
I appreciated having people for whom to be grateful.	.842
I identified the individuals for whom I was grateful.	.829
I expressed my gratitude to the individuals to whom I am grateful.	.777
I felt grateful for my strengths.	.765
I identified the individuals who truly bring joy to my life.	.739
I focused on the positive aspects of my life as I was navigating the	.735

traumatic experience.

Post-traumatic Growth

The table below shows the factor loadings for overall post-traumatic growth, as well as separating post-traumatic growth toward the self and post-traumatic growth toward others.

Table 3.8

Unrotated and Rotated Factor Loadings for Post-Traumatic Growth, Separating into Self and Other Directed

Outcome	Overall PTG	PTG Self	PTG Other
I am able to do better things with my life.	.842	.748	
I can better appreciate each day.	.792	.611	
I am better able to accept the way things work out.	.778	.634	
I have a greater sense of closeness with others.	.775		.732
I am more likely to try to change things which need changing.	.771	.682	
I know better that I can handle difficulties.	.761	.743	
I have a greater appreciation for the value of my own life.	.758	.587	
I am more willing to express my emotions.	.753		.661
I put more effort into my relationships.	.748		.555
I learned a great deal about how wonderful people are.	.745		.823
I established a new path for my life.	.744	.738	
New opportunities are available that wouldn't have been otherwise.	.729	.592	
I discovered that I'm stronger than I thought I was.	.728	.640	
I better accept needing others.	.717		.784
I have more compassion for others.	.710	.577	
I developed new interests.	.707	.722	
I more clearly see that I can count on people in times of trouble.	.694		.782
I have a greater feeling of self-reliance.	.692	.813	

Table 3.8 (cont.)

Outcome	Overall PTG	PTG Self	PTG Other
I have a better understanding of spiritual matters.	.692		.525
I changed my priorities.	.691	.718	
I have a stronger religious faith.	.582		.659

Inferential Data Analysis Procedures

To describe and explain specific relationships between and among the constructs of the theory and among the KINDING Model constructs and post-traumatic growth, I conducted regression analysis. Simple regression analysis builds on the correlational association between two continuous variables and uses calculus to solve the least-squares-distance estimation to find the best-fitting line minimizing the distance between all observed points. As such, this analysis provides two critical points of information: (1) the strength of association (R) and its related amount of variance explained by the predictor (R^2); and (2) the amount of estimated linear relationship between predictor and outcome (B). For this analysis, I used the standard alpha level of .05 to argue for significance.

Additionally, to examine any direct and indirect relationships between multiple variables within the KINDING Model and the KINDING Model components and post-traumatic growth, I ran a path analysis. Path analysis is a type of multiple linear regression. Multiple regression analysis builds on the correlational association between continuous and dichotomous variables, and uses calculus to solve the least-squares-distance estimation to find the best-fitting line minimizing the distance between all observed points. The model for the analysis is given by the equation: (Post-traumatic

Growth) = $B_0 + B_1(\text{Kindness}) + B_2(\text{Imagination}) + B_3(\text{Nurturing Soul}) + \{\text{ETC}\} + E$.

As such, this analysis provides these critical points of information:

- (1) the strength of association (R) and its related amount of variance explained by the seven predictors in the model (R^2);
- (2) the estimated linear relationship between post-traumatic growth and each variable after taking the other measures into account (B_1 through B_7);

Multiple regression analysis supplies each estimate with an associated significance, to determine the extent to which the observed estimate could have occurred by chance. For this analysis, I use the standard alpha level of .05 to argue for significance.

For both the simple and multiple regression analyses, I reported the results using the standardized coefficients. Standardized coefficients represent the strength and direction of the relationship between the predictor and each outcome variable. Each standardized coefficient represents how much of a standard deviation for the outcome is impacted by a one standard deviation increase in the predictor is associated with an increase in each outcome component. Higher values indicate a stronger relationship. For these tables, I also reported the t -values and p values associated with the standardized coefficients. T -value measures the strength of evidence against the null hypothesis. Larger values indicate a stronger statistical relationship. P -values identify the statistical significance, with (for example) $P < .001$ indicating that there is strong evidence that the relationship was not due to chance.

Path analysis extends multiple regression by allowing the researcher to specify and test causal assumptions based on prior theory. Rather than including all of the

KINDING measures together, the model presented in Chapter 1 indicated a sequence, moving from Kindness to Imagination and so forth up the spiral to the final impact on post-traumatic growth. To test this model, the path analysis used each component of the KINDING model in order, adding the next predictor to the analysis sequentially. Thus, for example, Kindness and Imagination were used as predictors of Nurturing Soul; Kindness and Imagination and Nurturing Soul were used as predictors of Dreams, and so on up the model. I used tables and pictures to display the results of the analysis for an easier understanding.

Chapter Summary

This chapter outlined the methods employed to empirically investigate the relationships between positive self-leadership and post-traumatic growth among adults in higher education. I utilized a post-positivist theoretical framework and quantitative survey research design to address the overarching research question: "What, if any, relationships exist between positive self-leadership – fueled by positive emotions and positive cognitions and manifested through positive behaviors – and self-reported experiences of growth after the experience of a traumatic or highly adversarial event for adults engaged in higher education?" The final sample consisted of 489 participants ranging in age from 18 to 78 years (mean age 37), with 74% identifying as female and 69.9% as Caucasian/White. Participants reported experiencing an average of six different types of trauma, with family trauma being most common (67.5%), followed by emotional trauma (56.6%).

I collected data using the newly developed KINDING Scale of Positive Practices, which I created to measure the seven constructs of the KINDING Theory and their interrelationships. The final scale consisted of four main parts: background information, traumatic experiences checklist, positive practices used during trauma and currently, and the Post-Traumatic Growth Inventory.

To analyze the data, I ran a Factor Analysis with Varimax rotation to confirm the underlying construct structure of the KINDING components, with factor loadings ranging from .480 to .931 across the seven constructs (Kindness, Imagination, Nurturing Soul, Dreams, Implementation, Narrative, and Gratitude). The Post-Traumatic Growth Inventory was analyzed both as an overall construct and separated into self-directed and other-directed growth components. I conducted simple and multiple regression analyses to examine relationships between individual theory constructs and post-traumatic growth, and I conducted a path analysis to test the sequential, spiral nature of the KINDING model as theorized. This methodological approach allowed me to examine both individual constructs of the theory and their relationships, as well as their relationship to post-traumatic growth.

CHAPTER FOUR

RESULTS

Overview

This chapter presents the findings of the study derived from the data analysis conducted to examine the relationships outlined in the previous chapter. The results are organized systematically to address the research questions. Key findings related to the KINDING Model and its association with post-traumatic growth are highlighted, along with the significance of each pathway in the proposed model. Tables, figures, and statistical outputs are included to enhance clarity and support the interpretation of results. This chapter serves as the foundation for the discussion in the subsequent chapter, where these findings will be analyzed in relation to existing literature and theoretical implications.

Interconnections between Components of the KINDING Model

In this set of analyses, the purpose was to learn more about how the different components of the KINDING Model related to each other. While the data collected were all cross-sectional, the model suggested an analysis approach in which the elements on the lower levels could be thought to predict the elements on the upper levels. Therefore, this section is presented in order from the lowest to the highest element. The largest number of bivariate analysis results are given for Kindness, as it could relate to each of the other six components. The smallest number is given for Narrative, which is only positioned to predict one outcome, that of Gratitude.

Kindness

Kindness is the first construct of the theory. As described in Chapter One, it entails extending warmth and compassion to oneself in moments of pain, suffering or failure, rather than resorting to harsh self-judgment (Neff, 2003). Table 4.1 shows the results of each simple linear regression. Each row provides the results for different outcome variables, with Kindness as the predictor in each model. The standardized coefficients are provided to allow for comparison of the size of the relationship. Each standardized coefficient represents how much of a standard deviation for each outcome is impacted by one standard deviation increase in Kindness. Higher values indicate a stronger relationship.

Table 4.1

The Relationships Between Kindness and Other KINDING Model Components

Outcome	Std. Coeff.	T value	P Value
Imagination	.599	14.97	<.001
Nurturing Soul	.628	15.73	<.001
Dreams	.336	7.24	<.001
Implementation	.370	8.07	<.001
Narrative	.295	6.27	<.001
Gratitude	.496	11.79	<.001

All relationships were positive and significant ($p < .001$) indicating that increases in Kindness related to increases in all KINDING components. Kindness had the strongest predictive relationship for Nurturing Soul and Imagination. Kindness was also strongly associated with Imagination and moderately to strongly associated with Gratitude. Kindness had the weakest, yet still a positive significant association, with Narrative.

These results support the idea that Kindness is a powerful driver of emotional, cognitive, and behavioral growth within the KINDING framework.

Imagination

Imagination is the second construct of the theory. As described in Chapter One, it is defined as the act and process of forming a mental image of something not present to the senses or never before wholly perceived in reality (Merriam-Webster, 2022). Table 4.2 provides information using Imagination as the predictor for each subsequent element of the KINDING model. This table is formatted in the same manner as Table 4.1.

Table 4.2

The Relationships Between Imagination and Other KINDING Model Components

Outcome	Std. Coeff.	T value	P Value
Nurturing Soul	.561	13.00	<.001
Dreams	.549	13.23	<.001
Implementation	.483	11.10	<.001
Narrative	.441	9.85	<.001
Gratitude	.552	13.43	<.001

All relationships were positive and statistically significant ($p < .001$), confirming that Imagination plays a crucial role in predicting all other KINDING components. Imagination had the strongest positive relationship with Nurturing Soul and the weakest relationship with Narrative. Imagination had strong positive relationship with Gratitude and Dreams. Overall, this analysis reinforced the idea that Imagination is a driving force behind growth within the KINDING framework.

Nurturing Soul

The third construct of the theory is Nurturing Soul, which as defined in Chapter One refers to an individual's capacity to engage in intentional self-care practices that promote personal growth and development. Table 4.3 provides information using Nurturing Soul as the predictor for each subsequent element of the KINDING model. This table is formatted in the same manner as Table 4.1.

Table 4.3

The Relationships Between Nurturing Soul and Other KINDING Model Components

Outcome	Std. Coeff.	T value	P Value
Dreams	.392	8.28	<.001
Implementation	.444	9.55	<.001
Narrative	.368	7.70	<.001
Gratitude	.594	14.48	<.001

All relationships were positively and statistically significant ($p < .001$), confirming that Nurturing Soul plays a key role in all the other KINDING components. Nurturing Soul had the strongest predictive relationship to Gratitude. Nurturing Soul significantly predicted Implementation and Dreams. Additionally, Nurturing Soul had a significant relationship with Narrative, yet weaker than relationships with all other components of the KINDING Model.

Dreams

The fourth construct of the theory is dreams. As explained in Chapter One, in this context, dreams represent deeply held aspirations and goals. Table 4.4 provides information using Dreams as the predictor for each subsequent element of the KINDING model. This table is formatted in the same manner as Table 4.1.

Table 4.4*The Relationships Between Dreams and Other KINDING Model Components*

Outcome	Std. Coeff.	T value	P Value
Implementation	.776	25.26	<.001
Narrative	.342	7.43	<.001
Gratitude	.500	11.90	<.001

All relationships were positive and statistically significant ($p < .001$), confirming that Dreams play an essential role in other KINDING components. Dreams had the strongest relationship with Implementation. Dreams significantly contributed to Gratitude. Dreams also shaped Narrative, though this relationship was weaker compared to Implementation and Gratitude.

Implementation

Implementation is the fifth construct of the theory. As described in Chapter One, implementation refers to the process of putting a plan into action—monitoring progress, making adjustments, and evaluating outcomes (National Center on Supportive Learning Environments, 2022). Table 4.5 provides information using Implementation as the predictor for each subsequent element of the KINDING model. This table is formatted in the same manner as Table 4.1.

Table 4.5*The Relationships Between Implementation and Other KINDING Model Components*

Outcome	Std. Coeff.	T value	P Value
Narrative	.336	7.26	<.001
Gratitude	.42	9.55	<.001

All relationships were again positive and statistically significant ($p < .001$), meaning that Implementation meaningfully predicted both Narrative and Gratitude. Implementation had a stronger predictive relationship with Gratitude than with Narrative,

Narrative

The sixth construct of the theory is narrative. As described in Chapter One, narrative refers to the introspective process of constructing one's identity through the stories woven about oneself. This process involves integrating various life experiences both in the present moment (synchronically) and across time and space (diachronically) (McAdams, 2001). Table 4.6 provides information using Narrative as the predictor for each subsequent element of the KINDING model. This table is formatted in the same manner as Table 4.1.

Table 4.6

The Relationships Between Narrative and Other KINDING Model Components

Outcome	Std. Coeff.	T value	P Value
Gratitude	.400	9.03	<.001

Narrative was positively significantly related to Gratitude.

Relationships Between KINDING Model Components and Post-Traumatic Growth

The KINDING Model describes the process of growth from trauma leading to post-traumatic growth as fueled by positive emotions, cognitions, and behaviors, therefore I was interested in understanding the relationships between the KINDING Model components and post-traumatic growth. First, I examined the relationship between KINDING components and overall post-traumatic growth before separating the analysis

into post- traumatic growth toward the self and post-traumatic growth toward others. Then, I assessed the bivariate relationships between each component and the growth measure to understand their individual contributions

Overall Post-Traumatic Growth

Table 4.7 below displays the relationship between the KINDING Model components and overall post-traumatic growth.

Table 4.7

The Relationships Between KINDING Model Components and Overall Post-Traumatic Growth

Outcome	Std. Coeff.	T value	P Value
Kindness	.263	4.98	<.001
Imagination	.526	11.35	<.001
Nurturing Soul	.352	6.71	<.001
Dreams	.578	13.10	<.001
Implementation	.485	10.25	<.001
Narrative	.453	9.37	<.001
Gratitude	.474	9.99	<.001

All components of the KINDING Model had a positive and significant relationship with post-traumatic growth. Dreams and Imagination had the strongest relationship with post-traumatic growth, while Kindness had the weakest relationship.

Post-Traumatic Growth Directed at Self Compared to Others

Since the post-traumatic growth scale was divided into two distinct measures, it was important to examine whether the overall relationships shifted when the outcome was self-directed versus other-directed. Table 4.8 compares the relationship between the

KINDING Model components and post-traumatic growth directed toward the self vs post-traumatic growth directed toward others.

Table 4.8

Comparing The Relationships Between KINDING Model Components and Post-Traumatic Growth for Self vs. Others

Outcome	Impact on Post-Traumatic Growth Directed Toward Self	Impact of Post-Traumatic Growth Directed Toward Others
Kindness	.118 (p<.001)	.267 (p<.001)
Imagination	.393 (p<.001)	.346 (p<.001)
Nurturing Soul	.205 (p<.001)	.296 (p<.001)
Dreams	.472 (p<.001)	.334 (p<.001)
Implementation	.402 (p<.001)	.274 (p<.001)
Narrative	.396 (p<.001)	.232 (p<.001)
Gratitude	.289 (p<.001)	.389 (p<.001)

Dreams and Implementation had the strongest influence on post-traumatic growth directed toward the self, while Kindness had the weakest, though significant, influence. Gratitude and Imagination were the strongest contributors to post-traumatic growth directed toward others, while Narrative has the weakest, though significant, influence.

Path Analysis of KINDING Model Relating to Post-Traumatic Growth

Post-traumatic growth refers to the positive psychological transformation that can arise from navigating highly challenging or traumatic experiences. The KINDING Model offers a structured framework for understanding this growth, emphasizing seven key elements: Kindness, Imagination, Nurturing Soul, Dreams, Implementation, Narrative, and Gratitude. I conducted path analysis to examine the interrelationships among these elements and their collective influence on post-traumatic growth and map the pathways through which the KINDING Model fosters growth following traumatic experiences.

Table 4.9 below shows the results of the path analysis of the KINDING Model predicting overall post-traumatic growth. This path analysis examines how different components of the KINDING Model contribute to Overall Post-Traumatic Growth. The table displays standardized coefficients between variables, showing the strength and direction of relationships. Rows represent predictor variables (e.g., Kindness, Imagination) while columns represent outcome variables (e.g., Nurturing Soul, PTG). Numbers represent standardized coefficients (how strongly one variable predicts another). Significance Levels are as follows: $p < .001$ (very strong relationship), $p < .01$ (moderate relationship), $p < .05$ (weaker but still significant relationship), no asterisk = not significant (suggests no meaningful direct effect). R-Squared (R-Sq) values show how much variance is explained by the model for each variable.

The path analysis of the KINDING Model predicting Post-Traumatic Growth revealed several key relationships among its components. Dreams and Imagination were the strongest direct predictors of post-traumatic growth. Kindness had a surprising negative direct effect on post-traumatic growth. Implementation did not strongly predict post-traumatic growth, though Dreams strongly drove Implementation. Both Narrative and Gratitude contributed to post-traumatic growth. Overall, post-traumatic growth was best supported by a combination of Imagination, Dreams, Narrative, and Gratitude, rather than Kindness or Action alone.

Table 4.9

Results of the Full Path Analysis of the KINDING Model Predicting Overall Post-Traumatic Growth

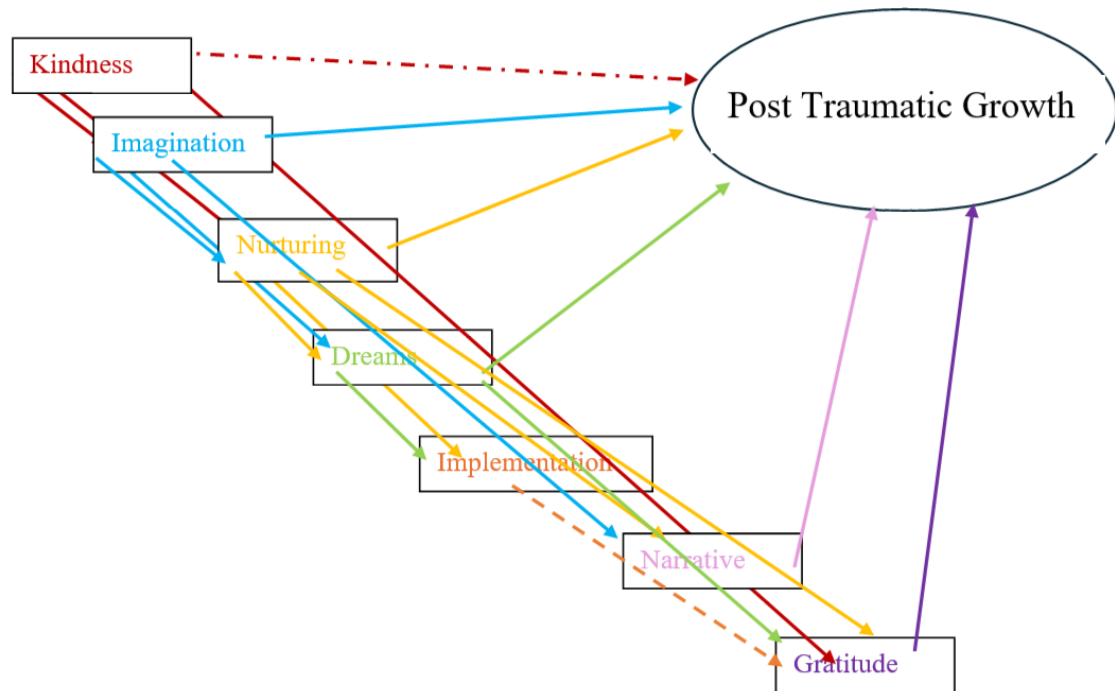
	Imaginat ion	Nurturing Soul	Dreams	Implement ation	Narrative	Gratitude	Post- Traumatic Growth
Kind- ness	.60***	.46***	-.09	.09	-.04	.16**	-.20**
Imagi- nation	--	.29***	.50***	-.06	.31***	.05	.27***
Nutur- ing Soul	--	--	.17**	.12**	.14*	.34***	.02
Dreams	--	--	--	.73***	.12	.40***	.31***
Imple- menta- tion	--	--	--	--	.06	-.18**	.08
Narra- tive	--	--	--	--	--	.17***	.19***
Grati- tude	--	--	--	--	--	--	.13*
R-Sq	.36***	.45***	.31***	.63***	.24***	.53***	.47***

* p<.05, ** p<.01, ***p<.001

Figure 4.1 below shows the model translated into a path diagram. A different color was used for each KINDING Model component. Solid arrows show a positive relationship between KINDING Model components and post-traumatic growth, whereas dashed arrows indicate a negative relationship.

Figure 4.1

Model translated to a Path Diagram



Kindness had a positive effect on Imagination, Nurturing Soul, and Gratitude; no effect on Dreams, Implementation, and Narrative; and a negative effect on post-traumatic growth. Imagination had a positive effect on Nurturing Soul, Dreams, and Narrative; no effect on Implementation and Gratitude; and a positive effect on post-traumatic growth. Nurturing Soul had a positive effect on Dreams, Implementation, Narrative, and Gratitude; as well as a positive effect on post-traumatic growth. Dreams had a positive effect on Implementation and Narrative; as well as a positive effect on post-traumatic growth. Implementation had no positive effect on any of the constructs, had a negative effect on Gratitude, and no effect on post-traumatic growth. Narrative had a positive

effect on Gratitude as well as on post-traumatic growth. Gratitude had a positive effect on post-traumatic growth.

Additionally, I calculated the indirect effect size for each KINDING construct.

Table 4.10 below shows the indirect and direct effect sizes between the KINDING Model components and post-traumatic growth.

Table 4.10

Indirect and Direct Effect Sizes Between KINDING Model Components and Post-Traumatic Growth

Theory Constructs	Indirect Effect Size	Direct Effect Size
Implementation	- .012	.08
Narrative	.022	.19
Dreams	.133	.31
Nurturing Soul	.133	.02
Kindness	.164	-.20
Imagination	.314	.27

Implementation and Narrative had a very small indirect effects on post-traumatic growth, particularly compared to their direct effects. Dreams and Nurturing Soul had a modest indirect effect on post-traumatic growth. While the indirect effects were the same size, for Dreams it was a third the size of the direct effect, while for Nurturing Soul, it was more than six times larger than the direct effect. Kindness had a moderate indirect effect as well. Imagination had a large indirect effect, indicating that it worked positively

through other constructs to predict post-traumatic growth, in addition to also acting directly on it.

Chapter Summary

This chapter presented the empirical findings examining the relationships between the seven components of the KINDING Model and their associations with post-traumatic growth. The analysis revealed that all KINDING components were positively and significantly correlated with each other, supporting the interconnected nature of the theoretical framework. Kindness demonstrated the strongest predictive relationships with Nurturing Soul (.628) and Imagination (.599), while showing weaker but significant associations with Narrative (.295). Each subsequent component in the model showed significant positive relationships with those that followed. When examining relationships with overall post-traumatic growth, all seven components showed positive significant associations, with Dreams (.578) and Imagination (.526) demonstrating the strongest relationships, while Kindness showed the weakest relationship (.263). Interestingly, when post-traumatic growth was separated into self-directed versus other-directed growth, different patterns emerged: Dreams and Implementation most strongly influenced self-directed growth, while Gratitude and Imagination were strongest predictors of other-directed growth.

The path analysis, which tested the sequential nature of the KINDING Model as proposed in the theory, revealed complex direct and indirect relationships among the components in predicting post-traumatic growth. The full model explained 47% of the variance in post-traumatic growth, with Dreams (.31) and Imagination (.27) showing the

strongest direct positive effects. Surprisingly, Kindness demonstrated a significant negative direct effect (-.20) on post-traumatic growth, though it maintained strong positive indirect effects (.164) through other components, particularly through Imagination and Nurturing Soul. Implementation showed minimal direct impact on post-traumatic growth (.08). The analysis of indirect effects showed that Imagination had the largest indirect effect (.314), suggesting it works through multiple pathways to influence growth, while Kindness, despite its negative direct effect, contributed positively through indirect pathways. These findings suggest that post-traumatic growth is best supported by a combination of imagination, goal-setting, narrative reconstruction, and gratitude, with kindness serving as an important foundational element that enables other growth processes rather than directly producing growth outcomes.

CHAPTER FIVE

DISCUSSION

Overview

This chapter provides an in-depth discussion of the study's findings, situating them within the broader literature on post-traumatic growth. The discussion explores how the KINDING Model's core constructs – Kindness, Imagination, Nurturing Soul, Dreams, Implementation, Narrative, and Gratitude – contribute to the process of growth following trauma, shedding light on the dynamic interplay between positive emotions, cognitions, and behaviors. Additionally, this chapter examines the study's limitations, addressing demographic and methodological factors that may have influenced the results. Finally, directions for future research are outlined, highlighting opportunities to refine the model, expand its applicability across diverse populations, and further investigate its mechanisms as they relate to post-traumatic growth. By integrating these insights, this chapter aims to provide a comprehensive understanding of the implications and potential impact of the KINDING Model on both theory and practice.

Study Overview

The purpose of the study was to explore how engaging in positive emotions, cognitions, and behaviors within the framework of self-leadership after traumatic or highly adversarial events contributes to and enhances the process of post-traumatic growth. To provide a comprehensive description and explanation of this growth process, I developed the KINDING Theory of Human Growth Through Positive Self-Leadership.

This theory, which incorporates both descriptive and explanatory elements, emerged from personal experiences, observations, and an extensive review of literature on post-traumatic growth. Rooted in positive self-leadership, the theory illustrates how positive practices, grounded in positive emotions and cognitions, can facilitate growth following trauma. More specifically, it explains how experiencing positive emotions initiates an upward spiral, ultimately fostering positive cognitions and behaviors.

The KINDING Theory consists of seven fundamental constructs: kindness, imagination, nurturing the soul, dreams (aspirations/goals), implementation, narrative, and gratitude. These constructs become active and meaningful through intentional engagement in positive practices associated with each one. For example, self-kindness is expressed through acts of self-love, while imagination is manifested by envisioning a hopeful future. The experience of each construct generates positive outcomes (e.g., kindness uplifts), which, in turn, foster subsequent positive emotions and thoughts, creating an upward spiral of growth. My hypothesis suggests that when these constructs are integrated, they empower individuals to lead themselves in a positive direction following a traumatic or highly challenging event, ultimately facilitating post-traumatic growth. The overarching research question of the study was *“What, if any, relationships exist between positive self-leadership – fueled by positive emotions and positive cognitions and manifested through positive behaviors – and self-reported experiences of growth after the experience of a traumatic or highly adversarial event for adults engaged in higher education?”*

Summary of Findings

To make the summary findings easier to understand, I will break it down into a discussion of each of the components of the KINDING model, summarizing their relationships both to other components and to post-traumatic growth.

Kindness

Kindness is the first construct of the theory. As described in Chapter One, kindness entails extending warmth and compassion to oneself in moments of pain, suffering or failure, rather than resorting to harsh self-judgment (Neff, 2003). To capture this concept, I coined the phrase “Your Kindness Uplifts”, emphasizing how kindness elevates one’s spirit by undoing negative emotions and nurturing psychological security. Kindness was a statistically significant predictor of all KINDING Model components. Notably, research by Fredrickson (2011) suggests that by practicing self-kindness, individuals can counteract negative emotions (Fredrickson, 2001), consequently creating an internal sense of psychological safety where emerging emotions or memories associated with the traumatic experience are not perceived as threats.

Kindness had the strongest relationship with Nurturing Soul among all components. This result suggests that individuals who engage in acts of Kindness are significantly more likely to nurture their soul, possibly through positive practices that foster emotional well-being and inner peace. Research by Lyubomirsky & Layous (2013) supports this, demonstrating that engaging in kindness-related activities enhances well-being. Kindness was also strongly associated with Imagination, suggesting that acts of self-kindness might stimulate creative and visionary thinking by fostering open-

mindedness, empathy-driven behaviors, and hopeful perspectives about the future. This aligns with Fredrickson's (2004) broaden-and-build theory, which explains that positive emotions—including those derived from kindness—expand cognitive flexibility, enabling individuals to think more creatively and embrace new perspectives.

Furthermore, Kindness was moderately to strongly associated with Gratitude, indicating that engaging in Kindness practices cultivates appreciation, making individuals more grateful for what they have. This relationship is well-documented in research by Stellar et al. (2017), who found that kindness, compassion, and gratitude are deeply interconnected, reinforcing prosocial behaviors and emotional fulfillment. Research highlights gratitude as one of the most influential strengths in enhancing well-being and life satisfaction (Park, Peterson, & Seligman, 2004). Sheldon and Lyubomirsky (2006) suggest that gratitude's strong connection to positive emotions stems from the way grateful individuals deeply savor positive experiences, making them less prone to negative emotions. This mindset may also counteract 'hedonic adaptation,' the tendency to take positive experiences for granted.

Kindness contributed positively to Implementation, suggesting that kindness-towards the self might drive motivation which in turn helps people take action and execute their goals. This is supported by Thrash et al. (2010), who found that inspiration, often linked to kindness and positive affect, enhances motivation and persistence, leading individuals to pursue their personal and professional aspirations. Kindness was moderately associated with Dreams suggesting that practicing self-kindness might inspire aspirations and a hopeful vision for the future, fueling long-term personal and

professional goals. Seligman (2011) explains how kindness, along with gratitude and optimism, plays a crucial role in personal growth and goal-setting, demonstrating that acts of kindness help individuals cultivate a forward-thinking mindset.

Lastly, Kindness had the weakest, yet still statistically significant, association with Narrative, suggesting that Kindness influences how individuals construct their life stories perhaps by shaping positive self-perceptions and integrating meaningful experiences. Research by Ruini & Mortara (2022) explored how kindness-based writing interventions enable individuals to reinterpret their life narratives in a more meaningful and constructive way, reinforcing self-perception and personal identity.

In conclusion, all relationships within the KINDING framework were statistically significant, confirming that Kindness is a powerful driver of emotional, cognitive, and behavioral growth. The strong predictive associations between Kindness and Nurturing Soul, Imagination, and Gratitude highlight its impact on emotional well-being, creativity, and appreciation for life's positive aspects. Additionally, its contributions to Implementation, Dreams, and Narrative suggest that Kindness is fundamental in shaping goal-directed behavior, fostering long-term visions, and developing meaningful self-perceptions.

Imagination

Imagination is the second construct of the theory. As described in Chapter One, Imagination is defined as the act and process of forming a mental image of something not present to the senses or never before wholly perceived in reality (Merriam-Webster, 2022). To encapsulate this idea, I coined the phrase "Your Imagination Inspires,"

emphasizing that envisioning a new self and future serves as a source of motivation to take action toward realizing that vision.

All relationships were statistically significant ($p < .001$), confirming that Imagination plays a crucial role in predicting all other KINDING components. This suggests that engaging in imaginative thinking fosters emotional and spiritual well-being, allowing individuals to nurture their inner world through creative and visionary insights (Nurturing Soul). Also, imaginative thinking might contribute to enhancing an individual's ability to recognize and appreciate positive experiences, possibly by helping them reframe challenges and see the good in life (Gratitude). Additionally, a strong imagination helps individuals envision their future, set aspirations, and create ambitious goals (Dreams), as well as translate ideas into actions (Implementation). Imagination plays an important role in shaping personal stories, self-perception, and meaning-making (Narrative). These results are supported by research suggesting that imagination broadens one's cognitive and emotional repertoire (Fredrickson, 2001).

Nurturing Soul

The third construct of the theory is Nurturing Soul, which as defined in Chapter One refers to an individual's capacity to engage in intentional self-care practices that promote personal growth and development. At this stage, the individual deepens the transformative inner work initiated earlier in the process. To capture this concept, I coined the phrase “Your Nurturing Soul Builds and Strengthens”, emphasizing that tending to various aspects of oneself—such as personality, abilities, and spirituality—fortifies personal resources and fosters growth.

Nurturing Soul had significant positive predictive relationships with all the KINDING components, suggesting that self-care practices deeply influence a person's ability to appreciate oneself and life (Gratitude), helps individuals take action and set meaningful aspirations (Implementation), contributes to shaping personal stories (Narrative). Research suggests that positive practices help cultivate inner resources (Fredrickson, 2001), enhancing emotional and spiritual resilience and ultimately contributing to overall well-being.

Dreams

The fourth construct of the theory is dreams. As explained in Chapter One, in this context, dreams represent deeply held aspirations and goals. As individuals grow emotionally and mentally stronger, they begin envisioning their future—reflecting on where they see themselves and mapping out the steps to achieve their desired outcomes. At this stage, they set goals across different areas of life and develop strategies to bring them to fruition. To encapsulate this idea, I coined the phrase "Your Dreams Empower," highlighting that envisioning and pursuing meaningful aspirations instills a sense of empowerment, motivating proactive action toward their realization.

Dreams had a significant positive predictive relationship with all subsequent elements of the KINDING Model. This suggests that when individuals have clear dreams and goals, they are significantly more likely to take action and turn their visions into reality (Implementation). In turn, individuals who pursue meaningful dreams/ aspirations tend to experience a greater sense of gratitude for the journey, opportunities, and progress they make along the way (Gratitude). Additionally, having and pursuing dreams/

aspirations influences how individuals construct and interpret their life stories (Narrative). Research suggests that goals are more than just tasks; they represent aspirations and ambitions that, while requiring effort, remain within reach (MacLeod, 2017; Oettingen, 2012). Their pursuit is widely acknowledged as essential to subjective well-being (Klinger, 1977; Klug & Maier, 2015), as they provide structure to life, direct action, and enhance motivation (Little, 1989; Seligman, 2011). Goal-setting has also played a significant role in clinical practice, helping individuals cultivate motivation and resilience (Wadsworth & Ford, 1983).

Implementation

Implementation is the fifth construct of the theory. As described in Chapter One, implementation refers to the process of putting a plan into action—monitoring progress, making adjustments, and evaluating outcomes (National Center on Supportive Learning Environments, 2022). Once goals are set, individuals move forward with execution to achieve their plans. Implementation leads to creation, as each step taken brings them closer to their desired outcomes. This process fosters a sense of empowerment by granting individuals control over their lives and allowing them to witness their progress. To encapsulate this idea, I coined the phrase "Your Implementation Creates," emphasizing that putting plans into action propels individuals toward realizing their dreams and shaping the life they aspire to build.

Implementation had the strongest predictive relationship with Gratitude, suggesting that individuals who actively implement their goals and ideas tend to experience greater gratitude. Taking action on one's aspirations and seeing progress may

cultivate a sense of appreciation for opportunities, achievements, and support received along the way. Implementation significantly influenced Narrative, suggesting that individuals who actively implement their ideas and goals are more likely to shape and refine their personal life stories. Action-oriented individuals may construct narratives that reflect achievement, perseverance, and growth. This reinforces the idea that personal growth and fulfillment come from actively pursuing goals rather than passively hoping for change. These findings are supported by research suggesting that the process of striving toward goals itself can be deeply rewarding, generating positive emotions such as excitement and energy (Emmons, 1986). Also, actively working toward goal attainment not only fuels motivation but also enhances self-efficacy and competence (Bandura, 1977). Furthermore, achieving goals fosters a sense of mastery and accomplishment—key components of well-being (Seligman, 2011). These positive emotions create a reinforcing cycle, strengthening resilience in the face of challenges and increasing engagement in further meaningful pursuits (Bandura, 2009).

Narrative

The sixth construct of the theory is narrative. As described in Chapter One, Narrative refers to the introspective process of constructing one's identity through the stories woven about oneself. This process involves integrating various life experiences both in the present moment (synchronically) and across time and space (diachronically) (McAdams, 2001). At this stage, individuals reflect on their journey from the traumatic event to the present, examining the progress they have made and the ways in which they have evolved. This self-reflection allows them to reinterpret and redefine their life story.

A new narrative emerges as past experiences, lessons learned, and insights gained from navigating adversity are interwoven with the internal and external transformations that have taken place. These integrated elements help individuals chart a new life trajectory, fostering a sense of meaning and coherence. This transformative process also generates new cognitive schemas to accommodate experiential knowledge, allowing individuals to move beyond merely experiencing life to actively creating it. To encapsulate this idea, I coined the phrase "Your Narrative Integrates," highlighting that integrating together lived experiences leads to the creation of a renewed life story. This phrase also emphasizes the concept that the narrative that one chooses shapes how life experiences are integrated, ultimately influencing one's character and overall quality of life.

Narrative significantly predicted Gratitude. Individuals who actively construct and reflect on their personal narratives are more likely to develop a sense of appreciation and gratitude for their experiences. This suggests that storytelling, meaning-making, and self-reflection help individuals recognize and appreciate positive aspects of their lives. Indeed, research suggests that the ability to derive meaning from traumatic or adversarial experiences and integrate them into one's life narrative can foster a heightened appreciation for life (Lambert et al., 2009; Wood et al., 2010), contribute to the development of wisdom (Ardelt, 2005; Glück & Bluck, 2013), and facilitate posttraumatic growth (Linley & Joseph, 2004; Tedeschi & Calhoun, 2004). In turn, gratitude is intricately linked to processes of life reflection and benefit finding (Bowman, 2007; Fredrickson et al., 2003; Lambert et al., 2009). The retrospective reinterpretation

and integration of adverse experiences have also been identified as integral to the cultivation of wisdom (Ardelt, 2005; Glück & Bluck, 2013; Kramer, 2000).

Gratitude

The seventh construct of the theory is gratitude, defined as a life orientation towards noticing and appreciating the positive in oneself, one's life, and the world (Wood et al., 2010). The individual perceives the experience, no matter how painful, as an opportunity for personal growth. While the individual does not necessarily express gratitude for the traumatic event itself, the individual is thankful for what she/he *did* with the experience. In essence, the individual is thankful for using the experience as a catalyst for personal growth, feeling grateful for her/his own capabilities and empowered to turn things around and derive benefit from the experience. Additionally, the individual feels thankful for the lessons learned, insights gained, opportunities identified, relationships deepened, or new relationships formed. I coined the expression "Your Gratitude Revives" to illustrate that acknowledging life experiences with gratitude and taking control of how those experiences shape the individual infuse her/him with hope, optimism, and self-belief – these positive emotions and cognitions give rise to a sense of a new life being born, providing the individual with renewed energy.

All elements of the KINDING Model had a positive predictive relationship to Gratitude, with the highest predictive relationships being with Nurturing Soul and Imagination. Gratitude had the strongest relationship with Nurturing Soul, indicating that practices of self-care and emotional well-being significantly contribute to an individual's capacity for self-appreciation and overall life appreciation. Furthermore, Imagination

exhibited a strong influence on Gratitude, suggesting that imaginative cognition may enhance an individual's ability to perceive and value positive experiences—potentially through reframing challenges and fostering a more optimistic interpretation of life events. These findings align with existing research demonstrating that individuals who cultivate a grateful perspective are more likely to experience heightened positive emotions (McCullough et al., 2002) and to engage in prosocial behaviors (Wood et al., 2010). Moreover, consistent with Fredrickson's broaden-and-build theory of positive emotions (2004), gratitude, as a positive affective state, serves to broaden an individual's momentary thought-action repertoires and supports the accumulation of enduring personal resources across time.

Relationships Between KINDING Model Components and Post-Traumatic Growth

All components of the KINDING Model had a positive and significant relationship with post-traumatic growth. Dreams and Imagination had the strongest relationship with post-traumatic growth, while Kindness had the weakest relationship.

Dreams had the strongest impact on post-traumatic growth. This suggests that having aspirations, long-term goals, and a vision for the future plays a crucial role in post-traumatic growth. Goal-setting and the ability to imagine a better future may serve as a powerful mechanism for recovery and transformation after trauma. Tied to the concept of goal-setting is goal pursuit, which refers to the Implementation construct. Implementation played a key role in post-traumatic growth, suggesting that individuals who actively implement changes in their lives, take initiative, and put plans into action are more likely to experience personal growth after traumatic experiences.

Transformation is not just about dreaming—it requires action. According to research, goals are personally significant aspirations, ambitions, or objectives that, while requiring effort for realization, remain realistically attainable (MacLeod, 2017; Oettingen, 2012). It is widely recognized that the establishment and pursuit of personal goals are fundamental to subjective well-being (Klinger, 1977; Klug & Maier, 2015). Goal-setting provides structure and direction in life, serving as a motivational force that drives engagement and purposeful action (Little, 1989; Seligman, 2011). The pursuit of goals is inherently rewarding, as positive anticipatory emotions such as energy and excitement intensify as individuals progress toward their objectives (Emmons, 1986). Achieving goals fosters a sense of mastery and attainment, which are core elements in various models of well-being (e.g., Seligman, 2011). Furthermore, these rewarding experiences can create a positive feedback loop by increasing perseverance in the face of challenges and reinforcing engagement in adaptive and fulfilling behaviors (Bandura, 2009).

Given the psychological benefits associated with goal pursuit, individual differences in goal-setting tendencies have been linked to mental health outcomes (Wiese, 2007). Early research demonstrated that happiness correlates with a higher number of actively pursued goals, a phenomenon referred to as "goal fluency" (Wessman & Ricks, 1966). Additionally, setting specific and concrete goals has been associated with greater positive affect and a stronger sense of purpose in life (Dickson & Moberly, 2013; Freund & Baltes, 2002). Moreover, individuals who pursue intrinsically rewarding and autonomously motivated goals tend to exhibit fewer depressive symptoms and greater overall well-being (Sheldon & Elliot, 1999; Winch et al., 2015). The presence of

meaningful goals across multiple life domains has also been identified as a protective factor against depression (Champion & Power, 1995). These findings underscore the crucial role of goal setting in psychological well-being, suggesting that fostering meaningful and attainable personal aspirations may serve as a key mechanism for enhancing life satisfaction and mental health.

Imagination was also a major contributor to post-traumatic growth. This suggests that the ability to think creatively, visualize possibilities, and generate new perspectives helps individuals recover and grow from trauma. Engaging in imaginative thinking may allow individuals to reframe their experiences and envision new opportunities for self-growth. Imagination is a fundamental characteristic of human cognition, playing a critical role in shaping our understanding of the world. Without it, individuals would struggle to interpret sensory experiences or derive meaning from life events (Abraham & Bubic, 2015; Johnson, 2013). Imagination facilitates future planning, enables flexible consideration of past experiences and memories (Zheng et al., 2014), fosters innovative thinking (Gaither et al., 2015), modulates emotional responses (Finnbogadóttir & Berntsen, 2014), and supports the rehabilitation of learning and memory functions (Grilli & McFarland, 2011). Given its integral role in daily life, imagination engages multiple brain regions, spanning all cerebral lobes and hemispheres (Fox et al., 2015).

Building on theoretical and clinical research on trauma and recovery (Lahad, 2017, 2019), scholars have recognized that while imagination can serve as a source of distress—intensifying suffering during experiences of loss, trauma, and severe mental health conditions such as depression and schizophrenia—it can also function as a source

of hope, optimism, and psychological comfort in moments of adversity. The brain constructs internal models of the external world, allowing individuals not only to comprehend present experiences but also to reimagine past events and envision future or entirely fictional scenarios. Research by Zeidman and Maguire (2016) has demonstrated that cognitive functions such as imagination, perception, and episodic memory all engage the anterior hippocampus, a key structure within the limbic system responsible for memory and emotional regulation.

Inherently linked to imagination is creativity, which involves the rapid formation and reorganization of mental representations to generate novel ideas and perspectives (Rubin et al., 2014). Creativity has been classified into four dimensions: (a) originality, (b) flexibility, (c) fluency, and (d) elaboration, or the ability to process details (Duff et al., 2013; Torrance, 1974; Cramond et al., 2005). Meta-analytic findings on the interplay between emotion and creativity indicate that positive emotions, such as happiness, enhance creative thinking, whereas anxiety and fear are associated with diminished creative capacity across all levels (Baas et al., 2008). Creativity is both a product and a driver of emotions—it can be shaped by emotional states, stress, and trauma while also serving as a protective mechanism that fosters resilience (Duan et al., 2019; Liang et al., 2021).

The restoration of an individual's imaginative capacity can be considered a fundamental aspect of healing from traumatic stress (Malchiodi, 2020). Van der Kolk (2014) underscores the critical role of imagination in trauma treatment, emphasizing its capacity to shape one's lived experience. Van der Kolk asserts that imagination gives us

the opportunity to envision new possibilities—it is an essential launchpad for making our hopes come true. It fires our creativity, relieves our boredom, alleviates our pain, enhances our pleasure, and enriches our most intimate relationships. Desetta and Wolin (2000) further proposed that imagination and creative activities function as theoretical safe spaces during periods of stress, providing individuals with psychological refuge. Empirical research has also substantiated the role of creativity in fostering emotional well-being, particularly in facilitating emotional expression (Gibbs & Green, 2008) and enhancing self-awareness (Sommer, Ward, & Scofield, 2010; Swank, 2012). Additionally, creative engagement has been linked to increased self-esteem and the development of effective coping mechanisms (Prescott et al., 2008). Contemporary trauma-focused therapeutic approaches incorporate imagination as an essential tool in trauma recovery. Many evidence-based therapeutic modalities, whether explicitly or implicitly, utilize imagination as a means of processing traumatic experiences and fostering emotional resilience (Holmes, 2014; Lahad et al., 2016; Rubinstein et al., 2020).

Gratitude significantly contributed to post-traumatic growth, suggesting that individuals who practice gratitude—appreciating their experiences, relationships, and growth—tend to experience greater post-traumatic growth. Gratitude may help reframe traumatic experiences as part of a larger narrative of resilience and appreciation for life. According to research, gratitude encompasses an awareness and appreciation of the value and significance of events, behaviors, or experiences, as well as an emotional connection to them (Adler & Fagley, 2005). Adler and Fagley (2005) define gratitude as the process of "noticing and acknowledging the value and meaning of something—an event,

behavior, or object—and experiencing a positive emotional connection to it." As a multidimensional construct, gratitude encompasses cognitive, emotional, and behavioral components (McCullough et al., 2001; Watkins et al., 2003; Adler & Fagley, 2005) and is an attribution-dependent characteristic (Weiner, 1985) that enables individuals to recognize the benefits derived from others and various life experiences (Emmons, 2007). Moreover, gratitude involves an appreciation of both interpersonal relationships and everyday life experiences, as well as the capacity to recall and derive meaning from past positive events (Watkins et al., 2003). Gratitude is conceptualized as both a state and a trait (Skrzelinska & Ferreira, 2020). State gratitude is a transient affective-cognitive condition that arises from the appraisal of a positive outcome and the recognition of its source. Trait gratitude, in contrast, reflects a broader life orientation characterized by a consistent tendency to notice and appreciate positive aspects of one's environment. Both state and trait gratitude have been associated with physical and mental health benefits (Emmons et al., 2019) and are significant predictors of overall well-being (Kardas et al., 2019).

Individuals who adopt a grateful perspective tend to experience increased positive emotions (McCullough et al., 2002) and engage in prosocial behaviors (Wood et al., 2010). Gratitude has been linked to greater happiness, optimism, and enhanced satisfaction in both relationships and life (Noh & Shin, 2008). According to the broaden-and-build theory of positive emotions (Fredrickson, 2004), gratitude, as a positive affective state, expands an individual's thought-action repertoires and facilitates the development of enduring personal resources over time. These cumulative effects enhance

adaptive functioning and promote optimal experiences (McCullough, Emmons, & Tsang, 2002). In the context of trauma, gratitude enables individuals to form positive cognitive appraisals of traumatic cues and aids in reestablishing a coherent sense of meaning in the world following adversity (Wu, Zhou, Liu, & Chen, 2014). Moreover, individuals with higher levels of gratitude are more likely to appreciate everyday experiences and demonstrate resilience in the face of adversity, effectively coping with traumatic events (Fredrickson, 2004; McCullough et al., 2002).

Given its association with emotional regulation and adaptive coping, gratitude may contribute to posttraumatic growth by facilitating positive cognitive reappraisal while mitigating the adverse effects of risk and trauma-related factors (Kim & Bae, 2019; Lin et al., 2022; Vieselmeyer et al., 2017). Research suggests that individuals exposed to various forms of trauma may experience an increase in the character strength of gratitude, which in turn is positively associated with post-traumatic growth (Peterson, et al., 2008). Indeed, gratitude has been recognized as a key component of resilience and post-traumatic growth (Ruini & Vescovelli, 2013). The experience of gratitude amid trauma may hold particular significance, as it not only fosters inspiration and transformation but also provides meaning in life by enabling individuals to interpret their existence as a gift. From an evolutionary perspective, gratitude may contribute to long-term psychological resilience by enhancing open-mindedness and cognitive flexibility, allowing individuals to recognize and capitalize on opportunities for growth and adaptation (Johnson & Fredrickson, 2005). Furthermore, research has demonstrated that gratitude promotes deliberate rumination, a cognitive process that has been linked to post-traumatic growth

(Wood et al., 2010; Zhou & Wu, 2015; Kim & Lee, 2016). A meta-analytic study identified gratitude as a significant predictor of post-traumatic growth (Jang & Kim, 2017).

Additional research suggests that gratitude moderates the impact of posttraumatic stress on post-traumatic growth (Vieselmeyer et al., 2017; Leppma et al., 2018).

Individuals with higher levels of gratitude are more likely to recognize and appreciate daily experiences (McCullough et al., 2002), which, in turn, facilitates adaptive coping mechanisms (Fredrickson, 2004). Such individuals tend to experience gratitude more frequently and across a wider range of circumstances compared to those with lower levels of gratitude, reinforcing its role as a resilience-enhancing factor. Further empirical support for the role of gratitude in post-traumatic growth was provided by Zhou, An, Wu, Chen, and Long (2014a), who examined the associations between gratitude, social support, and post-traumatic growth following the Wenchuan earthquake. Their findings identified gratitude as a significant predictor of post-traumatic growth. Additionally, a qualitative study on patients recovering from myocardial infarction found that those who reported positive psychological changes also expressed a heightened appreciation for life and health (Hassani et al., 2009). Similarly, Vernon et al. (2009) reported a significant positive relationship between gratitude and post-traumatic growth in a sample of women with trauma histories.

Individuals with higher levels of post-traumatic growth are more likely to experience gratitude (Chun & Lee, 2008). Trauma survivors who experience posttraumatic growth often express gratitude toward the world and others which may

serve as a protective factor in their post-trauma adjustment (Leung, 2011). One possible explanation for this phenomenon is that individuals who report post-traumatic growth tend to develop more adaptive cognitive appraisals, including a positive perspective on the self, others, and the world. These constructive appraisals facilitate the formation of strong interpersonal relationships and access to greater social support, which, in turn, elicits feelings of gratitude (Wood, Maltby, Stewart, Linley, & Joseph, 2008). Beyond its intrapersonal benefits, gratitude has also been shown to strengthen interpersonal relationships (Algoe, 2005). By fostering positive social interactions, gratitude can enhance access to social support, mitigate negative emotional states, and ultimately contribute to the emergence of post-traumatic growth.

Narrative was an essential factor in post-traumatic growth. This suggests that individuals who reconstruct their personal stories and integrate their traumatic experiences into a coherent life narrative are more likely to grow from their experiences. Meaning-making through storytelling helps individuals make sense of their trauma, redefine their identity, and develop a sense of purpose. According to research, individuals do not passively absorb an objective external reality; rather, they actively construct meaning from their lived experiences (Neimeyer, 2001b). Narrative theorists propose that humans interpret and make sense of their lives by crafting coherent and credible accounts of significant events, thereby shaping their personal and social identities (Howard, 1989; Polkinghorne, 1988).

A traumatic event introduces a profound disruption to an individual's life narrative, challenging its coherence, destabilizing one's sense of identity, and

precipitating a "crisis of meaning" (Hagman, 2001). Such an experience undermines fundamental assumptions about the nature of the world and one's role within it, necessitating a process of narrative reconstruction for trauma survivors. Trauma also presents an opportunity for individuals to engage in a meaningful revision of their life narratives (McAdams, 1993; Neimeyer, 2001b), redefine their identities and social roles (Hagman, 2001; Neimeyer, 2001b), and develop more resilient cognitive frameworks that are less susceptible to future disruptions (Janoff-Bulman, 1992). This process can foster personal transformation and post-traumatic growth (Calhoun & Tedeschi, 2006; Tedeschi et al., 1998). According to Calhoun and Tedeschi's (2006) PTG model, such growth necessitates deliberate rumination, wherein individuals actively reconstruct their cognitive schemas and life narratives to integrate the traumatic experience in a way that facilitates adaptation and psychological resilience.

Extensive research has demonstrated that individuals facing a wide range of adverse life events, from serious illnesses such as cancer (Taylor et al., 1984) to profound historical traumas like the Holocaust (Frankl, 1959), often feel a compelling need to derive meaning from their experiences. A life narrative disrupted by loss must be reconstructed, establishing a new sense of continuity that meaningfully connects the past to the future (Neimeyer, 2001b, p. 263). Janoff-Bulman (1992) employed the metaphor of "shattered assumptions" to describe the profound cognitive impact of trauma, arguing that individuals possess three fundamental cognitive schemas that trauma can challenge or even dismantle: (1) the belief that the world is meaningful and predictable, (2) the belief in the world's benevolence, and (3) the belief in the self's worth and competence. As a

result, a central task for trauma survivors is the reconstruction of a functional assumptive world—one that acknowledges their victimization while preserving a relatively positive and non-threatening perspective on the self and the world (Janoff-Bulman, 1992, 2006).

A substantial body of theoretical work on narrative and meaning-making processes underscores the importance of supporting survivors in reconstructing their personal narratives following trauma. This reconstruction is essential for integrating the traumatic experience into one's identity and life story (Calhoun & Tedeschi, 2006; Neimeyer, 2001a; Sewell, 1997). To facilitate this process, various therapeutic approaches have been developed, including cognitive processing therapy (Resick & Schnicke, 1993), logotherapy (Guttmann, 1996), and narrative therapy (Freedman & Combs, 1996; Monk et al., 1997; White & Epston, 1990), all of which aim to assist individuals in making meaning from their experiences and restoring coherence to their life narratives.

Research has shown that trauma-focused therapy is linked to increased narrative coherence (Briere & Scott, 2006), which, in turn, is associated with reductions in post-traumatic stress symptoms (Amir et al., 1998), positive trauma recovery outcomes (Pennebaker, 1993), and overall improvements in well-being (Stanton et al., 2002). Additionally, several well-controlled studies (e.g., Pennebaker, 1997; Smyth, 1998) have demonstrated that therapeutic journal writing facilitates meaning-making in the aftermath of adversity while promoting both physical and psychological health. Furthermore, Ullrich and Lutgendorf (2002) found that individuals who engaged in expressive writing

that integrated both emotional and cognitive processing of trauma exhibited significant increases in post-traumatic growth.

Nurturing the self through self-care significantly contributed to post-traumatic growth, suggesting that engaging in practices that nurture the soul, such as meditation, spirituality, etc. enhance resilience and growth after trauma. Self-care, in its most fundamental sense, refers to the intentional practice of attending to one's own physical, psychological, and emotional well-being. It encompasses a range of self-initiated activities, behaviors, and processes aimed at alleviating psychological distress (e.g., reducing stress and depression), enhancing resilience as a preventive measure (e.g., mitigating compassion fatigue), and fostering an overall sense of well-being (Jiang et al., 2021; Lee & Miller, 2013; Posluns & Gall, 2020). The literature consistently conceptualizes self-care as a multidimensional construct, emphasizing that effective self-care involves implementing strategies across various domains of life (Jiang et al., 2021; Lee & Miller, 2013; Posluns & Gall, 2020). For instance, physical self-care (e.g., adequate amount of sleep, physical movements, etc.) promotes bodily well-being, psychological self-care (e.g., engaging in journaling) fosters self-awareness and introspection, emotional self-care (e.g., spending time with loved ones) enhances and sustains positive emotions, and spiritual self-care (e.g., practicing meditation) focuses on finding meaning and purpose in life. As a dynamic process, self-care is adaptable, allowing individuals to modify the frequency and type of self-care practices in response to varying situational demands and personal needs.

Empirical research supports the relationship between self-care and mental health outcomes. For example, in a study of college students, lower levels of self-care were associated with higher symptoms of anxiety and depression (Tam et al., 2021). Moreover, multiple studies have documented positive associations between self-care practices and psychological well-being, including overall life satisfaction and general well-being (Richards et al., 2010). The observed associations between self-care and mental health have led researchers to interpret self-care as a protective factor that contributes to improved psychological functioning. The predominant theoretical perspective suggests a directional relationship in which increased engagement in self-care leads to enhanced mental health and reduced psychological distress (Posluns & Gall, 2020). This proposed causal pathway underscores the role of self-care as a proactive and beneficial strategy for maintaining psychological resilience and promoting overall well-being.

Among all the KINDING components, Kindness had the weakest relationship with post-traumatic growth, though it remains statistically significant. This suggests that while being kind to oneself is an important factor in post-traumatic growth, it is not as direct of a driver as the other components. However, kindness may play a supportive role, helping individuals build a positive relationship with the self and foster self-compassion during their recovery process. According to Kristin Neff, self-compassion, characterized by a self-caring and compassionate attitude when confronted with suffering (Neff, 2003a, 2003b), comprises three fundamental components: self-kindness (as opposed to self-judgment), common humanity (as opposed to isolation), and mindfulness (as opposed to over-identification). Self-kindness involves adopting an understanding and nurturing

stance toward oneself rather than engaging in self-criticism. It entails responding to personal inadequacies and challenges with gentleness and care. Common humanity reflects the recognition that failure, mistakes, and difficulties are inherent aspects of the human experience, fostering a sense of connection rather than isolation. Mindfulness refers to maintaining a balanced awareness of present-moment experiences, ensuring that negative thoughts and emotions are neither exaggerated nor dismissed.

Extensive research has explored self-compassion as a psychological resource in coping with stressors (Neff & McGehee, 2010; Vettese et al., 2011). Meta-analyses have demonstrated that self-compassion is significantly associated with enhanced cognitive and psychological well-being (Zessin et al., 2015) and a lower incidence of psychopathology (MacBeth & Gumley, 2012). Furthermore, experimental studies suggest that self-compassion serves as a protective factor against negative emotional responses to stressful events and fosters motivation for self-improvement (Breines & Chen, 2012; Leary et al., 2007). Individuals with higher levels of self-compassion tend to interpret negative experiences in a less catastrophic manner (Allen & Leary, 2010) and demonstrate greater emotional regulation when confronted with adversity (Heffernan et al., 2010; Neff, 2003a). Studies examining the relationship between self-compassion and trauma survivorship suggest that self-compassion serves as a protective factor in trauma adaptation. Empirical evidence indicates that self-compassion is associated with lower levels of posttraumatic stress symptoms among veterans (Dahm et al., 2015) as well as other trauma-exposed populations, including individuals who have experienced physical

abuse, sexual assault, and natural disasters (Dahm et al., 2015; Seligowski et al., 2015; Thompson & Waltz, 2008; Zeller et al., 2015).

Given its protective effects against posttraumatic stress, it is plausible that self-compassion may also be positively associated with post-traumatic growth. However, while post-traumatic growth and post-traumatic stress can coexist (Tedeschi & Calhoun, 2004; Wright, 1989), they contribute uniquely to psychological health outcomes (Wang et al., 2015). The relationship between self-compassion and post-traumatic growth may be mediated by the cognitive processing of trauma and crises. Unlike self-evaluation or social comparison, self-compassion is not contingent on external validation but is instead grounded in the belief that all individuals are deserving of compassion and understanding (Neff & Vonk, 2009). Due to its unconditional nature, self-compassion fosters emotional safety, enabling individuals to perceive both themselves and reality with greater clarity (Allen & Leary, 2010; Neff et al., 2007), which in turn facilitates cognitive processing of adverse experiences.

Additionally, individuals with higher levels of self-compassion tend to demonstrate higher integrative self-knowledge—an adaptive ability to synthesize past and present experiences to guide future outcomes (Ghorbani et al., 2012)—as well as lower levels of self-disengagement and experiential avoidance (Sirois et al., 2015; Thompson & Waltz, 2008). Furthermore, other findings suggest that self-compassionate individuals are more likely to engage in positive cognitive appraisals of their experiences, which in turn contribute to improved emotional outcomes (Allen & Leary, 2014). These

findings collectively support the notion that self-compassion may facilitate post-traumatic growth among trauma and crisis survivors by promoting adaptive cognitive processing.

Furthermore, self-compassionate individuals are more likely to recognize suffering as an inherent aspect of the shared human experience (common humanity), which may increase their willingness to disclose negative experiences to supportive others and gain insight through cognitive processing. These processes are essential for fostering post-traumatic growth (Tedeschi & Calhoun, 2004). With an attitude of unconditional understanding and care (self-kindness), self-compassionate individuals are also more inclined to accept that their current goals may no longer align with the realities imposed by crises. This adaptive process, in turn, facilitates the development of new life goals and their integration with one's lived experience (Tedeschi & Calhoun, 2004).

Empirical research supports the association between self-compassion and adaptive cognitive processing. Self-compassionate individuals may be more likely to experience post-traumatic growth due to their enhanced ability to accept the occurrence of crises, reinterpret negative experiences in a constructive manner and derive meaning from adversity (Phillips & Ferguson, 2012). The association between self-compassion and adaptive cognitive processing is well-documented in the literature (Ghorbani et al., 2012; Martin et al., 2011; Phillips & Ferguson, 2012; Sirois et al., 2015; Thompson & Waltz, 2008), further supporting the role of self-compassion in facilitating resilience and psychological well-being following trauma. However, to date, few studies have examined the direct relationship between self-compassion and post-traumatic growth. One study investigating this relationship in a sample of 601 college students who had experienced at

least one crisis or adverse life event found no significant direct association between self-compassion and post-traumatic growth (Zeligman et al., 2017). However, structural equation modeling revealed significant indirect effects of self-compassion on post-traumatic growth through positive cognitive reframing. Despite these findings, the extent to which self-compassion directly contributes to post-traumatic growth remains largely unexplored, representing a critical gap in the trauma literature.

Path Analysis of KINDING Model Relating to Post-Traumatic Growth

To examine the interrelationships among the constructs of the KINDING Model and their collective influence on post-traumatic growth and map the pathways through which the KINDING Model fosters growth following traumatic experiences I conducted a path analysis. The path analysis of the KINDING Model predicting Post-Traumatic Growth revealed several key relationships among its components. Dreams and Imagination were the strongest direct predictors of post-traumatic growth, emphasizing the importance of aspirations and creative thinking in personal growth. Kindness had a surprising negative direct effect on post-traumatic growth after taking other components into account, suggesting that while Kindness fostered Imagination and Nurturing Soul to have a positive indirect effect on post-traumatic growth, increased levels of Kindness after taking these factors into account was associated with lower levels of growth. This type of result may indicate a threshold level of Kindness, beyond which post-traumatic growth may actually be hindered. Implementation did not strongly predict post-traumatic growth, indicating that action alone is insufficient for growth, though Dreams strongly drove Implementation, suggesting that goal-setting is essential for taking action.

Narrative and Gratitude contributed to post-traumatic growth, highlighting the role of meaning-making and appreciation in the recovery process. Overall, post-traumatic growth was best supported by a combination of Imagination, Dreams, Narrative, and Gratitude, rather than Kindness or Action alone.

Study Limitations

One limitation of this study is the demographic composition of the sample, which was overwhelmingly female, with the majority identifying as female (74.0%), followed by male participants (20.2%). This gender imbalance suggests that women may be more inclined to participate in research studies addressing experiences of trauma and post-traumatic growth, potentially reflecting greater willingness to engage in self-reflective or emotionally focused inquiry. Additionally, while the sample included participants from mixed racial backgrounds, it was predominantly Caucasian/White (69.9%). The racial composition may indicate that Caucasians, compared to other racial groups, may be more willing to participate in research studies addressing experiences of trauma and post-traumatic growth.

Furthermore, the sample was composed primarily of non-Christians, with Christians making up 45.8% of the sample. Such religious makeup may not be representative of the larger population. Lastly, the sample was highly educated, which is expected given the study's focus on higher education population. The largest group held a Ph.D. or equivalent (28.9%), followed by those with a Master's degree (25.8%), a Bachelor's degree (17.4%), and a Professional degree (5.8%). This might suggest that individuals with advanced degrees may be more likely to participate in academic

research. It is important to note that from the perspective of higher education, this sample could be reflective of higher education population, however, from a larger population perspective, this could be a limitation.

In conclusion, the aforementioned demographic characteristics should be considered when interpreting the findings, as they may limit the generalizability of the study to broader and more diverse populations.

Directions for Future Research

Building on the findings of this study, future research should aim to examine the applicability of the KINDING Model and its connection to post-traumatic growth across diverse populations and contexts. While this study provided valuable insights into the experiences of a specific group (i.e., higher education institutions in the state of Michigan), extending the research to individuals from different cultural backgrounds, age groups, and socioeconomic statuses will enhance the generalizability of the findings. Investigating how the KINDING Model manifests across various demographics may reveal nuanced differences in how individuals engage with these positive emotions, cognitions, and practices following trauma. Tied to population diversity is exploring the impact of the KINDING Model in varied contexts, such as mental health clinics, hospitals, rehabilitation centers, trauma recovery programs, business organizations, etc. Examining its effectiveness in structured therapeutic settings could provide insight into its role in clinical interventions and mental health treatments, whereas examining its effectiveness in non-therapeutic settings could highlight its potential for fostering post-traumatic growth in everyday life, such as in educational programs, workplace well-being

initiatives, community support groups, or self-guided personal development practices.

This broader examination would help determine whether the KINDING Model can serve as a universally applicable framework for growth beyond clinical interventions, empowering individuals to navigate adversity in diverse contexts.

Additionally, expanding the study to different geographical locations – both within the United States and internationally – could illuminate how cultural and societal factors shape the relationship between the KINDING Model and post-traumatic growth, potentially leading to the development of culture-specific strategies for growth. Different cultural perspectives on trauma, healing and post-traumatic growth may influence how individuals engage with the constructs of the KINDING Model, highlighting variations in the emphasis placed on its constructs across societies. Furthermore, examining the KINDING Model in collectivist versus individualist cultures could provide insight into whether personal agency or social support and communal narratives play a more significant role in post-traumatic growth. Such cross-cultural research could inform the adaptation of KINDING-based interventions to align with the values, beliefs, and coping mechanisms of diverse populations, ensuring greater accessibility and effectiveness.

A deeper exploration of the mechanisms through which the components of the KINDING Model operate would further refine our understanding of its role in post-traumatic growth. Future studies should investigate the cognitive and emotional pathways that mediate the effects of each of the KINDING constructs. This could also contribute to identifying whether specific constructs play a more significant role in fostering growth depending on the nature of the trauma experienced.

Moreover, longitudinal studies could also assess whether engaging with KINDING components over time leads to sustained psychological benefits. Tracking individuals across months or years would provide valuable insights into whether the positive effects of the KINDING Model are temporary or contribute to long-term post-traumatic growth and overall well-being. Such research could also reveal whether certain components of KINDING, such as gratitude or narrative, become more influential at different stages of recovery. Additionally, examining potential fluctuations in engagement with KINDING over time could help identify factors that either enhance or hinder its effectiveness.

Another important direction is to explore whether shifts in trauma recovery practices – between old practices vs current practices – affect post-traumatic growth outcomes. Investigating the impact of integrating the KINDING principles into existing therapeutic frameworks could provide evidence for its efficacy in enhancing resilience and psychological well-being. Comparing new approaches with older, more conventional practices may offer valuable insights into how trauma survivors can most effectively cultivate positive self-leadership and long-term growth.

Finally, future research should examine whether the experiences of trauma survivors and the connections between the KINDING constructs and post-traumatic growth vary based on trauma type. Different forms of trauma, such as interpersonal violence, natural disasters or sexual trauma may influence how individuals engage with the KINDING Model constructs and experience growth. Understanding these distinctions

will allow for more tailored approaches in trauma recovery, ensuring that interventions align with the unique needs of each trauma survivor.

In summary, advancing research on the KINDING Model and its relationship to post-traumatic growth across diverse populations, contexts, and trauma types holds significant potential for refining trauma recovery approaches. By expanding studies to different cultural and geographical settings, exploring its application in both clinical and non-clinical environments, and examining the underlying mechanisms driving its impact, future research can provide a more comprehensive understanding of this model and its efficacy. Additionally, investigating long-term engagement with KINDING constructs and the evolving nature of trauma recovery practices will offer valuable insights into how individuals sustain growth over time. Through these efforts, the KINDING Model can be further developed as a universally applicable framework, fostering post-traumatic growth and well-being in individuals navigating traumatic and adversarial experiences across varied life circumstances.

Conclusions

The present study introduced the KINDING Theory of Human Growth Through Positive Self-Leadership, emphasizing the central role of positive emotions, cognitions, and behaviors in fostering post-traumatic growth. The findings underscore the dynamic interplay of vision (Dreams, Imagination), action (Implementation), meaning-making (Narrative, Gratitude), and self-care (Nurturing Soul, Kindness) in facilitating psychological transformation following traumatic or highly adversarial experiences. The

implications of this study extend to higher education professionals, mental health researchers, and scholars exploring post-traumatic growth across disciplines.

Higher education institutions must prioritize trauma-informed campus cultures by fostering environments that recognize and validate the lived experiences of students and faculty members who have encountered adversity. Establishing spaces for open discussions on trauma and growth can help normalize the process of overcoming hardship, reducing stigma, and encouraging engagement in resilience-building practices. To enhance institutional support, faculty and administrators should receive training in post-traumatic growth informed strategies, equipping them with the skills necessary to guide students toward developing resilience and self-leadership. Additionally, student support services, including counseling centers and academic advising, should integrate KINDING principles to cultivate students' self-leadership skills and emotional well-being. By embedding strategies that emphasize goal-setting (Dreams), narrative processing (Narrative, Gratitude), and self-care (Nurturing Soul, Kindness) within student services, institutions can provide individuals with the psychological resources necessary to navigate challenges more effectively.

Moreover, educational curricula, particularly within leadership, psychology, and education, could incorporate post-traumatic growth frameworks that align with the KINDING model. Experiential learning opportunities, service projects, and classroom discussions focused on resilience can serve as pedagogical tools for engaging students in applied post-traumatic growth principles. Additionally, faculty and administrators would benefit from self-leadership training, incorporating principles of the KINDING model,

which can help mitigate stress, prevent burnout, and promote well-being. Implementing professional development programs that include KINDING-based exercises, such as gratitude practices, goal-setting, and storytelling, can contribute to a more supportive and psychologically healthy academic environment.

From a mental health perspective, research in trauma recovery and psychological resilience should further explore the neuroscientific foundations of post-traumatic growth. Specifically, future studies should investigate the extent to which positive emotions and cognitions influence the neurobiological mechanisms underlying psychological transformation following trauma. Identifying the neurological mechanisms that reinforce adaptive cognition and behavior can provide a more comprehensive understanding of the cognitive-affective processes that sustain long-term resilience and growth.

Additionally, there is a need for the development and systematic evaluation of KINDING-based interventions. Mental health practitioners should design structured trauma recovery programs that integrate the seven constructs of the KINDING model, ensuring that interventions address both cognitive and behavioral dimensions of growth. Such interventions should be empirically tested across clinical and non-clinical populations to assess their efficacy in facilitating post-traumatic growth and enhancing psychological well-being. Also, given that post-traumatic growth manifests differently across individuals, future research should explore personalized post-traumatic growth pathways in therapeutic and counseling contexts. While some individuals may respond more favorably to cognitive-based approaches, such as journaling and gratitude exercises,

others may require behavioral activation strategies, such as goal-directed implementation and action-based resilience training. Understanding these individual differences is essential for refining therapeutic approaches and tailoring interventions to meet diverse needs.

Furthermore, existing post-traumatic growth measurement tools, such as the Post-Traumatic Growth Inventory (PTGI), do not fully capture the multi-dimensional integration of positive emotions, cognitions, and behaviors outlined in the KINDING framework. To advance the field, researchers could develop refined assessment instruments that comprehensively evaluate the dynamic and holistic nature of post-traumatic growth, ensuring that empirical studies offer a more nuanced understanding of the growth process.

Given that post-traumatic growth is a multi-dimensional process, researchers studying post-traumatic growth across various disciplines should examine how the various KINDING constructs interact and contribute to sustained psychological transformation. By taking a holistic approach, scholars can develop more nuanced theories that reflect the complexity of trauma recovery and growth. Also, the role of self-leadership in trauma recovery warrants further investigation. The findings of the current study emphasized that growth following trauma is not a passive occurrence but rather an active process requiring intentional engagement in positive behaviors and cognitions. Future research could explore how self-leadership training programs can enhance long-term trauma recovery by helping individuals cultivate resilience, reframe adversity, and take meaningful steps toward their aspirations.

In addition, cultural and contextual influences on post-traumatic growth remain an important area of study. Since this research was conducted within a higher education setting, further investigations should explore how KINDING principles apply across diverse cultural, economic, and social backgrounds. Understanding how different populations experience and cultivate growth after trauma will help ensure that post-traumatic growth frameworks are adaptable and inclusive.

Finally, bridging academic research with practical applications is essential for advancing the field of post-traumatic growth. Scholars should collaborate with practitioners, educators, and policymakers to translate research insights into real-world interventions that support trauma survivors in diverse settings. By aligning empirical findings with applied programs, researchers can contribute to the development of more effective, evidence-based strategies for fostering resilience and psychological well-being in individuals recovering from adversity. To conclude, the present study contributed to the growing body of research on post-traumatic growth by introducing the KINDING Theory, a framework that emphasizes the integration of positive emotions, cognitions, and behaviors in facilitating growth following trauma and adversity. By applying these insights, higher education professionals, mental health researchers, and scholars studying trauma recovery can develop more effective, evidence-based strategies to support individuals navigating post-traumatic growth. Ultimately, implementing KINDING-based principles has the potential to promote sustained psychological well-being and transformative growth for individuals and communities affected by adversity.

APPENDIX A

Email Soliciting Participation in Research Study (Survey)

Subject: Invitation to Participate in Research Study (Survey)

Hello,

My name is Juna (yu-nah) Kotori, and I am a Ph.D. candidate in Educational Leadership, School of Education and Human Services at Oakland University in Rochester, Michigan. I am conducting a research study under the direction of my faculty adviser Dr. Julia Smith.

The purpose of this research study is to understand what, if any, relationship exists between positive self-leadership, fueled by positive emotions and cognitions and manifested through positive behaviors, and post-traumatic growth.

The survey will take place online and will take approximately 30-40 minutes to complete.

The survey is completely anonymous, ensuring that no identifiable data that can be directly linked to you are collected. Confidentiality will be protected except as required by law.

The inclusion criteria for completing the survey are as follows:

- (1) adults 18 years of age and up
- (2) having potentially experienced a traumatic or highly adversarial event
- (3) attending or working for a higher education institution (public, private, or community college)

If you meet the inclusion criteria and would like to participate, please click on the link below to complete the survey.

Link: https://oakland.az1.qualtrics.com/jfe/form/SV_79xnJ8lttgDslx4

For participating in the study, you will have the opportunity to enter a raffle to win a \$50 gift card.

Thank you for your participation in my research study. Your insights and perspectives will be invaluable in helping me achieve a comprehensive understanding of the research topic.

Juna Kotori
Oakland University Ph.D. Candidate

APPENDIX B

Information Sheet for Exempt Survey Research

Introduction

You are being asked to participate in a research study that is being conducted by Juna Kotori under the direction of Julia Smith, Ed.D., Professor in the Department of Organizational Leadership and faculty advisor for this project.

Your decision to participate in this study is voluntary. You can choose to stop your participation at any time or skip any part of the study if you are not comfortable.

What is the purpose of this study?

The purpose of this research study is to understand what, if any, relationship exists between positive self-leadership, fueled by positive emotions and cognitions and manifested through positive behaviors, and post-traumatic growth.

Who can participate in this study?

You are being asked to participate in the study because you (1) are an adult 18 years of age and up; (2) have potentially experienced a traumatic or highly adversarial event; and (3) are attending or working for a higher education institution (public, private, or community college)

What do I have to do?

You will be asked to complete a survey about positive practices in which individuals engage while going through a traumatic or highly adversarial event. There will be no direct questions related to the traumatic/ adversarial event itself or to details about it. Rather, the survey questions focus on positive practices in which individuals engage while going through a traumatic or highly adversarial experience. The survey will take place online and will take approximately 30-40 minutes to complete.

Are there any risks to me?

The survey is completely anonymous, ensuring that no identifiable data that can be directly linked to participants are collected. No video recording will take place.

Confidentiality will be protected except as required by law.

Filling out trauma-related surveys poses a minimal risk. Minimal risk is defined as levels of discomfort that are not greater than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations.

While the majority of participants are expected to have neutral or positive experiences participating in this research, it is possible that answering questions about responses to trauma or adversity might trigger an emotional response in some individuals which may lead to feelings of emotional distress. Distress responses are infrequent, mild, and

transitory. Individuals with a higher chance of experiencing emotional distress include trauma survivors who are in crisis, individuals who suffer from post-traumatic stress disorder symptoms, and acutely distressed patients (e.g., hospitalized inpatients).

Because of the minimal risk of this research, no emergencies are foreseen. However, if distressed, you may exit the survey immediately by closing the web browser or seek professional help; 911 may be called to assist. A list of online resources for support can be found below:

- Dating Abuse: 1-866-331-9474, 1-866-331-8453 (TTY) or Text LOVEIS TO 22522
- Michigan Stay Well Counseling Line: 1-888-535-6136 and press "8"
- National Center for Victims of Crime: 1-800-394-2255
- National Child Abuse Hotline: 1-800-422-4453
- National Domestic Violence Hotline: 1-800-799-7233 and 800-787-3224 (TDD)
- National Sexual Assault Hotline: 800-656-4673
- National Suicide Prevention Lifeline: 1-800-273-8255, 1-800-799 4889 (TTY)
- PTSD Foundation of America 877-717-7873
- Rape, Abuse & Incest National Network: 1-800-656-4673
- Suicide Prevention Hotline: 988. The number can be dialed or texted.

If after reading this information you believe that participation will upset you, you are free to withdraw.

Are there any benefits to me?

It is unknown whether there may be any direct benefits to you at the time of your participation in the study, however, the results of this study may benefit both you and others in the future.

Will I receive anything for participating?

For participating in the study, you will have the opportunity to enter a raffle to win a \$50 gift card. If you agree to participate in the raffle, you will be asked to provide your email address by moving to a different survey. The email address will be used only for purposes of notifying you if you win the raffle. This information will not be linked to your data in any way.

What if I want to stop participating in this study?

Your participation is completely voluntary. If you want to stop participating, you may do so. Simply, close your web browser before completing and submitting the survey. If the survey is submitted, it will not be possible to withdraw your data from the study. Likewise, you may skip any questions that you find uncomfortable.

Who can I contact if I have questions about this study?

You may contact me or the faculty advisor for this study. Contact information is provided below.

Juna Kotori, jkotori@oakland.edu

Dr. Julia Smith, Ed..D., Faculty Advisor, j15smith@oakland.edu, 248.370.3070

For questions regarding your rights as a participant in human subject research, you may contact the Oakland University Institutional Review Board, 248-370-4898.

APPENDIX C

KINDING: A THEORY OF HUMAN GROWTH POST TRAUMATIC EXPERIENCES

RESEARCH PARTICIPANTS NEEDED



FOR MORE INFORMATION:
Juna Kotori, jkotori@oakland.edu (Primary Resarcher)
Dr. Julia Smith, j15smith@oakland.edu (Faculty Advisor)

APPENDIX D

KINDING Scale (final)

DEMOGRAPHICS: Write out or select that which applies to you.

Age: _____
Gender: _____
Race: _____
Ethnicity: _____
Religion: _____
Profession: _____
Employment Status: Not working for pay
Unemployed, looking for work
Working part-time (1 – 30 hours a week)
Working full-time (more than 30 hours a week)
Retired
Education level: Less than high school (10 years)
High school graduate (12 years)
Some college, no degree
Associate degree (14 years)
Bachelor's degree (16 years)
Master's degree (18 years)
Professional degree (MD, DDS, JD, etc)
PhD degree (20+ years)
Marital Status: _____

TRAUMATIC EXPERIENCES CHECKLIST

Mark with an X the traumatic event(s) that you have experienced. Select all that apply.

*Forced answer

- Parentification (having to look after your parent(s) and/or siblings(s) when you were a child)
- Family problems (e.g., poverty, parent(s) with alcohol or psychiatric problems, etc.)
- Parents' divorce
- Your own divorce
- Loss of your own child in adulthood
- Loss of your parent(s) in adulthood
- Loss of immediate family member(s) in childhood
- Loss of immediate family member(s) in adulthood
- Severe bodily injury (e.g., loss of limbs, burns, etc.)
- Intense pain (e.g., from surgery, injury, etc.)
- Threat to life from illness, surgery, accident, natural disaster, etc.

- Deliberate threat to life from another person
- Witnessing others undergo trauma
- War-time experiences (e.g., witnessing war, imprisonment, loss of parents/relatives, deprivation, injury, etc.)
- Second-generation war victim (e.g., war-time experiences of parents, grandparents or close relatives)
- Emotional neglect by immediate family member(s) (e.g., being left alone, insufficient affection, etc.)
- Emotional neglect by non-immediate family member(s) (e.g., being left alone, insufficient affection, etc.)
- Emotional neglect by non-family member(s) (e.g., being left alone, insufficient affection, etc.)
- Emotional abuse by immediate family member(s) (e.g., being belittled, teased, called names, threatened verbally, unjustly punished, etc.)
- Emotional abuse by non-immediate family member(s) (e.g., being belittled, teased, called names, threatened verbally, unjustly punished, etc.)
- Emotional abuse by non-family member(s) (e.g., being belittled, teased, called names, threatened verbally, unjustly punished, etc.)
- Physical abuse by immediate family member(s) (e.g., being hit, tortured or wounded)
- Physical abuse by non-immediate family member(s) (e.g., being hit, tortured or wounded)
- Physical abuse by non-family member(s) (e.g., being hit, tortured or wounded)
- Sexual harassment by immediate family member(s) (e.g., acts of a sexual nature that do not involve physical contact)
- Sexual harassment by non-immediate family member(s) (e.g., acts of a sexual nature that do not involve physical contact)
- Sexual harassment by non-family member(s) (e.g., acts of a sexual nature that do not involve physical contact)
- Sexual abuse by immediate family member(s) (e.g., unwanted sexual acts involving physical contact)
- Sexual abuse by non-immediate family member(s) (e.g., unwanted sexual acts involving physical contact)
- Sexual abuse by non-family member(s) (e.g., unwanted sexual acts involving physical contact)
- Immigration by choice/ parental choice (if under 21 years of age)
- Forced immigration/ relocation due to circumstances (e.g., war, life threats, etc.)
- Natural disaster(s)
- Other

Did you experience any of the traumatic events that you selected above in childhood?

*Forced answer

Yes

No

Did you experience any of the traumatic events that you selected above in adolescence?

*Forced answer

Yes

No

Did you experience any of the traumatic events that you selected above in adulthood?

*Forced answer

Yes

No

PART I

Please respond to the following questions concerning your **most recent** traumatic experience.

How often **during or after** that experience did you engage in the following practices?

0-11 = Never

12-23 = Once or twice since it happened

24-35 = Roughly once a year

36-47 = A few times a year

48-59 = Once a month

60-71 = Once a week

72-83 = A few times a week

84-100 = Daily

1. I was understanding towards myself.
2. I was loving towards myself.
3. I gave myself the tenderness and caring I needed.
4. I was tolerant of my own flaws and inadequacies.
5. I tried to become mindful of my experience of the present moment.
6. I was patient with myself.
7. I tried to keep things in perspective.

1. I engaged in positive thinking about the present.
2. I imagined overcoming the challenges I faced.
3. I imagined how I could use the traumatic experience to improve in one or several areas of life.
4. I visualized how I would feel after overcoming the traumatic/ adversarial experience.
5. I imagined a better future for myself.

6. I imagined myself engaging in positive activities.

1. I engaged in self-care routines.
2. I spent time in nature.
3. I read or listened to stories/ memoirs of people sharing their traumatic experiences.
4. I spent time with loved ones.
5. I engaged in activities that brought me joy.
6. I sought out experiences to relax (e.g., petting an animal, cuddling a soft blanket, putting on comfortable clothes, etc.)
7. I practiced recognizing how certain thoughts were associated with certain emotions.
8. I tried to get adequate amounts of sleep, at least 7 hours of sleep a night.
9. I avoided taking on too many requests or demands.

1. I established a series of goals for my life.
2. I created a vision for my life.
3. I crafted a mission for my life.
4. I looked into activities that would motivate me to stick to my goals.

1. I created an action plan to reach my goals.
2. I made changes to the action plan as needed.
3. I broke down my action plan into smaller chunks.
4. I was mindful about my progress towards the action plan.

1. I thought about my emotional responses to the traumatic event.
2. I thought about how my beliefs and assumptions were shaping how I was dealing with the traumatic experience.
3. I thought about how my life had been impacted by the traumatic experience.
4. I thought about lessons that I learned from going through the traumatic experience.
5. I thought about the traumatic experience – why it happened, how it could have been prevented (if possible), how it affected my present life and future, etc.
6. I thought about my mental responses to the traumatic event.
7. I tried reframing the experience as a challenge that needed to be overcome rather than a trauma that defined me.

1. I identified the individuals who truly bring joy to my life.
2. I felt thankful for the positive aspects of life.
3. I looked for good things in my life.
4. I realized that I have much in life for which to be grateful.
5. I identified the individuals for whom I was grateful.
6. I identified the things that truly bring joy to my life.
7. I felt grateful for my strengths.
8. I expressed my gratitude to the individuals to whom I was grateful.
9. I savored the good things in my life.
10. I appreciated having people for whom to be grateful.
11. I focused on the positive aspects of my life as I was navigating the traumatic experience.

PART II

Using the scale below, indicate the amount you **currently** engage in each of the practices below.

0-15 = not at all
 16-31 = to a very small degree
 32-47 = to a small degree
 48-63 = to a moderate degree
 64-79 = to a great degree
 80-100 = to a very great degree

1. Being aware of my emotions in the moment.
2. Accepting myself.
3. Improving my health (physical, emotional, mental, etc.)
4. Lowering my daily stress.
5. Feeling compassion for myself.

1. Feeling motivated to create positive change in my life.
2. Having a desire to build the life that I want for myself.
3. Feeling more optimistic about life.
4. Being curious about what the future could look like.
5. Considering new possibilities beyond my current reality.
6. Generating novel ideas and approaches to challenges.

1. Engaging in activities that provide a sense of purpose or meaning.
2. Discovering new qualities in myself.
3. Developing my strengths.

4. Discovering new strengths.
5. Understanding myself better.
6. Relying on my strengths.
7. Focusing on positive emotions when dealing with negative life experiences.
8. Developing better self-care practices.
9. Developing a deeper understanding of life in general.

1. Knowing my direction in life; where I am going and what I am doing with my life.
2. Feeling hopeful for a better future.
3. Intentionally engaging with positive emotions.
4. Feeling in control of my life.
5. Working on my life vision.

1. Focusing on the present moment.
2. Feeling optimistic about the future.
3. Creating improvement in various areas of my life.
4. Experiencing more instances of being in the moment.

1. Challenging my old assumptions about people.
2. Challenging my old assumptions about life.
3. Understanding how my life experiences fit together.
4. Challenging my old assumptions about myself.
5. Trying to understand my feelings/ why I feel the way I do.
6. Having a better understanding of life.
7. Understanding how my feelings influence my behaviors.

1. Focusing on the positive aspects of life.
2. Realizing that my life has meaning and purpose.
3. Having deeper compassion for myself.
4. Feeling more “alive”.
5. Having deeper appreciation for myself.
6. Feeling positive emotions (e.g., gratitude, compassion, joy, etc.).

PART III

Please respond to the following questions concerning your **most recent** traumatic experience.

Indicate for each of the statements below the degree to which this change occurred in your life **as a result of** the traumatic experience.

0 = did not experience this change

1 = a very small degree

2 = a small degree

3 = a moderate degree

4 = a great degree

5 = a very great degree

	0	1	2	3	4	5
I changed my priorities about what is important in life.						
I have a greater appreciation for the value of my own life.						
I developed new interests.						
I have a greater feeling of self-reliance.						
I have a better understanding of spiritual matters.						
I more clearly see that I can count on people in times of trouble.						
I established a new path for my life.						
I have a greater sense of closeness with others.						
I am more willing to express my emotions.						
I know better that I can handle difficulties.						
I am able to do better things with my life.						
I am better able to accept the way things work out.						
I can better appreciate each day.						
New opportunities are available that wouldn't have been otherwise.						
I have more compassion for others.						
I put more effort into my relationships.						
I am more likely to try to change things which need changing.						

I have a stronger religious faith.						
I discovered that I'm stronger than I thought I was.						
I learned a great deal about how wonderful people are.						
I better accept needing others.						

PART IV

Please answer the following questions related to your participation in this research.

1. Clarity

Were any of the statements confusing? If so, please identify what caused the confusion.

Were the instructions for the items concerning responses to trauma clear? If not, please identify what was unclear and/or caused confusion.

2. Emotional Impact

Did any of the statements evoke strong emotional reactions or discomfort? If so, please identify the discomfort you felt.

3. Ease of Completion

Did the length of the survey feel appropriate?

4. Confidentiality and Privacy

Were there any concerns about the security of your data or how it would be used?

5. Suggestions for Improvement

Are there any changes that you would recommend to enhance the overall survey experience?

6. Overall Impact

How valuable do you think your participation in this survey will be for advancing the understanding of positive practices following trauma/ adversity?

APPENDIX E

Post-traumatic Growth Inventory

Please respond to the following questions concerning your **most recent** traumatic experience.

Indicate for each of the statements below the degree to which this change occurred in your life **as a result of** the traumatic experience.

0 = did not experience this change

1 = a very small degree

2 = a small degree

3 = a moderate degree

4 = a great degree

5 = a very great degree

	0	1	2	3	4	5
I changed my priorities about what is important in life.						
I have a greater appreciation for the value of my own life.						
I developed new interests.						
I have a greater feeling of self-reliance.						
I have a better understanding of spiritual matters.						
I more clearly see that I can count on people in times of trouble.						
I established a new path for my life.						
I have a greater sense of closeness with others.						
I am more willing to express my emotions.						
I know better that I can handle difficulties.						
I am able to do better things with my life.						
I am better able to accept the way things work out.						
I can better appreciate each day.						

New opportunities are available that wouldn't have been otherwise.						
I have more compassion for others.						
I put more effort into my relationships.						
I am more likely to try to change things which need changing.						
I have a stronger religious faith.						
I discovered that I'm stronger than I thought I was.						
I learned a great deal about how wonderful people are.						
I better accept needing others.						

APPENDIX F

Institutional Review Board (IRB) Approval

Date: October 9, 2024

Study #: IRB-FY2025-122

Study Title: KINDING: A theory of human growth through positive self-leadership

Submission Type: Initial

IRB Decision: Exempt

Research Team:

Juna Kotori

Julia Smith

Based on applicable federal regulations, the above referenced study has been determined to be Exempt, with the following categories:

Category 2.(i). Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met:

The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects;

Notes for Researcher(s):

This submission includes the following approved documents:

- Recruitment Email and Flyer
- Information Sheet V 10/9/2024
- Research Survey

Letter and Consent Document:

This letter along with the IRB approved (date-stamped) consent document can be found in Cayuse in the Submission Details page under Letters and Attachments, respectively. Please make sure to use the most recent IRB approved version of the consent form in consenting participants.

Permission from Research Site(s):

Please note the following:

- This IRB exemption determination letter means that this research has met one or more of the federal criteria for exemption per 45 CFR 46.104- Exempt Research.
- Before the research is initiated, permission to conduct research at a given site must be obtained from all research locations listed in the IRB submission. You must keep copies of all such permission letters for your files.
- It is the responsibility of each researcher to follow all applicable policies and procedures of any outside institution where the research will be conducted.

Modifications:

Any changes to this exempt project must be reviewed by the IRB prior to initiation by submitting a MODIFICATION request. Do not collect data while the changes are being reviewed. Data collected during this time cannot be used in research.

Record Retention:

Exempt projects will be retained by the IRB office for three years after the last action on the project.

You are approved to start the research. Please retain a copy of this notification for your records.

If you have any questions, please contact the IRB office.

Thank you.

The Oakland University IRB

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