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A humanistic examination of Posttraumatic Growth in United States Military Veterans

Aaron J. Smith
University of New Mexico

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Aaron James Smith

Candidate

Counselor Education & Supervision (IFCE, College of Education)

Department

This dissertation is approved, and it is acceptable in quality and form for publication:

Approved by the Dissertation Committee:

Chairperson Matthew Lemberger-Truelove, PhD, LMHC

Kristopher Goodrich, PhD, LPCC, ACS

Tom Chavez, PhD

Carolyn Hushman, PhD
A HUMANISTIC EXAMINATION OF POSTTRAUMATIC GROWTH IN UNITED STATES MILITARY VETERANS

by

AARON JAMES SMITH

BA Psychology, 2010
BA Cultural Anthropology, 2010
MA Clinical Mental Health Counseling, 2013

DISSERTATION

Submitted in Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy

Counselor Education

The University of New Mexico
Albuquerque, New Mexico

July, 2017
DEDICATION

This dissertation study is dedicated to CPL Cameron Weger (1992-2014).
ACKNOWLEDGMENTS

First and foremost, the unconditional love and support of my wife, Madi, made this dissertation possible. This was also possible thanks to the support of my parents, Nancy and Paul, and from my truly amazing siblings, Alyssa, Zach, and Patrick. I would also like to acknowledge and thank each member of my dissertation committee, Dr. Matthew Lemberger-Truelove, Dr. Kristopher Goodrich, Dr. Tom Chavez, and Dr. Carolyn Hushman. And, of course, I would like to thank my dog, Oliver, for patiently keeping me company while I worked on this project.
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Aaron James Smith

BA PSYCHOLOGY
BA CULTURAL ANTHROPOLOGY
MA CLINICAL MENTAL HEALTH COUNSELING
PHD COUNSELOR EDUCATION & SUPERVISION

ABSTRACT

Military Mental Health Stigma (MMHS) is attributed as a significant factor in the 20 suicides that occur each day by United States Military Veterans (USMVs) (Kemp & Bossarte, 2012). These negative attitudes or beliefs about mental health exist, in part, due to a dearth of research on additive gains in the aftermath of trauma, known as Posttraumatic Growth (PTG, see: Tedeschi & Calhoun, 2004). The model most often used to describe PTG by mental health counselors working with USMVs is both under-researched (Calhoun & Tedeschi, 2004), as well as, one that may be philosophically misaligned with the spirit of combating MMHS (Sagalyn, 2012). To explore new ways of understanding PTG, Hierarchical Multiple Regression was used to analyze scores on the Brief Personal Meaning Profile (MacDonald et. al, 2012) as predictors of scores on the Posttraumatic Growth Inventory – Short Form (Cann et. al, 2012), having controlled for demographics and military factors. The overall model was significant (p < .000) among diverse USMV-survivors of trauma (n=85). Implications for the knowledge-base of humanism and PTG in mental health are explored, as well as, clinical-implications for mental health professionals.
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Chapter 1: Introduction

While human beings have been on this earth, experiences of suffering have been an inevitable part of our existence (Friedman, n.d.). The effects of trauma can be especially apparent when considering individuals who have served in the military as they have more likely experienced additional combat-related trauma (Jacobson, 2011). For some people, the experience of trauma can result in a diagnosable condition called Post-Traumatic Stress (PTS) (American Psychiatric Association, 2013). Alternatively, there is an emergent body of research illustrating that some people experience additive gains after experiencing one or more traumatic events, referred to as Posttraumatic Growth (PTG) (Calhoun & Tedeschi, 2004). In the case of military veterans, approximately half who qualify for a diagnosis of PTS also reportedly experience positive gains in some areas of functioning (Tsai, El-Gabalawy, Sledge, Southwick, & Pietrzak, 2015).

Despite researchers now learning more about how traumatic experiences can often facilitate positive-growth (Tedeschi & Calhoun, 2004), many who continue to experience suffering in the aftermaths of traumas find themselves being ostracized, invalidated, and ultimately, stigmatized as ‘disordered’ (Ursano, Fullerton, & Brown, 2011). This may be of particular-concern for United States Military Veterans (USMVs), finding themselves in a particularly vulnerable position within society (Jacobson, 2011).

Rates of trauma exposure and resulting Post-Traumatic Stress incidences (PTS) (DOD, 2013; Jacobson, 2011; Kennedy, 2009) have risen rapidly since September 11th, 2001 for US military personnel (NIDA, 2011). While cases exhibiting PTS continue to rise (Jacobson, 2011), a growing number of USMVs are also failing to seek professional assistance when they struggle,
often attributed as the result of Military Mental Health Stigmatization (MMHS), according to Hoge, Hammer, and Friedman (2012).

**Military Mental Health Stigma (MMHS)**

For the purposes of this dissertation, MMHS was defined as any beliefs held by a United States Military Veteran (USMV) that interfere with the decision, acquisition, or relative success of mental health treatment. It was found that more than half of service members (Hoge et. al, 2012) qualify for mental health services and yet never received it as a direct result of MMHS. According to some researchers, these kinds of beliefs can “become internalized into a service member’s identity, persisting in veterans after military service” (Gibbons et. al, 2016, p. 32). Further compounding the effects of MMHS on those who may be most vulnerable, the study (Hoge, Hammer, & Friedman, 2012) found evidence that those service members who, “met screening criteria for PTSD, depression, or generalized anxiety had a much higher rate of endorsing stigma items than soldiers who did not have a mental health problem” (p. 32).

The military itself places the blame for stigmas about mental health squarely on the use of the word *disorder* (Hoge et. al, 2012; Ursano et. al, 2011) in the Diagnostic Statistical Manual of Mental Disorders V (DSM-5; American Psychiatric Association, 2013) and used by mental health professionals to describe and label the symptoms of the Veteran. Perceived weaknesses of any kind are not often validated among those within martial cultures whose profession involves direct, existential threats to personal safety (Ramchand, 2011). The word *disease* within the mental health fields is associated with the medicalization of mental health (Hansen, 2010; Yalom, 2002). As such, trauma is often interpreted by USMVs as symptomatic of disease – therefore being internalized as a weakness (Ramchand, 2011; Morrison, 2012; Smith, 2014). The experience of perceived personal weakness leads to MMHS-induced reluctance to seek out
needed mental health assistance, which has been greatly attributed to the staggeringly high numbers of US military personnel that take their own lives each day (Ramchand, 2011). Researchers found more than 20 percent of all suicides in the United States (US) occurred by USMVs despite only composing approximately 10 percent of the entire US population, as indicated on their death certificates, per a study conducted by the Veterans Affairs (Kemp & Bossarte, 2012). In a desperate attempt to assist in lowering these tragic statistics by attacking MMHS directly, the military attempted to advocate to have the word disorder struck from mental health diagnoses, the results of which were unsuccessful (Sagalyn, 2011).

**Posttraumatic Growth (PTG): A Potential Ally in Fighting MMHS**

While the experience of PTS is certainly present in many USMVs, there is a growing body of literature related to the broader population of US military personnel that infers that these miseries have potential as opportunities (Calhoun & Tedeschi, 2004) – prospects for altering the way we understand and exist in the world in immensely positive ways (Frankl, 1959; May, 1975; Yalom, 2002). A clear majority of trauma-research in mental health specific to United USMVs appears to revolve around explorations of the negative legacy of trauma (Tedeschi & Calhoun, 2004) – those that result in supposedly verifiable diagnoses (Hansen, 2010). There is a growing literature base, however, that appears to show a relatively under-examined phenomenon by mental health researchers: Some service members who report a history of trauma appear to have conjunctively experienced positive benefits in their aftermath (Calhoun & Tedeschi, 2004; Tsai, El-Gabalawy, Sledge, Southwick, & Pietrzak, 2015). As recently as 2015, Tsai and colleagues (2015) found that approximately 50.1 percent of all USMVs, along with 72 percent of USMVs with diagnosed Posttraumatic Stress Disorder (PTSD) reported having experienced greater social connectedness, intrinsic religiosity, and personal meaning, some of the experiential-
manifestations of what is referred to as Posttraumatic Growth (PTG), especially when reported as being in response to their reported ‘worst’ traumas.

PTG represents an interesting opportunity for mental health professionals to advocate contributors to MMHS. Currently, symptoms of suffering existent in the aftermath of trauma – deemed as characteristic of disordered behavior – appear to dispirit many USMV’s perceptions and attitudes regarding seeking help for the effects of trauma (Sagalyn, 2011). That said, a perspective of trauma symptoms that adopts a bi-directional perspective of said occurrences, that includes potentially positive changes (e.g., PTG), may increase the degree to which it becomes culturally appropriate to both seek professional assistance, as well as talk with others more openly about their experiences. PTG’s contribution to destigmatizing mental health experiences may positively affect the likelihood of seeking assistance when service members become armed with a new perspective that validates the idea that these experiences are often more inclusive than just the troubling symptoms (Calhoun & Tedeschi, 2004; Tedeschi & Calhoun, 2004).

Promoting awareness that PTG has been shown to buoy resilience during times of immense stress (Calhoun & Tedeschi, 2004), such as the conditions under which the military often works, may open the door for USMVs to begin discussing the full range of their unique bio-psycho-socio-spiritual experiences (Frankl, 1959) after difficult situations. This may, potentially, result in more positive systemic-alterations to how such symptoms are viewed, culturally, from within the wider military, itself.

There may, however, be a problem: The most accepted model for PTG for both research and clinical applications stems from Calhoun and Tedeschi’s (2004) Transformation Model, which is primarily grounded in cognitive-theory. As such, this model attempts to understand the positive changes that often occur in the aftermath of trauma from a cognitive perspective – a
perspective strongly informed by the medical model (Hansen, 2007; 2010). As previously mentioned, the medical model is responsible for the inclusion of the word *disorder* in the DSM-V (American Psychiatric Association, 2013) so the current assumption is that PTG may represent more nuanced changes than those processes affecting the *reordering* of how traumatic experiences are cognitively appraised (e.g., judged). If PTG is to be used as an alternative route of combating systematic MMHS most effectively, the development of models that explain a significant amount of variance in PTG outcomes using explanatory variables that better align with the military’s request to distance mental health conditions from its current medicalization, may be necessary. These variables may need to account for existential factors such as meaning (Tsai et al, 2015), and existential factors account for more than just how traumatic events are thought about. They would also need to consider how humans (and USMVs) are affected by traumatic experiences socially and spiritually.

*Humanism as an Alternate Framework.* Humanism presents an alternative way of conceptualizing the full range of responses to trauma, often proffering meaning-based approaches to understanding how people achieve and maintain wellness (Frankl, 1959). Interestingly, the available empirical evidence suggests that perceptions of personal meaning (Crumbaugh & Maholick, 1964; Frankl, 1959; Tsai et al 2015) are the strongest known predictors of PTG among a sample of adult survivors of trauma, including those with Traumatic-Brain Injury (TBI) (Powell, Gilson, & Collin, 2012), an increasingly common concurrent injury with PTS among USMVs returning from OIF/OEF deployments abroad (Kimbrel, Meyer, Kruse, Morissette, Young, & Gulliver, 2012). Perceptions of personal meaning were also found to be the strongest predictor of PTG among adult college students reporting a history of trauma (Cann, Calhoun, Tedeschi, & Solomon, 2010). Personal meaning refers to the sense that one has a clear
mission or sense of life-directedness, is most readily found in existential counseling theory (May, 1975; Frankl, 1959; Yalom, 2002), a philosophic approach to mental health (that is counter to the medical model) that postulates, more broadly, that personal meaning predicts mental-wellness (Frankl, 1978). Also, consistent with existential counseling theory is the assumptions that trauma and life-suffering can negatively affect perceptions of personal meaning, leading to what is often referred to as an ‘existential vacuum’ (Frankl, 1978).

This is consistent with the empiricism regarding Tedeschi and Calhoun’s (2004) Transformational Model of PTG, proffering that trauma often disrupts USMV’s’ perceptions of purpose-in-life, one of the five factors composing PTG from this perspective. Once perceptions of purpose-in-life have been disrupted by trauma, the development of PTG is understood as a reconstruction of life-purpose consistent with the phenomenon of PTG (Calhoun & Tedeschi, 2004). Humanistic approaches to counseling considers the client’s experience from a non-medical, wellness perspective (see Sweeney & Witmer, 1991; Witmer & Sweeney, 1992). This is important because the wellness model (Sweeney & Witmer, 1991) negates the idea of disordered behavior, an idea that forms the core of MMHS. In other words, if the research supports the idea that high perceptions of personal meaning correlates to high perceptions of PTG (Tedeschi & Calhoun, 2004), and that low purpose-in-life best predicts low perceptions of PTG (Tsai et. al, 2015), leading to measures of personal meaning potentially being strong predictors of PTG, they may then be used to develop a valid and reliable alternative-model that is non-medicalized, towards more effectively combatting fight MMHS.

An important potential mission of PTG-research in both counseling, as well as the military, is to combat barriers that diminish access to professional assistance (American Counseling Association, 2014). It is a potential mission because it appears that no research
exists, to the knowledge of the researcher, formally exploring the relationship between PTG-research availability and the presence of MMHS. For example, PTG-research may help to combat mental health stigmas resultant from an absence of research suggestive of potentially more positive post-trauma mental health trajectories. In turn, this may directly combat attitudes about mental health that are limited in scope to only trauma’s damaging legacy, that often dispirit attempts to seek counseling for lack of hope. A primary mission of humanistic theory in counseling parallels this undertaking closely, promoting wellness, in part, by normalizing and validating the full range of human experiences in the wake of trauma, consistent with a non-medical, wellness perspective (Sweeney & Witmer, 1991; Witmer & Sweeney, 1992). Further, humanism adheres to the adage, “An abnormal reaction to an abnormal situation is a normal reaction” (Frankl, 1959, p. 38). This idea attempts to normalize, as opposed to, stigmatize, intra-psychic experiences, which opposes currently adopted definitions of symptoms most readily described as disordered and, hence, abnormal in nature.

**The problem.** As previously mentioned, the primary model currently used to explain and research PTG, stems from a cognitive-perspective consistent with the medical model (Calhoun & Tedeschi, 2004; Tedeschi & Calhoun, 2004) – a primary cause of mental health stigmatization identified by military personnel (Sagalyn, 2011; Ben-Zeey, et. al, 2012). In turn, these efforts to challenge MMHS, the medical culturing of mental trauma might have dramatic implications for military veterans, not limited to reductions in strife or even suicidal behaviors. Learning more about the relationships between humanistic constructs and explanations of PTG could help augment empirical-evidence for alternative conceptualizations that may lead to more effective, philosophically-aligned efforts in combating MMHS. Helping to explain PTG in a way that
minimizes medical-associations (Ursano et. al, 2011) may also help to encourage attempts to seek counseling (Hoge et. al, 2012).

**Statement of Purpose and Research Questions**

The purpose of this dissertation study is to examine whether certain humanistic axioms can explain PTG (Calhoun & Tedeschi, 2004) when controlling for demographic variables among United States Military Veterans (USMVs) reporting a history of trauma. Results from current research suggest that one of the most robust-predictors of PTG are perceptions of life-purpose (see Crumbaugh & Maholick, 1964; Frankl, 1959; Schulenberg, Smith, Drescher, & Buchanan, 2015), including amongst USMVs, specifically (Tsai et. al, 2015). To this end, the researcher considered the following primary research question -- Can certain humanistic concepts account for a significant amount of variance in PTG outcomes, when controlling for demographic variables among USMVs self-reporting a history of trauma?

**Identification of Variables, Definitions, and Operationalization of Constructs**

The following sections will provide a list of the variables included in this dissertation study, their intended broader definitions, and finally, how each has been operationalized for the purposes of this research.

**Trauma: Controlled Variable and an Inclusion Criterion**

For the purposes of this study, *trauma(s)* was defined as any situation(s) perceived by participants as a cause of psychological, physical, spiritual, or other types of distress, as self-defined by the participant. All participants are required to have a self-reported history of traumatic experience, controlled via the inclusion-exclusion criterion for this dissertation’s study. Unlike the PTSD-symptoms measured in-accordance with their respective criterion delineated in the DSM-V (American Psychiatric Association, 2013), trauma-type was *neither* measured, nor
accounted for, contrasting with the DSM-5 (American Psychiatric Association, 2013) that requires, “exposure to actual or threatened death, serious injury, or sexual violence,” (American Psychological Association, 2013, p. 271). The reason for this difference is primarily for theoretical-congruence with humanism that allows participants to self-define their perceptions of their own, unique experiences. A single, required survey item in the Participant Screening Survey was used to verify that participants have a self-reported history of trauma(s), prior to taking any of the other surveys.

**Demographic Variables: Demographics Survey Questionnaire (Researcher-Developed)**

For this dissertation, demographics are defined as unique characteristics of each participant that may affect within-sample variance, requiring procedures for statistical control. Age, gender, race, sexual orientation, branch of service, year entered military service, year separated from military service, duty statuses, and approximate timing of trauma(s) are demographic variables chosen to assess various aspects of diversity pertinent to the sample population used for this dissertation research for external validity. They are also included as controls, as previously mentioned, in the overall statistical model attempting to predict overall scores for PTG, helping to avoid multicollinearity from under-identified cluster-groupings within the data. The following subsections provide operational definitions for each. All participant-data relative to demographic variables were collected upon an initial, self-report intake-survey, described in the following sub-sections, prior to taking the rest of the electronic survey instruments.

**Age.** Age was defined as the participant’s age, measured in calendar years since birth. As a reminder, the condition for participation in this study, participants must be at least 18 years of age; however, there are not any maximum-age exclusionary criterion. Participants provided their
ages utilizing a response item that tracks age via 10-year age brackets (beginning at ’18 to 24’ and ending at ‘75 and older’).

**Gender.** The researcher chose to utilize a wide diversity of gender-options to maximize participant-inclusion, as well as to track data for sub-populations that are traditionally underrepresented in the current scholarship on humanism and/or PTG. Options include: Female, male, intersex, transgender, gender non-conforming, and other (please specify). There is also an, “I choose not to answer this question,” option.

**Sexual orientation.** The researcher gathered data on sexual orientation via the following options: Lesbian, gay, straight or heterosexual, asexual, transsexual, bisexual, pansexual, and other (please specify). There is also an, “I choose not to answer this question,” option.

**Race/Ethnicity.** The researcher chose to utilize the same race/ethnicity categories as the United States Census, used to track demographic representation within the military (e.g., for ease of comparison to the demographic variance within the sample population). There is also an, “I choose not to answer this question,” option. Options include: American Indian or Alaskan Native, Asian / Pacific Islander, Black or African American, Hispanic, White / Caucasian, and Multiple ethnicity / Other (Please specify).

**Branch(es) of service.** This response-item asked participants to select all of the branches they served in on a singly survey item. There is also an, “I choose not to answer this question,” option. Branches include: Marine Corps, Army, Navy, Air Force, and Coast Guard.

**Duty Status(es).** This refers to participants’ status(es) while serving as Enlisted personnel, Warrant-Officers, and/or as Officers. There is also an, “I choose not to answer this question,” option.
Year entered military service. This open-ended response item measured the calendar year participants began their respective military-service contracts. There is also an, “I choose not to answer this question,” option.

Year separated from military service. This open-ended response item, measured the calendar year the participant separated from military service. Participants also had the option of, “I choose not to answer this question.”

Humanism (e.g., Personal Meaning): BPMP (MacDonald et. al, 2012)

For the purposes of this dissertation, humanism was defined as the degree to which participants perceive their lives as personally meaningful. Perceptions of personal meaning are operationalized using the Brief Personal Meaning Profile (BPMP) (MacDonald, Wong, & Gingras, 2012). While more information on this measure can be found in Chapters 2 and 3, the BPMP (MacDonald et. al, 2012) is composed of the following seven factors (each corresponding to three survey items):

- **Achievement:** The degree to which participants perceive that they have achieved goals, as defined by the individual participant.

- **Relationships:** How participants perceive the quality and number of connections to others in their lives. Painter, Gray, McGinn, Mostoufi, and Hoerster (2016) found that, “social support buffered against developing symptoms of PTSD and depression, and is associated with greater quality of life,” among a sample of 717 Veterans selected randomly from those that had recently seen a primary care provider.
- **Religion:** The degree to which participants perceive that religion and/or spirituality, *as defined by each individual participant*, provide(s) meaning to their lives.

- **Self-Transcendence:** The degree to which participants perceive that they are free to live a meaningful life *despite* obstacles, such as trauma(s).

- **Self-Acceptance:** The degree to which participants perceive acceptance of both their limitations, as well as their strengths.

- **Intimacy:** The degree to which participants perceive the depth and quality of relationships between themselves and others.

- **Fair Treatment:** The degree to which participants perceive that life h

**Posttraumatic Growth: PTGI-SF**

For the purposes of this research study PTG was defined as, “positive change experienced as a result of the struggle with a major life crisis or a traumatic event” (PTGRG, 2013, p. 1). PTG, according to this definition, can be identified more specifically as occurring within five domains of functioning: Relating to others, new possibilities, appreciation of life, personal strength, spiritual change, and appreciation of life (Tedeschi & Calhoun, 2004; Calhoun & Tedeschi, 2004; Cann et al, 2010). These five domains of PTG, as well as this definition are congruent with the psychometric properties of the Posttraumatic Growth Inventory- Short Form (PTGI-SF) developed by Cann and colleagues (2010) used in this dissertation. A copy of the PTGI-SF (Cann et al, 2010) can be found in the appendix of this dissertation. The following factors compose PTG (Tedeschi & Calhoun, 2004; Calhoun & Tedeschi, 2004; Cann et al, 2010):
• **New Possibilities**: This refers to the degree in which participants perceive that their past-traumas have resulted in new positive-opportunities.

• **Relating to Others**: This refers to the degree in which participants perceive that their past-traumas have resulted in positive changes to how they interact with others in their lives.

• **Appreciation of Life**: This refers to the degree to which participants perceive the finiteness of existence; participants increase awareness of potential vulnerabilities and, as such, increase the degree to which they appreciate existence.

• **Personal Strength**: This refers to the degree in which participants perceive that their past-traumas have resulted in changes to their perceptions of personal resilience.

• **Spiritual Changes**: This refers to the degree in which participants perceive that their past-traumas have resulted in changes to their views on spirituality or religion.

**Operationalization of PTG as a construct.** As previously noted, PTG was measured utilizing Cann and colleagues (2010) PTGI-SF, which includes 10 self-report items. Each item utilizes a 6-point Likert Scale ranging from zero to five (Cann et. al, 2010). Two-items were utilized to measure each of the five subdomains, including: new possibilities, relating to others, personal strength, spiritual changes, and appreciation of life (Cann et. al, 2010). For a description of each item, refer to Appendix B.

**Scoring of PTG as a construct.** Scoring of the PTGI-SF (Cann et. al, 2010) was accomplished by summing each of the 10-items for each participant. Likert Scale options differentiated the degree to which they experienced the change between very small, small,
moderate, a great degree, and a very great degree, including an “I did not experience this change as a result of my crisis,” option. Total scores for PTG-experienced range from zero to 50 (Cann et. al, 2010). All predictors (e.g., controlled demographics and scores for the BPMP) were utilized to predict overall scores of PTG, again, utilizing the PTGI-SF (Cann et. al, 2010) for data collection on PTG.

**Theoretical Frameworks**

Perhaps the most fundamental theoretical assumption underpinning this dissertation’s study is that as assuredly as trauma can cause suffering, it may also result in perceived growth (Calhoun & Tedeschi, 2004; Tedeschi & Calhoun, 2004). Mental health symptoms of trauma that cause suffering, though, are not necessarily affected by experiences of PTG, such as affecting the frequency or severity of symptoms (Tedeschi & Calhoun, 2004). Rather, it is presumed that a meaning-based, humanistic model of PTG (Frankl, 1969) may be utilized to explain the development of PTG comparably to the currently used cognitive-model, though in ways that allow it to also fight the core underlying belief of MMHS, i.e. the full range of post-traumatic experiences are in some way indicative of weakness or abnormality (Ramachand, 2011). Further, humanism may help de-stigmatize reactions to trauma, as well as mental health more generally, by universalizing experiences of an existential vacuum (described in the above sections) in the aftermath of trauma as a normal response, given the irregular conditions for which trauma occurs (Frankl, 1986). This perspective may also encourage empowerment by acknowledging one of the theory’s core tenets, Freedom-of-Will (Frankl, 1979), that promotes the development of an internal locus of control (the cultural value, of which, is determined by the participant) that is consistent with the currently used Transformational Model of PTG (Calhoun & Tedeschi, 2004).
Chapter 2 – Literature Review

The purpose of this study is to examine whether the humanistic constructs of personal meaning (MacDonald et. al, 2012) explain enough variance in Posttraumatic Growth (PTG) outcomes among military veterans identifying with psychological trauma. In this review of the literature, the researcher will first examine the problem of Military Mental Health Stigma (MMHS), as well as suicide among United States Military Veterans (USMVs). A discussion of current research on PTG will occur, including a look at the empirical support for the Posttraumatic Growth Inventory – Short Form (PTGI-SF) (Cann et. al, 2010), the survey instrument used to measure PTG outcomes. Then, the researcher will examine the literature support for the Brief Personal Meaning Profile (BPMP) (MacDonald et. al, 2012), the survey instrument used for measuring personal meaning. A discussion on the interrelation of humanism, personal meaning, and PTG will occur, followed by an exploration of implications for potential outcomes of this dissertation’s study will be examined in accordance with the current literature. This review of the literature is intentionally constructed to flow as an argument, highlighting not only the need for new innovations to fight MMHS, but also, the reasoning behind why a humanistic model of PTG may provide an opportune body of knowledge for which professional counselors can draw from to assist in normalizing and validating the full-range of psychological symptoms, post-trauma.

Trauma-Exposure Among USMVs: Examining the Problem

The United States (US) military has been engaged in a Global War on Terrorism (GWOT), waging large-scale military operations on multiple fronts, since 2001. While an end to ongoing combat operations is unclear for the US, research has begun shedding light on the mental toll affecting its martial participants (DOD, 2013; Jacobson, 2011; Kennedy, 2009). Rates
of trauma exposure and resultant Posttraumatic Stress (PTS; DOD, 2013; Jacobson, 2011; Kennedy, 2009) have rapidly risen since the initiation of the GWOT in 2001, amongst US military personnel (NIDA, 2011). The Department of Defense (DoD), Department of Veterans Affairs, and the Department of Health and Human Services (2013), in their Interim Report, note the need for new methods of ameliorating these issues, in part, by attacking barriers to mental health among USMVs. MMHS has been identified as a significant barrier detracting from the likelihood of USMVs seeking professional mental health assistant, post-trauma, and may be directly associated with USMV-suicide and other mental health issues stemming from trauma-exposure (Ramchand, 2011).

Military Mental Health Stigma (MMHS)

As previously mentioned, MMHS was defined by the researcher as any beliefs held by a USMV that negatively interfere with the decision, acquisition, or relative success of mental health treatment. It was found that more than half of service members that participated in a 2004 study (Hoge, Hammer, & Friedman, 2012) indicated both needing to receive mental health services, as well as, never having received it as a direct result of MMHS. According to some researchers, these kinds of beliefs can, “become internalized into a service member’s identity, persisting in veterans after military service” (Gibbons et. al, 2016, p. 32). Further compounding the effects of MMHS on those who may be most vulnerable, the Land Combat Study (Hoge, Hammer, & Friedman, 2012) also found evidence that those service members who, “met screening criteria for PTSD, depression, or generalized anxiety had a much higher rate of endorsing stigma items than soldiers who did not have a mental health problem” (p.32). This is significant to this dissertation’s study because it is theorized that humanistic understandings of PTG presume participants as the experts of their experiences. Its humanistic underpinnings
would suggest, further, that all people are in some process of either discovering or creating meaning and purpose in their lives, or are actively in the process of living responsibly toward said meanings (Frankl, 1959; 1978; 1977; May, 1975; Yalom, 2008). Those USMVs whom meet the criterion for a mental health issue and endorse aspects of MMHS would be validated in their beliefs, though viewed as being within the stage of discovering or creating personal meaning (MacDonald et. al, 2012; Frankl, 1959).

The military itself places the blame for mental stigmas squarely on the use of the word disorder (Sagalyn, 2011) in the Diagnostic Statistical Manual of Mental Disorders 5 (DSM-5; See: American Psychiatric Association, 2013) and used by mental health professionals to describe and label their symptoms. Perceived weaknesses of any kind are not often validated amongst martial cultures whose profession involves direct, existential threats to personal safety (Ursano, et. al, 2011). The word disease, a harbinger of the medical model (Hansen, 2007; 2010), is often interpreted by service members to suggest that their symptoms of suffering are emblematic of disease and are then, by the proxy of MMHS, a weakness (Ramchand, 2011; Smith, 2014). Research on the positive legacies of trauma (e.g., PTG) are in short supply relative to the available empiricism demarcating trauma’s damaging effects, further impacting the likelihood that trauma-responses are viewed via a disease-framework. The reluctance to seek out needed mental health assistance for fear of MMHS, has been greatly attributed to the staggeringly high numbers of US military personnel that take their own lives each day (Ursano et. al, 2011). According to Calhoun & Tedeschi (2004), this problem may, then, be reduced with an increase in available literature (that may, then, contribute to more positive social mores regarding the validity of mental health struggles) regarding experiences at the other end of the evaluative-continuum, including PTG.
**Suicide among USMVs.** Not including many female-USMVs who took their own lives that were not counted due to identified discriminatory errors in state-reporting, it was found that in 2010, more than 20 percent of all suicides in the United States occurred by USMVs, as indicated on their death certificates, according to a study conducted by the Veterans Affairs (Kemp & Bossarte, 2012). To put this into perspective, the number of USMVs (e.g., who are either currently or have in the past served in the military) in this country remains around 10 percent of the total population, yet they account for more than one-fifth of all suicides in the US (Kemp & Bossarte, 2012). This equates, roughly, to one USMV lost to suicide every 65 minutes in the US (Kemp & Bossarte, 2012). Recognizing that many USMVs reported not seeking professional mental health services for fear of MMHS, the military attempted to advocate by pleading with the American Psychiatric Association (APA) to have the word *disorder* struck from mental health diagnoses, the results of which were unsuccessful (Sagalyn, 2011). If the fight against MMHS is to occur, it is argued here that it must stem from sources outside of the diagnoses themselves, perhaps, beginning with the phenomenon of PTG (Tedeschi & Calhoun, 2004). Another reason that targeting new models of PTG for evaluation may help ease stigma among those at greatest risk is because the population of USMVs at highest risk for endorsing MMHS, happen to be survivors of trauma(s) – the only people who would qualify to potentially develop PTG (having experienced a trauma. The next section will explore the current literature regarding the Tedeschi and Calhoun’s (2004) Transformational Model of PTG, as pertinent to this dissertation’s study.

**Posttraumatic Growth: An Important Ally in the Fight Against MMHS**

As aforementioned, one of the attributed causes of MMHS is that understandings of trauma-responses by mental health professionals and, in some cases, USMVs, often fail to attend
to the potentially positive legacy trauma can leave for experiencers, such as PTG (Tedeschi & Calhoun, 2004). Further contributing to this issue is the apparent dearth of available counseling knowledge for which clinicians can utilize to better explicate the additive gains after traumatic experiences among USMVs. The model of PTG composing the philosophic underpinnings of the outcome variable for this study is Tedeschi and Calhoun’s (2004) Transformational Model of “positive growth that occurs as a result of the struggle with highly stressful life crises” (p.1). This model is referred to as the Transformational Model (Tedeschi & Calhoun, 2006) and asserts that PTG is a phenomenon largely of cognitive changes resultant in additive gains in relating to others, new possibilities, personal strength, spiritual change, and appreciation of life (Cann, et. al 2010). PTG does not insinuate that traumatic experiences are fortunate, nor that its presence negates the perceived suffering of its experiencers (Tedeschi & Calhoun, 2004). Rather, it proposes that some individuals who experience trauma also experience growth resulting from the struggles and challenges of adapting to their lives, post-crises (Calhoun & Tedeschi, 1996; Calhoun & Tedeschi, 2004; Tedeschi & Calhoun, 2004).

According to this model, the development of PTG likely requires, “individual characteristics (e.g., demographics), support and disclosure, and more centrally, significant cognitive processing involving cognitive structures threatened or nullified by the traumatic events,” (Tedeschi & Calhoun, 2004, p. 1). In other words, the ways people made sense of the world – beliefs regarding safety and personal meaning prior to trauma(s) – are disrupted by traumatic experiences. This then requires them to set new goals towards accommodating alternative modes of perceiving and being in the world, post-disturbance (Calhoun & Tedeschi, 2004; Tedeschi & Calhoun, 2004). This is pertinent to the author’s proposed humanistic re-conceptualization of PTG, proffering from a humanistic perspective (Frankl, 1959) that similar
disturbances to people’s meaning-systems (e.g., personal meaning) account for changes in PTG outcomes. This is also a theory backed by Tedeschi and Calhoun’s (2004) own research asserting existential factors (e.g., purpose-in-life) as the greatest known predictor of the phenomenon. Now, we will look at the survey instrument used to measure personal meaning, the humanistic predictors of PTG used for this dissertation’s study.

**How are PTG and MMHS related?** A key, under-researched question in the literature, is whether PTG can positively affect MMHS. Unfortunately, it does not appear that anyone has formally studied the relationship between PTG and MMHS amongst a sample of USMVs. However, Zeligman, Barden, & Hagedorn (2016) examined the role of HIV-related stigmatization as a factor affecting PTG with a sample of 126 adults diagnosed with HIV. Using the Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996) as an outcome measure (the parent form of this dissertation study’s PTGI-SF; See: Cann et. al, 2010), a study by Zeligman and colleagues (2016) showed that stigmatization of HIV contributed significantly as a barrier to PTG having reportedly occurred amongst the sample population of patients with HIV. This may be significant to this dissertation’s study because it could suggest that the presence of MMHS among USMVs, like HIV-stigmatization, may negatively affect PTG outcomes utilizing the parent version (Tedeschi & Calhoun, 1996) of the PTGI-SF (Cann et. al, 2010) used as this study’s criterion measure.

This may evidence that a pre-existing barrier exists preventing the current construct of PTG from being used to combat MMHS most effectively. These findings (Zeligman et. al, 2016) could also speak to limitations in the predominant Transformational Model’s (Calhoun & Tedeschi, 2004) ability to positively affect attitudes and beliefs about post-traumatic responses, *in spite of* MMHS. In other words, perhaps the cognitively-based model of PTG, argued by the
author as being strongly consistent with the medical model (Yalom, 2002), may have little effect on stigma, negating growth in the aftermath of trauma, such as having received a diagnosis of HIV. However, if a model of PTG was developed that aligned more closely to the mission of combating MMHS, it may help to normalize the full range of experiences due to its propensity to view mental health systems as normal responses to abnormal situations (Frankl, 1959), consistent with its humanistic underpinnings. This may also support the rationale of developing the future studies examining whether humanistic models of PTG like the one in this study have a positive effect on diminishing the predominance of MMHS in the military and among survivors of trauma.

The Posttraumatic Growth Inventory – Short Form (PTGI-SF). The Posttraumatic Growth Inventory – Short Form (PTGI-SF) (Cann, et.al., 2010) utilized in this study includes 10, self-report items. Each item utilizes a 6-point Likert Scale ranging from zero to five (Cann et. al, 2010). Two-items were utilized to measure each of the five subdomains, which including: new possibilities, relating to others, personal strength, spiritual changes, and appreciation of life. From this framework, then, additive gains, in the aftermath of trauma(s) generally manifest as recognition of new opportunities, more positive modes of relating with others, increased awareness of one’s resilience, alterations to one’s spiritual or religious beliefs, and increased appreciation of life and existence due to a recognition of the finiteness of life. Cann and colleagues (2010) used confirmatory factor analysis, finding that the PTGI-SF “demonstrated a five-factor structure for the PTGI-SF equivalent to that of the PTGI” (p. 127), consistent with the longer version. They also found that when the items on the PTGI-SF are provided to participants in a random order, relative to their hierarchical-ordering in the parent form, they provided a near equivalent measure of PTG with “little loss of information” (Cann et. al, 2010, p. 127),
indicating that it can be used in lieu of the longer PTGI. A limitation of this study, however, is that it did not utilize longitudinal data, meaning many variables were potentially left uncontrolled, confounding the results of this study across time. As such, Cann and colleagues (2010) recommend only utilizing the PTGI-SF when estimating or predicting total scores for PTG – a method consistent with that proposed in this dissertation’s study.

**Humanism and Personal Meaning: An Alternative Foundation for Posttraumatic Growth**

**Humanism.** In theoretical-contrast to those counselors who utilize a reductionistic, medicalized-approach to conceptualizing mental health, humanistic clinicians strive to attain a multi-dimensional, client-driven (e.g., the client’s phenomenological insights as interpreted through the lens of the counselor) understanding of the issues presented in counseling (Hansen, 2009; Wampold, 2007; Elkins, 2012). Due to the holistic nature of humanistic approaches to assessment, many aspects of clients’ lives that often go left unattended by more traditional psychometric assessments, such as personal meaning (Frankl, 1959; MacDonald et. al, 2012), are attended to as important indicators of wellness. Humanism acknowledges the existence of biological disease and intra-psychic torment, like the medical model (Yalom, 2002). Furthermore, humanism attends to the factors that may actively contribute to the wellbeing of clients (Frankl, 1959. The counselor-client relationship is seen as the main vehicle that facilitates positive treatment outcomes (May, 1975; Wampold, 2001; 2005, 2007; Norcross, 2011). It is through relationships, marked by the validation of people’s ability to heal themselves that (Frankl, 1959; May, 1975) that clients are able to identify or create changes to their perceptions of personal meaning (MacDonald et. al, 2012).

From this perspective, therapeutic relationships then results in cognitive, behavioral, and spiritual changes (Norcross, 2011, Rogers, 1994) consistent with the Transformational Model of
PTG (Tedeschi & Calhoun, 2004). Further, existentialism, a form of humanism, asserts that what helps to ensure clients achieve wellness is their abilities to either find or create personal meaning from their situations (e.g., PTG) (Frankl, 1959). From this framework, people would then have likely been aided via being able to process their experiences within the safety of a relationship that prioritizes validation of clients as the only valid experts of their lives (Frankl, 1977; May, 1975; Yalom, 2008; MacDonald et. al, 2012). From a humanistic-perspective, perceptions of safety by clients that are USMVs, rely heavily on efforts by all parties to protect the therapeutic relationship from potential-reinforcement of MMHS, which may be largely facilitated by allowing clients, in general, maximum space to interpret their experiences on their own (May, 1975). The focus of humanistic interventions often relates to how their clients’ biological, cultural, psychological, spiritual, and social contexts, among others, affect systems of personal meaning and indirectly, therapeutic rapport, helping to inform their current, past, and future wellness (Frankl, 1959; Wampold, 2005; 2012).

Conjunctively, treatment goals for humanistic counselors tend to be constructed in collaboration with their clients, as opposed to via pre-established goals initiated by the clinician. Humanistic treatment goals tend to revolve around client-strengths (e.g., PTG) and how the interpersonal dynamics that exist within their relationships to their counselors may help to inform how they relate to others outside of counseling (Frankl, 1959). Symptomology that causes suffering is not at the forefront of humanistic interventions. This is something that is consistent with the research suggesting that PTG does not, necessarily, diminish Post-Traumatic Stress (Tedeschi & Calhoun, 2004). Rather, humanistic counselors help their clients progress towards healing as an indirect effect of maintaining positive relationships and as a product of acting on life-choices with personally meaningful consequences (Frankl, 1959; Lemberger, 2012; Hansen,
Personal meaning is discovered within the counseling relationship itself (Norcross, 2011).

Though humanistic counselors make use of quantitative evaluation, the focus of assessment typically relates to the processes that influence the therapeutic relationship, including those that govern the discovery or creation of personal meaning (Frankl, 1959; MacDonald et. al, 2012). Humanists purport that subjective phenomenon, like the intra-psychic torment sometimes resultant from depression (American Psychiatric Association, 2013), cannot necessarily be reduced to measurable components that accurately depict the entirety of its existence, thus often leading to the integration of qualitative assessments that provide a more holistic understanding of what may be occurring (Hansen, 2012; Lemberger, 2012).

Though the field of counseling in the US was built with intentions specific to vocational guidance, it was also heavily influenced by the humanistic-ideologies of the already well-established fields of psychiatry (See: Frankl, 1959; Yalom, 2002) and psychology (See: Rogers, 1995). Furthermore, humanistic perspectives developed out of work toward meeting specific mental health needs among USMVs returning home from World War II (Gladding, 2013). These paradigms, still very much existent in the field today, are typically characterized as having a person-specific, holistic scope of clinical foci that attend to multiple aspects of clients’ lives that could be affecting their overall-wellness (Marquis et. al, 2011). Consequently, their definitions of successful treatment-outcomes are not limited to ameliorating the clients’ presenting-concerns, such as minimizing Post-Traumatic Stress (PTS) symptoms. Rather, they also include ancillary-factors that may affect their wellness, such that a treatment for depression may focus on enhancing an awareness of potential sources of personal meaning (Frankl, 1977) or work to increase clients’ perceptions of social-connectedness by building a peer-support network.
(Herman, 1997). These ideas are consistent with the relationship between social support and PTG proposed by Tedeschi and Calhoun (2004).

Perhaps most pertinent to this dissertation’s research question and its mission of helping to reduce MMHS through infusion of wellness-based perspectives in military mental health is that it does not solely view PTS as a disorder (e.g., PTSD). Humanism proffers the importance of helping to ensure experiencers are aware that their mental health struggles are not, by definition, abnormal, given what they went through (Frankl, 1959). Further, a humanistic perspective would acknowledge a full spectrum of experiences in the aftermath of trauma, inclusive of any potential additive gains. According to Frankl (1959), humanism incorporates a perspective that human begins are constantly in the process of attempting to actualize a personally-meaning life. Further, he notes that the potential for finding or creating meaning-in-life is ever-present, both in times of prosperity, as well as, despair – a normal fact of existence (Frankl, 1959). PTG, then, would be viewed by those ascribing to this alternative model of PTG, as a further means of validating the relative social “acceptability” of processing a wider-range of experiences among USMVs, assuming they will also be perceived as normal responses to abnormal situations (Frankl, 1978). This cognitive processing by survivors of trauma is referred to as “rumination”, or cognitive hyper-reflection on one’s current circumstances, in the Transformational Model of PTG (Tedeschi & Calhoun, 2004), used as this dissertation study’s outcome variable.

This idea is significant, in part, because it evidences that PTG, from within a humanistic framework, may be able to affect positive socio-cultural change within military systems by balancing what people think about trauma and responses in its aftermath. The researcher has argued that humanism provides an opportune theory to test against PTG, as an alternative to the medicalized Transformational Model (Calhoun & Tedeschi, 2004) currently used with USMVs.
It was also shown that personal meaning is a core tenet of humanism, is a prime construct to test as an explanatory or predictor of PTG outcomes due to its strong correlational relationships (Calhoun & Tedeschi, 2004; Tedeschi & Calhoun, 2004; Tsai et. al, 2015). The researcher will now examine pertinent literature regarding personal meaning (MacDonald et al., 2012), as well as a valid and reliable instrument for evaluating its pre-operationalized constructs.

**Personal meaning.** According to Macdonald, Wong, and Gingras (2012), people tend to develop personal meaning regarding seven general areas described in Chapter 1: Achievement, relationships, religion, self-transcendence, self-acceptance, intimacy, and fair treatment. These categories of meaning were largely derived from Logotherapy, a theory of counseling proffering that the search for a meaningful life is the basic human motivation (Frankl, 1959). Aligning strongly with Logotherapy (Frankl, 1959), these factors of meaning (composing the BPMP used in this study) may support Frankl’s (1959) research on common sources of personal meaning. For example, Frankl (1959) notes that people often find meaning in loving another and being loved. MacDonald and colleagues (2012) would define these kinds of factors of meaning more specifically in terms of items targeting perceptions of relationships and intimacy on the BPMP (a survey used in the prediction of PTG-outcomes in this study). According to Logotherapy (Frankl, 1959), traumas affecting personal meaning are not cognitive changes, like the Transformational Model of PTG (Calhoun & Tedeschi, 2004). Rather, Logotherapy suggests that post-traumatic alterations to one’s mental health revolve more around how the trauma(s) may affect personal meaning. From this perspective, post-traumatic alterations such as PTS and PTG may be understood from a spiritual (e.g., meaning-based) perspective (Frankl, 1959), potentially paralleling MacDonald and colleague’s (2012) factor of religion. It may be important to note that spirituality, as defined by Frankl’s (1959) humanism, is not necessarily synonymous with
religiosity (as this framework would suggest that all things that give life meaning are spiritual), though it can be, if religion is where people find personal meaning. Finally, and perhaps most congruent to PTG (Calhoun & Tedeschi, 2004), is Frankl’s (1959) belief that humans can find meaning in suffering, such as that experienced by USMVs after trauma(s). Wong’s (2010) theory on personal meaning accounts for growth from suffering (e.g., PTG) in its factors of self-transcendence, self-acceptance, achievement, and fair-treatment (MacDonald et. al, 2012). The researchers will now examine the empirical evidence supporting the use of the BPMP (MacDonald et. al, 2012), the survey instrument used in this dissertation study to measure personal meaning, as an indicator of PTG-outcomes among USMVs.

*The Brief Personal Meaning Profile (BPMP).* According to MacDonald and colleagues (2012), the BPMP’s minimizes the limitations of similar measures, thus being able to provide a “rich and comprehensive picture of what makes life worth living” (p. 375). They found that, relative to the parent version the Personal Meaning Profile (PMP), the subscales on the BPMP correlated strongly, accounting for 72 percent of the variance on PMP subscale-outcomes (MacDonald et. al, 2012). A study using 1,212 adult respondents of diverse cultural, educational and socio-economic backgrounds yielded a correlation matrix between the PMP and the BPMP, “suggesting clear discrimination among the subscales,” (p.373). Internal consistency, evidenced as excellent for three out of four subscales on the PMP, was checked via Cronbach’s alpha (> .70) (MacDonald et. al, 2012). Test-retest reliability for the BPMP was found to have a .73 correlation and the total correlation to the PMP was .95 (MacDonald et. al, 2012). A combined sample of Canadian high school students and Australian university students, including, “a large proportion of immigrants from diverse backgrounds,” demonstrated strong stability of the subscales for the BPMP in measuring personal meaning (MacDonald et. al, 2012). Now that the
researchers have examined how humanism was defined and was measured via personal meaning (MacDonald et. al, 2012), an argument grounded in theory and philosophy will be made towards the development of a humanistic model of PTG.

**Toward a Humanistic Model of PTG**

Having examined both the Transformational Model of PTG (Calhoun & Tedeschi, 2004), as well as the empiricism backing personal meaning (MacDonald, et. al, 2012) as a means of predicting PTG-outcomes, the researcher will now attempt to demonstrate how these philosophies align on a theoretical level. An outline of the interrelation of humanism (Frankl, 1959), personal meaning (MacDonald et. al, 2012), and PTG (Calhoun & Tedeschi, 2004) will be provided. Finally, a discussion aimed at exploring potential answers to the question of whether a humanistic model of PTG could be more effective in combating MMHS (the rationale for this dissertation) will close out Chapter 2.

**The interrelation of humanism, personal meaning, and PTG.** Thus far, the author has shown that humanism is theoretically distinct from the medical model (Yalom, 2008), making it a potentially strong fit as a theory of counseling that may help destigmatize MMHS, beginning a response to the military’s request for de-medicalization of mental health (Sagalyn, 2011). Personal meaning (MacDonald et. al, 2012) was chosen as the predictor in this study due to its congruence with humanism, as well as its strong empirical backing as a robust predictor of PTG-outcomes (Frankl, 1977; Tedeschi & Calhoun, 2004; Tsai et. al, 2015). The researcher’s attempts to explore theoretical congruence between personal meaning (MacDonald et. al, 2012) and PTG (Calhoun & Tedeschi, 2004) begin with Frankl’s (1959) Logotherapy. Logotherapy (Frankl, 1959) forms the philosophic core of Wong’s concept of personal meaning (MacDonald et. al,
2012), the theory of humanism underlying the development of the construct’s measure in this dissertation study, the BPMP (MacDonald et. al, 2012).

*Logotherapy.* Logotherapy was developed by Viktor Frankl (1959) prior to World War Two, when he and his family were already preparing for the onset of war. Logotherapy’s main three tenets are: Meaning in life, will to meaning, and freedom of will (Frankl, 1959). Meaning in life presumes that personal meaning (MacDonald et. al, 2012) exists for all people, under all circumstances (Frankl, 1977). This, then, also must hold true for USMVs prior to, during, and in the aftermath of trauma. Will to meaning presumes that the basic human motivation, at its core, revolves around the search for personal meaning (MacDonald et. al, 2012), a critical aspect of mental wellness (Frankl, 1959). Finally, freedom of will suggests that people are both *free to make choices regarding actions or attitudes* and responsible towards discovery or creation of personal meaning (MacDonald et. al, 2012) under all circumstances, such as in the aftermath of trauma. Frankl (1959), later imprisoned in four NAZI concentration camps, was fortuitously able to more completely explicate his theory and therapy of Logotherapy prior to his death in 1997. The seven factors that compose the construct of personal meaning are largely derived from Frankl’s later writings on Logotherapy (MacDonald et. al, 2012). These same ideas may also be used to adequately explain PTG-development in the aftermath of trauma among USMVs, on a sound theoretical level.

**Personal meaning and PTG among USMVs.** Both Logotherapy (Frankl, 1959), as well as Calhoun and Tedeschi’s (2004) Transformational Model of PTG agree that trauma(s) significantly disrupt(s) perceptions of personal meaning among survivors. The ways that people once made sense of the world, described via cognitive-theory in the Transformational Model of PTG (Calhoun & Tedeschi, 2004), can also be explained using the three core tenets of
Logotherapy (Frankl, 1959). Logotherapy (Frankl, 1959), the foundation of the personal meaning (MacDonald et. al, 2012) predictors used to predict PTG-outcomes suggests that personal meaning can be found even under the abnormal circumstances of trauma. As trauma is abnormal, all responses (e.g., cognitive, spiritual, behavioral, etc.) are normal, though it still the responsibility of survivors to recognize their freedom of will. The seven factors of personal meaning (MacDonald et. al, 2012), it is theorized for this dissertation, may then also be indicators of PTG-outcomes. As a presumption for all people, according to Logotherapy (Frankl, 1959), all humans will seek personal meaning when they no longer perceive it, such as when it is disrupted by trauma(s). Finally, PTG-outcomes according to the Transformational Model (Calhoun & Tedeschi, 2004), would be considered indicators of personal meaning (MacDonald et. al, 2012) at various phases of personal meaning re-construction in the wake of participants’ traumas.

**Suspected Interrelation of Demographics, Personal Meaning, Trauma, and PTG**

Using a researcher-developed Demographics Survey Questionnaire, the researchers intend to gather participants’ ages (e.g., in 10-year age brackets only), gender-identities, races/ethnicities, sexual-orientations, approximate timing of self-reported trauma(s) (e.g., before, during, or after military service), branches of military service, dates of military service (just calendar-years), whether they have experienced trauma as both screening-items (age, Veteran-status, and the ‘yes’ or ‘no’ item to having had an experience of trauma while in the military). These demographic variables are collected and implemented as experimental controls during data analysis. Personal meaning (MacDonald et. al, 2012) and PTG (Cann et. al, 2010) may differentially affect participants based on age, gender-identification, sexual-orientation, branch of service, and calendar-years served while trauma may also differentially affect these groups. This
results in multi-collinear, non-normative data sets that fail to conform to the philosophic assumptions underlying Hierarchical Multiple Regression (HRM) analysis (Heppner et. al, 2014). This would result in un-reliable, invalid statistical outcomes. Further, there is a dearth of research for how trauma may affect female USMVs and USMVs that are members of the LGBTQIA community, allowing this research study to help provide alleviation and assistance to these often under-represented and under-researched groups. Information on each demographic variable is provided in the following sections.

**Age.** Settersen (2006) proffers the importance of controlling for demographic variables when attempting to explore the unique effects of military service on individuals and communities. As this dissertation sought to understand whether humanistic variables can help to explain the positive-legacies of trauma, referred to as PTG (Calhoun & Tedeschi, 2004), controlling for demographic factors such as age becomes increasingly important (Chatterjee, Spiro, King, King, & Davison, 2009). Chatterjee and colleagues (2009), having reviewed the available literature on PTSD across the lifespan among USMVs, note that traces of Post-Traumatic Stress (PTS) symptoms can be found along the entire lifespan of most USMV’s in the sample populations. Perhaps more pertinent to this dissertation is the research conducted by Feder, Southwick, Goetz, Wang, Alonso, and Smith (2008). Having examined a sample (n = 30) of former USMV Prisoners of War (POWs) from the Vietnam-era, the authors found that 63 percent reported experiencing at least moderately-positive changes qualified as PTG, 39 years after their release. As such, this dissertation study did not limit participation based on age, as symptoms of PTS and PTG can be found across the lifespan of USMVs (Feder et. al, 2008). Age may still differentially affect PTS contained within specific chronological eras, defined also in how their experiences differ in severity and frequency.
This dissertation study is heavily-grounded in a rationalization to develop tools towards combating MMHS that dispirit attempts at seeking out mental health services. Lu, Carlson, Duckart, and Dobscha (2012) examined the effects of age on initiation of mental health treatment after diagnoses of PTSD are given during VA primary-care screenings with a sample size of 71,039 USMVs receiving medical care at the VA. According to Lu and colleagues (2012), “Older veterans, compared with veterans less than 30 years old, were less likely to attend any specialty mental health visits after positive PTSD screens” (p. 654). This is significant to this study for multiple reasons, as the proposed humanistic model of PTG is intended to provide information to those who may need mental health services that proffer potentially more positive-outcomes from both trauma, as well as mental health services. If, indeed, USMVs over the age of 30 are significantly less likely to seek mental health services, allowing participants from this group to participate in the proposed study may increase the reliability of any outcomes to, in particular, a group of USMVs with a history of trauma that are less likely to seek out treatment (Lu et. al, 2012).

**Race.** Koo, Hebenstreit, Madden, Seal, and Maguen (2015) explored race as a factor influencing mental health among a sample size of 792,663 Iraq and Afghanistan Veterans. Using deployment rosters containing demographic information obtained by the VA, the researchers used Log-Binomial Regression to assist in predicting mental health outcomes based on demographic variables (Koo et. al, 2015). According to the researchers, “demographic and military characteristics between racial/ethnic groups were significantly different (p < .0001), and racial/ethnic groups were not equal in terms of the prevalence of rates of mental health diagnoses” (Koo et. al, 2015, p. 730). This is significant to this dissertation’s study because it evidences the need for controlling race as a demographic variable that could potentially act as
Statistical “noise” making inferences based on outcomes less valid and reliable (Field, 2013). Statistical noise, for the purposes of this dissertation, may manifest when participants of European descent, showing increased rates of anxiety compared to non-European USMVs (Koo et. al, 2015), likely negating adequate control of within-group variance in the sample population, sans entering race as a control in the proposed statistical model. While race can act on and influence mental health variance within USMVs (Koo et. al, 2015), collection of data on participant-gender may also help to minimize the likelihood of statistical noise in carrying out the proposed dissertation study.

**Gender.** Maguen, Cohen, Ren, Bosch, Kimerling, and Seal (2012) sought to understand gender differences in Military Sexual Trauma (MST) and other factors influencing mental wellness through data-mining the VA medical-records of a population of 213,803 USMV’s that served in Iraq, Afghanistan, or both. All USMVs studied also possessed a diagnosis of PTSD (Maguen et. al, 2012). Using descriptive statistics and Multivariate Logistic Regression, their evidence suggests that 31 percent of females had also reported at least one incident of MST, compared to one percent for male participants (Maguen et. al, 2012). The conjunctive nature of dual-MST and PTSD diagnoses appeared more likely to also include depression and anxiety for female participants and the male participants reporting both PTSD and MST evidenced an increased likelihood of substance-use (Maguen et. al, 2012). This is significant to this dissertation’s study, in part, because it evidences the need for controlling gender to avoid possible influences on the outcome of the proposed study by way of under-identified sub-groupings within the sample population (Field, 2013) of USMVs. The study conducted by Maguen and colleagues (2012), again, evidences the use of regression towards delineating the
unique contributions of multiple psychological factors on an outcome within a sample population of USMVs, like the HRM and sample population proposed for this dissertation.

**Sexuality.** In 2011, the US military rescinded “Don’t ask, Don’t Tell” (DADT) the federal guidelines prohibiting discussions regarding sexuality within the country’s military. The reason DADT was initially implemented in the US military was because of countless reports evidencing unfair, discriminatory treatment, including dishonorable discharges, for not being heterosexual. This policy mainly affected those USMVs that identify as Lesbian, Gay, Bisexual, Transgender, Queer, Questioning, Intersex, and Asexual (LGBTQQIA), as well as those who identify as Pansexual. In reality, this only forced USMV-members from this community to serve in a work-environment that explicitly disallowed them to serve openly regarding their sexuality, experiences that were inherently traumatic. Further, after the rescindment of DADT, USMVs that choose to serve openly regarding their sexuality still may face harsh backlash from their heterosexual and cisgender peers, such as through usage of discriminatory slurs or differential treatment at the expense of non-heterosexual USMVs. As trauma and discrimination are strongly linked and may, then, also affect PTG-outcomes, it is imperative to attempt to collect data on participant-sexuality and gender. While participants may choose to select the, “I choose not to respond to this question,” option, gathering this data may help more than just as experimental controls, but also as a source of research data for a sub-population that is under-represented in the research literature.

**Branch of service.** Branch of service was added to the list of demographics as a potential point of inquiry for the discussion of particular findings from this dissertation. There appears to have not been any studies conducted on MMHS, nor in relation to humanism, trauma and PTG, that allows for an examination of these constructs as predicted by branch of service. Branch of
service, as a distinct entity catering to a complexity of cultural and sub-cultural norms influencing attitudes regarding mental health, findings of this study may suggest new, important areas of inquiry targeted at branches, for example, that see fewer cases of PTG, post-trauma. This consisted of one, open-ended response item.

**Duty statuses.** Duty status options available to choose from include: Enlisted, Warrant-Officer, and Officer. This demographic variable may be important to this study because the duty status is directly correlated to education-level (e.g., Officers must possess at least a Bachelor’s Degree), time in the military (e.g., promotions from Enlisted to Warrant-Officer requiring both time and success while serving), and financial wellbeing (e.g., in order from least pay to most: Enlisted, Warrant-Officer, Officer). As educational attainment, time in the military, and financial wellbeing may effect both perceptions of life meaning, as well as, PTG outcomes, these demographic variables were included as experimental controls. This consisted of one survey item, allowing participants to select as many as apply. Participants may also choose to select the, “I choose not to answer this question,” option.

**Approximate timing of trauma(s).** This dissertation included approximate timing of participants’ self-reported trauma(s) to allow the researcher to differentiate the effects of military service on both perceptions of life meaning as well as PTG outcomes. Participants are asked to select as many as are applicable, choosing from four options: Before military service, during military service, after military service, and “I choose not to respond to this question.”

**Can a humanistic model of PTG be more effective in combating MMHS?**

Humanism and, in this case, Logotherapy (Frankl, 1959), suggest that reconstruction of personal meaning (MacDonald et. al, 2012) requires faith that participants, *in spite* of the influences of their respective traumatic-contexts, perceive that their mental-wellness can still be
“pulled” (or directed) by actions or attitudes directed by a purpose (e.g., the three core tenets of Logotherapy; See: Frankl, 1978). Thus, a humanistic model of PTG can potentially empower a sense of hope among USMVs. A core tenant of Yalom’s (2008) humanistic-existentialism, also developed with a Logotherapeutic (1959) foundation, notes *instillation of hope* as a factor of effective group counseling. Further, hope, as perceived by clients, has been identified as one of the most robust predictors of positive treatment outcomes in counseling, regardless of the presenting issue (Wampold, 2007; 2012; Norcross, 2011). Based on this idea’s validity and reliability, it may also include more positive treatment outcomes for USMV-survivors of trauma that are at highest risk for endorsing MMHS (Hoge et al., 2012). MMHS may negatively influence perceptions of hope by decreasing the likelihood of seeking out professional mental health assistance (Hoge et al., 2012). Yet, PTG may be missing some chances to assist in providing these kinds of hopeful opportunities due to its alignment with the medical model (Tedeschi & Calhoun, 2004). Thus, it is a long-term hope of this study that a humanistic model of PTG may be a more effective approach at addressing MMHS among USMV survivors of trauma. Chapter 3 examined the methodology and procedures used to test the humanistic model of PTG proposed in this dissertation’s study.
Chapter 3 – Methodology

In this chapter is a description of research design and analysis plan used to test if personal meaning (MacDonald et al., 2012) explains a significant amount of variance in Posttraumatic Growth (PTG) (Calhoun & Tedeschi, 2004) outcomes. The researcher used Hierarchical Multiple Regression (HRM) analysis to determine whether the seven sources of personal meaning (MacDonald et al., 2012) explain a statistically significant amount of variance in PTG-outcomes, while being able to control for demographic and military-factors (Field, 2013). This form of analysis allowed the researcher to examine the unique contributions of each set of predictor variables (i.e., source of personal meaning identified by MacDonald and colleagues [2012]) in the model towards the prediction or explanation of the outcome (McKinnon, 2008), PTG. Furthermore, HRM allows the researcher to determine the ordering of variables into the proposed statistical model, per the theory of humanism (Frankl, 1959; MacDonald et al., 2012), for theory-testing.

Petrocelli (2016) performed a meta-analytic examination of counseling research articles accepted into the Journal of Counseling and Development (JCD), as well as the Journal of Counseling Psychology (JCP) between the years of 1997 and 2001. He notes that HRM is a powerful application of statistics, appropriate for exploring both predictions and explanations of counseling phenomenon that has seen a spike in usage, counseling field-wide (Petrocelli, 2016). Cohen (2001) notes that HRM is especially suited for testing theory-driven assumptions with adequate measures for predictors and criterion variables. Per Cohen’s (2001) assertion that HRM also requires robust measures, the researcher will follow the section on research questions and hypotheses with a look at the psychometric properties and scoring procedures for the surveys used in this research study.
Research Question and Hypotheses

Can the humanistic construct of personal meaning (defined by MacDonald et. al, 2012) account for a significant amount of variance in PTG-outcomes (Cann et. al, 2010), when controlling for demographic and military variables (via the Demographics Survey Questionnaire) among United States Military Veterans (USMVs) self-reporting a history of trauma?

Null Hypothesis

The overall statistical model – including all controls and predictors – will not account for a significant amount of variance in overall scores for PTG among the sample population (α = .05).

Equation notation of the null hypothesis. The equation notation, as well as pertinent clarifying information, for the null hypothesis of this dissertation study’s research question are as follows:

- Ho = ΔR² = 0, or
- Ho = Model 1 R² = Model 2 R², or
- Ho = Model 1 R = Model 2 R

‘Model 1,’ otherwise referred to throughout this manuscript as the initial model, refers to the first statistical model that is entered into the statistical software as a point of comparison for measuring changes to the amount of overall variance accounted for by the alternative model.

Model 1 requires all of the variables, whether or not they are to be utilized as a control or as a predictor, to be entered simultaneously towards the prediction of overall scores for PTG using the PTGI-SF (Cann et. al, 2010). Model 2 refers to the alternative hypothesis, described further in the section below, that require entering variables into the model in accordance with humanism.

Alternative Hypothesis
The overall model, including all controls and predictors ordered in accordance with humanism, will account for a significant amount of variance in overall scores for PTG amongst the sample population (\( \alpha = .05 \)), according to the alternative hypothesis.

**Equation notation of the alternative hypothesis.** The equation notations as well as pertinent clarifying information for the alternative hypotheses of this dissertation study’s research question are as follows:

- \( H_1 = \Delta R^2 > 0 \), or
- \( H_1 = \text{Model 1 } R^2 > \text{Model 2 } R^2 \), or
- \( H_1 = \text{Model 1 } R > \text{Model 2 } R \)

‘Model 2’ refers to the statistical model wherefore the researcher enters all demographic information acting as experimental controls, prior to entering overall scores for the seven factors of personal meaning (MacDonald et al., 2012) – added to the model simultaneously in one-step – towards the prediction of overall scores for the PTGI-SF (Cann et al., 2010). This ordering of variables is consistent with the theory of humanism assumed for the purposes of this study (Frankl, 1959; MacDonald et al., 2012), as well as, the extant research (See Calhoun & Tedeschi, 2004; Tedeschi & Calhoun, 2004; Tsai et al., 2015).

**Participants and Sampling**

The participants were USMVs with a self-reported history of traumatic-experience, as the initial problem of concern is how to make a more effective model of PTG (e.g., requiring trauma-exposure) to fight MMHS among trauma-survivors who have served in the military. Because of factors limiting the availability of USMVs, including MMHS and the restrictions enforced by the Department of Defense’s Institutional Review Board (DoD IRB), all participants utilized were not be accessed via government sponsored resources, such as Veterans Administration (VA)
medical records or other DoD-affiliated institutions. Participants were also unable to participate on property owned by the US government (M. Eckart, personal communication, October 27, 2016).

**Inclusion-Exclusion Criterion**

All participants were required to be at least 18 years of age; however, there were not any maximum-age exclusionary criterion. Participants also were required to meet the criterion in the preceding section describing the participants. Perhaps most importantly, participants were required to both have a history of trauma - relying on the honor-system as this will not be reliably verifiable by the researcher - as well as have served in the United States military for any length of time. As trauma can come from a variety of sources, participants will not be required to have deployed to participate in this study. Finally, with permission from the University of New Mexico’s IRB, participants were not required to give consent as this study was anonymous and all participant-data was de-identified, qualifying for an IRB-exemption.

**Power-Analysis, Sampling, and Sampling Procedures**

According to Heppner and Heppner (2004), as well as Field (2013), the requisite sample size required for regression analyses approximates between 10 and 15 participants per variable entered into the model. While this would equate to between 60 and 75 participants, a more precise way to estimate requisite sample size for regression analyses exists known as ‘power analysis’, that was utilized in lieu of the approximation-approach.... Power analysis was used to determine the minimum number of participants (85) required to derive valid and reliable results of the research study. This type of power analysis is used (e.g., in HRM), to ensure that the minimum number required was sufficient for the type of analyses used to answer the research question (Soper, 2016). Thus, 85 participants, in theory, would provide an overall statistical
power-level of .80 to minimize the possibility of type-I error, for a calculated probability (e.g., p-value) of .05 to minimize the likelihood of type-II error. The researcher chose .80 statistical power level as consistent with Ellis (2010), whom deemed this as the minimum for drawing statistically valid conclusions (i.e., external validity). Accordingly, it is assumed that power is a function of the effect sizes of the variables used as predictors (McKinnon, 2008). This information was entered into a free power-analysis software developed by Daniel Soper (2016), specifically for use in HRM analyses, known as an “a-priori sample size calculator.”

**Sampling and sampling procedures.** Snowball sampling was chosen because, according to Berg (2006), Heppner and colleagues (2015), and Burns (personal communication, November 1, 2016), this method of sampling is often the quickest and most effective way to gain access to a large sample size and from sample populations that may be difficult to identify. As this research study is seeking, in the long-term, to be applied towards helping de-stigmatize mental health struggles (i.e., particularly stemming from traumatic experiences), many participants may have experienced negative consequences in the past or present for disclosing mental health struggles in the aftermath of their self-reported trauma(s) (Ramachand, 2011). As such, making participation in this research study anonymous is a way of both protecting participants, as well as encouraging their recruitment of others that may fit the inclusion-exclusion criterion requisite for participation (Berg, 2006). The researcher began the snowball sampling process by posting the marketing material on the researcher’s various social media accounts, described in the section on recruitment, as well as by contacting all of the researcher’s military contacts via either email or phone, described above. To protect anonymity and de-identification, no lists of the SI’s military contacts used will be developed or used by the researcher; however, to evidence it’s potential for recruitment, there are 65 individuals (email and cell phone contacts, combined) that the
researcher already has contact information for as friends and were used for recruitment within this research study.

Anyone whom chose to repost the research study’s marketing material after seeing it on their social media news feeds will also, then, be assisting in recruiting the necessary number required for this research study (n = 85). The researcher’s social media friends and family have all agreed to post this research study’s advertisement to begin the snowball sampling process. Finally, as aforementioned, any Veterans Facebook groups that agree to assist by posting the marketing material on their groups’ walls will potentially expose millions of USMVs to this opportunity that could meet the criterion for this research study.

Identification of participants and recruitment procedures. All participants were identified initially through electronic recruitment. As the population is United States Military Veterans (USMVs) with a self-reported history of trauma, the researcher used the researcher’s own personal network of thousands of prior-military colleagues to attempt recruitment to provide their responses (anonymously and de-identified), as well as to recruit others within their networks that may meet the criterion for this research study. That said, the researcher communicated the research study’s recruitment material to those military colleagues the researcher has email or phone contact information for, via the respective messages submitted with this IRB application, that the researcher believes meet the criterion for this research study or know someone that might that they could forward the research study information to. The researcher used personal Facebook and Instagram accounts to submit the research study material onto the news feeds of the followers of the SI on those respective social media networks.

Those Veterans Facebook groups identified in the section above were chosen because they represent a broad collection of non-government funded, groups catering to a diverse range
of Veterans (general USMVs, as well as USMVs representing specific subgroups of USMVS [e.g., Veterans for Peace, LGBT Veterans, Female Veterans]) that represent often under-represented populations within mental health research, as well as groups that are likely to have higher numbers of trauma survivors based on their cultural, sexual, or gender identities. As Veterans Facebook groups are only asked to assist by putting the marketing material on their groups’ walls, no specific individuals are identified, nor contacted by anyone on the research staff, described below. A copy of the message the researcher sent to the moderators of each Facebook group (e.g., by the researcher’s Facebook account) is delineated in Appendix “X”.

**Initial contact and access to the population.** This was made via the recruitment material advertised on social media, or via emails/text messages from the researcher (e.g., containing the same material). All subsequent participants received initial contact by previous participants of the research study, that then identify and recruit others they believe to meet the inclusion-exclusion criterion by sending the recruitment material available via the social media groups, or by copying the advertisement and texting/emailing it to others they believed met inclusion/exclusion criteria.

**Data Acquisition Procedures, Anticipated Procedural Timeline & Instrumentation**

Data was be obtained via the usage of one self-report demographic survey (the researcher developed Demographics Survey Questionnaire) and two pre-existing self-report surveys measuring personal meaning (via the Brief Personal Meaning Profile; See: MacDonald et. al, 2012), and Posttraumatic Growth (i.e., via the PTG Inventory-Short Form [PTGI-SF]; see: Cann, et. al, 2010) – all in electronic format that participants can access from the privacy of their own homes through the internet via a website URL link. Once collected, all participants’ variable-data, de-identified via anonymity on the surveys, as well as, via the permission from the UNM
OIRB to waive consent documentation, was then downloaded onto the researcher’s computer, which was password protected via 256-bit password protection, and entered into a statistical software package known as the Statistical Package for the Social Sciences (SPSS) to undergo a Hierarchical, Ordinary Least Squares (OLS), Multiple Regression Analysis described in greater detail in the following sections. First, however, readers will be provided information regarding the psychometric properties and content of the instruments contained in the surveys chosen for inclusion in this dissertation’s study.

**Electronic survey software: Opinio.** The Opinio survey software allows for anonymous collection of de-identified data. All settings on the software have been set to their highest levels for anonymity and all electronic communications are transmitted via HIPAA-compliance.

**Variables and Instrumentation**

All survey instruments used in this research study are listed in Appendix “X”. The following sections will outline the instruments and variables used, including information on item choices and scoring for this research study.

**Informed Consent Survey Item and the Participant Screening Survey**

Once participants initially self-verify that they meet the requisite criterion for participation after reading the marketing advertisement, they were asked to again verify their qualifications during the agreement of informed consent (e.g., the first survey item, determining access to the rest of the next step of this research study, the Participant Screening Survey. On the Participant Screening Survey, participants were then asked to re-verify specific responses to each criterion prior to collecting further demographic or survey information. The Opinio survey software utilized allows the researcher to not allow data-collection until the inclusion-exclusion criteria are verifiably met with participant responses. In this case, because it is all anonymous
and de-identified, participants must self-verify that they meet the criteria. The only items that require a response (e.g., no, “I choose not to answer this,” option) are the informed consent screening item and the items in the Participant Screening Survey. The informed consent and Participant Screening Survey are provided in Appendix B. The questions on the Participant Screening Survey include:

- Are you 18 years of age or older?
- Are you a United States Military Veteran?
- Are you completing this survey on a government installation?
- Have you experienced a traumatic experience at any point in time throughout your life?

**Demographics Survey Questionnaire**

Using a Demographics Survey Questionnaire developed by the researcher, the researcher intend to gather participants’ ages (e.g., in mostly 10-year age brackets, except the initial 18 to 24 year bracket due to limitations in the inclusion-exclusion criterion), gender-identities, races/ethnicities, sexual-orientations, approximate timing of self-reported trauma(s) (e.g., before, during, or after military service), branches of military service, dates of military service (calendar-years), whether they have experienced trauma as both screening-items (age, Veteran-status, and the ‘yes’ or ‘no’ item to having had an experience of trauma while in the military). These demographic variables are collected and implemented as experimental controls during data analysis. Personal meaning (MacDonald et. al, 2012) and PTG (Cann et. al, 2010) may differentially affect participants based on age, gender-identification, sexual-orientation, branch of service, and calendar-years served while trauma may also differentially affect these groups. This results in multi-collinear, non-normative data sets that fail to conform to the philosophic
assumptions underlying hierarchical multiple regression analysis (Heppner et. al, 2014). This would result in unreliable, invalid statistical outcomes. Further, there is a dearth of research for how trauma may affect female USMVs and USMVs that are members of the LGBTQIA community, allowing this research study to help provide alleviation and assistance to these often under-represented and under-researched groups. Information on each demographic variable is provided in the following sections.

**Age.** Age was defined as the participant’s age, measured in calendar years since birth. As a reminder, the condition for participation in this study, participants must be at least 18 years of age; however, there are not any maximum-age exclusionary criterion. Participants provided their ages utilizing a response item that tracks age via 10-year age brackets (beginning at ‘18 to 24’ and ending at ‘75 and older’).

**Race/Ethnicity.** The researcher chose to utilize the same race/ethnicity categories as the United States Census, used to track demographic representation within the military (e.g., for ease of comparison to the demographic variance within the sample population). There is also an, “I choose not to answer this question,” option. Options include: American Indian or Alaskan Native, Asian / Pacific Islander, Black or African American, Hispanic, White / Caucasian, and Multiple ethnicity / Other (Please specify).

**Gender.** The researcher chose to utilize a wide diversity of gender-options to maximize participant-inclusion, as well as to track data for sub-populations that are traditionally underrepresented in the current scholarship on humanism and/or PTG. Options include: Female, male, intersex, transgender, gender non-conforming, and other (please specify). There is also an, “I choose not to answer this question,” option.
Sexual Orientation. The researcher gathered data on sexual orientation via the following options: Lesbian, gay, straight or heterosexual, asexual, transsexual, bisexual, pansexual, and other (please specify). There is also an, “I choose not to answer this question,” option.

Branch of service. This item required participants to select all of the branches they served in on a singly survey item. There is also an, “I choose not to answer this question,” option. Branches include: Marine Corps, Army, Navy, Air Force, and Coast Guard.

Duty statuses. Duty status options available to choose from include: Enlisted, Warrant-Officer, and Officer. This item consisted of one survey item, allowing participants to select as many as apply. Participants may also choose to select the, “I choose not to answer this question,” option.

Year of military service entrance. This variable was included so that the researcher could determine whether the participants joined during a time of war (possibly affecting frequency and severity of trauma[s]), as well as to gather data regarding the length of time served. This consisted of one, open-ended response item and participants may choose the, “I choose not to answer this question,” option.

Year separated from military service. This variable was included so that the researcher can determine the possible effects of length of service on perceptions of life meaning and PTG outcomes, as well as the possible effects of time since service. This item consisted of one, open-ended response item and participants may choose the, “I choose not to answer this question,” option.

Approximate timing of trauma(s). This dissertation included approximate timing of participants’ self-reported trauma(s) to allow the researcher to differentiate the effects of military service on both personal meaning as well as PTG outcomes. Participants are asked to select as
many as are applicable, choosing from four options: Before military service, during military service, after military service, and “I choose not to respond to this question.” The reason the researcher is attempting to account for trauma(s) that may have occurred to participants prior to serving in the military is, in part, to have some means of quantifying both the frequency and timing of trauma(s) and their effects on PTG-outcomes, relative to military service. In future studies, this may be used to also examine the effects of trauma while serving, or after having served, when participants would have potentially been exposed to MMHS.

**Brief Personal Meaning Profile (BPMP)**

The researcher chose the BPMP (MacDonald et. al, 2012) to measure personal meaning, used as factors relevant to humanism, described in Chapters 1 and 2. MacDonald and colleagues (2012) found that, relative to the parent version, the Personal Meaning Profile (PMP), the subscales on the BPMP correlated strongly, accounting for 72 percent of the variance on PMP subscale-outcomes (MacDonald et. al, 2012). A study using 1,212 adult respondents from varying cultural, educational and socio-economic backgrounds yielded a correlation matrix between the PMP and the BPMP, “suggesting clear discrimination among the subscales,” (p.373). Test-retest reliability suggests the BPMP has a .73 correlation and the total correlation to the PMP was .95 (MacDonald et. al, 2012). A combined sample of Canadian high school students and Australian university students, including, “a large proportion of immigrants from diverse backgrounds,” demonstrated strong stability of the subscales for the BPMP in measuring personal meaning (MacDonald et. al, 2012).

**Scoring for the BPMP.** The BPMP (MacDonald, et. al, 2012) is a self-report survey composed of 21 items, with a seven-point Likert Scale (Schulenberg, Smith, Drescher, & Buchanan, 2015). Participants were asked to select the scale-value that best corresponds to their
answers to each of the 21-items, with scores ranging from 3 to 21 for each individual factor. All Likert Scales range from low (i.e., a Likert score of ‘1’) to high (i.e., a Likert score of ‘7’) and participants must decide which Likert score is most true given the item responded to. For the purposes of this dissertation study, only the total, summed scores on each of the factors were calculated for each participant and entered as a set of factor total-scores for entry into the overall statistical model attempting to explain PTG.

**Posttraumatic Growth Inventory (PTGI-SF) (Cann et. al, 2010)**

To measure PTG (Calhoun & Tedeschi, 2004), the researchers chose the PTGI-SF (Cann et. al, 2010). Cann and colleagues (2010) used confirmatory factor analysis, finding that the PTGI-SF, “demonstrated a five-factor structure for the PTGI-SF equivalent to that of the PTGI” (p. 127). They also found that when the items on the PTGI-SF are provided to participants in a random order, relative to their hierarchical-ordering in the parent form, provided a near equivalent measure of PTG with, “little loss of information” (Cann et. al, 2010, p. 127), indicating that it can be used in lieu of the longer PTGI. A limitation of this study, however, is that it did not utilize longitudinal data. Cann and colleagues (2010) recommend only utilizing the PTGI-SF when estimating or predicting total scores for PTG – a method consistent with that proposed in this dissertation’s study. Finally, the Purpose-In-Life-Short Form test – a well validated measure of meaning – evidenced a large effect size (Coefficient $\alpha = .86$) when accounting for variance in total scores for PTG relative to the instrument’s parent form.

**Scoring of the PTGI-SF (Cann et. al, 2010).** The PTGI-SF (Cann et. al, 2010) is composed of 10-items, rated on a Likert Scale ranging from zero to five. A score of zero on the PTGI-SF (Cann et. al, 2010) indicates that the participant, “did not experience this change as a result of [the participant’s] crisis,” (p. 127), whereas, a score of five indicates that participants,
“experienced this change to a very great degree as a result of [the participant’s] crisis” (p. 127). Scores range from zero to 50, with higher scores indicating the presence of PTG for the participant (Cann et. al, 2010). For the purposes of this dissertation, only total sum of each of the 10 items combined was entered into the statistical model for the criterion variable, consistent with the advice of the developers when utilizing the short form version (Cann et. al, 2010). The following subsections describe the five indices or factors responsible for measuring PTG on the PTGI-SF (Cann et. al, 2010). Refer to Appendix B for information on the specific items.

**Data Analyses**

The following sections will explicate each of the statistical analyses and procedures proposed for examining this dissertation study’s research question.

**Descriptive Statistics**

Group means, standard deviations, modes, and medians were calculated for participant’s demographic data, as well as their overall scores on the BPMP (MacDonald et. al, 2012) and the PTGI-SF (Cann et. al, 2010). This allowed the SI to both compare the demographic variance within the sample population to the wider military population (as discussed in the sections on the sample population within this IRB Protocol) as a measure of external validity, while also allowing the researcher to norm-reference the data for ease of interpretation, post-analysis, when pre-preparing the settings for the outcomes of the Hierarchical Multiple Linear Regression Analyses.

**Hierarchical Multiple Regression Analysis**

The downloaded de-identified data, once secured via 256-bit security, was analyzed, creating new categories for survey totals for both the BPMP (MacDonald et. al, 2012) and PTGI-SF (Cann et. al, 2010) for each participant. Then, the data was transferred to an SPSS file for
analysis via SPSS version 23. Here, HRM analysis allowed the researcher to examine both the unique as well as the combined-variance of overall scores for PTG (i.e., the criterion variable) as accounted for by overall scores for the seven factors of personal meaning (MacDonald et. al, 2012), having controlled for the demographic variables. The researcher entered all variable information in one single step to determine the amount of overall variance accounted for by this first model (e.g., Model 1). Then, the researcher entered the variables in the following steps (e.g., Model 2):

1. Step 1: All demographics are entered simultaneously.
2. Step 2: All Military Factors were added simultaneously
3. Step 2: Overall scores for each of the seven factors of personal meaning (MacDonald et. al, 2012) were entered.

Then, the researcher compare the overall variance accounted for by the seven factors of personal meaning (MacDonald et. al, 2012), having controlled for demographics, for comparison to the overall variance accounted for in Model 1. This allowed the researcher to then test the hypotheses mentioned in the beginning of this chapter by examining the statistical significance of the variance accounted for in Model 2. If the statistical significance was greater than .05 (p< .05), at a significance level of .05 (alpha = .05), the researcher would have rejected the null hypothesis that Model 2 would account for a statistically significant amount of variance in PTG-outcomes.

Assumptions

The following sections provide information regarding the theoretical assumptions that underlay each of the statistical methodologies proposed for use in this study, that must also be
satisfied to derive any valid and reliable conclusions (McKinnon, 2008; Field, 2013; Heppner et. al, 2015).

**HRM analysis.** The following sub-sections will examine the theoretical assumptions that must be met to draw valid conclusions for HRM analysis. The researcher, for the purposes of replication studies, also included what the researcher did ensure that each of these theoretical assumptions are met, to help ensure that HRM analysis provides valid and reliable outcomes. These include linearity of relationships, multivariate normality, no or little multicollinearity, no auto-correlation, and homoscedasticity (McKinnon, 2008).

**Linear relationships.** This theoretical assumption according to McKinnon (2008) asserts that the relationships between predictor variables and the criterion variable must be linear in nature to the relationships between them, as opposed to non-linear ones (i.e., curvilinear relationships).

*Statistical analysis of linear-relationships.* This was checked by plotting the variables’ residuals and assessing the linearity of the best-fit line between predicted and the observed data-points plotted utilizing SPSS (McKinnon, 2008; Field, 2013).

**Multivariate normality.** Multivariate normality, according to McKinnon (2008) refers to the degree to which all of the variables are normally distributed amongst the sample, to draw conclusions as to its representativeness of the larger population (e.g., a bell-curve on scatterplots of their frequency distributions).

*Statistical analysis of multivariate normality.* According to Assumptions of Multiple Linear Regression - Statistics Solutions (2016), a “histogram and a fitted normal curve or a Q-Q Plot” (p. 1) should be utilized in SPSS to verify that the assumption of multivariate normality is satisfied.
No or little multicollinearity. McKinnon (2008) describes this assumption of Hierarchical Linear Multiple Regression as having confirmation that the variables utilized as predictors should not be related to each other.

Statistical analysis of multicollinearity. This was checked utilizing SPSS to develop a correlation matrix, tolerance statistic, Variation Inflation Factor (VIF), and Condition Index (CI), all as potential indicators of multicollinearity (Assumptions of Multiple Linear Regression - Statistics Solutions, 2016). This is also referred to as auto-correlation (McKinnon, 2008).

Homoscedasticity. This assumption, according to Wampold, Heppner, and Kivlighon (2015) states that a scatterplot of the observed and predicted data-points should be developed and checked to ensure minimal deviation amongst residuals across the best-fit line. This was done utilizing SPSS.

Type-I and Type-II Errors. Power-analysis was utilized to determine the number of participants (e.g., N) required to observe an effect between the predictor-variables (e.g., each participant’s overall scores for the BPMP and the criterion (e.g., overall scores for the PTGI-SF for each participant). Given the three sets of predictor variables (demographics, military-characteristics, and sources of meaning), the researcher sought a sample size that would provide an overall statistical power-level of .80 to minimize the possibility of type-I error, for a calculated probability (e.g., p-value) of .05 (α = .05) in order to minimize the likelihood of type-II error.

External Validity. In theory, with regards to Multiple Regression analyses, including HRM Analysis used in this dissertation’s study, external validity refers to whether or not the degree of variance accounted for by the chosen predictor variables and controls – entered into the model with a theory-driven intentionality - on the criterion variable, are able to maintain their
ability to account for a statistically significant amount of variance in the outcome if the sample population was replaced by every individual composing the wider population of interest (McKinnon, 2008; Heppner et. al, 2015). In the case of this dissertation’s study, a limitation of the sample population intended for use, USMVs, is that they are intentionally a convenience sample, as a means of both piloting the initial validity of the overall model (e.g., Model 2) proposed earlier in this Chapter, as well as due to limitations in wait-times by the Department of Defense’s Institutional Review Board (DoD IRB), that might allow testing of the overall statistical model with the wider military population (e.g., inclusive of actively serving military personnel, as well as service-connected Veterans of the military).

Though this study is largely a pilot study to initially examine if relationships exist between personal meaning and PTG among the sample population of Veterans, external validity may still be a limiting factor for extrapolation of any findings to the wider military population in the United States (US). Further, participants were asked to provide data from a location with internet access and, as all participants must no longer be affiliated with the government to meet the inclusion/exclusion criterion outlined in this chapter, variance in settings between where participants provided data likely differed from the uniquely structured backdrop consistent with military service, negatively affecting external validity.

Statistical analysis of external validity. Statistical analysis were conducted to measure potential limiting effects on external validity. While there have not been any studies that attempt to measure PTG with military populations utilizing only personal meaning (MacDonald et. al, 2012), statistical information that would allow for a comparison between the data provided by the sample population for this dissertation’s study and the wider military population cannot occur. As such, external validity was explored as a product of effect size data provided by the
developers of the instruments used to measure the predictor variable (MacDonald et. al, 2012). Again, however, data on effect sizes for these instruments did not come from factor analyses conducted with military populations – another limiting factor for attempting to ensure strong external validity. A priori Power Analysis was the primary statistical control for external validity, by helping to ensure this dissertation study obtains the appropriate number of participants to neither encourage artificial inflation (e.g., resultant from a small-effect size with many participants, known as type-II error), nor to incur type-I error – a rejection of a true null hypothesis due to inadequate sample-sizes (Heppner et. al, 2015).

**Internal Validity.** Internal validity (IV), for the purposes of Hierarchical Regression Analysis, refers to the validity of conclusions regarding the predictive nature of independent variables on the criterion for the sample population, based on the procedures and methods used to derive such predictions. These include issues pertinent to measurement, including Omitted Variables, incorrect estimation of functional relationships within the overall statistical model, imprecise measurement of IVs, sample selection, and issues pertinent to the estimation of causality (McKinnon, 2008; Heppner et. al, 2015). The following subsection will provide information regarding the statistical analyses and control procedures utilized to help ensure Internal Validity within this dissertation’s study.

**Statistical analysis of internal validity and control procedures.** Procedures and methods used to assist in maintaining internal validity occurred in multiple ways. To begin, the research used estimated effect sizes (obtained by the developers of the instruments used to gather participant-data for the predictor variables) as a method of selecting adequate instruments. The researcher also conducted hypothesis tests beholding the study’s results to a significance level commensurate to educational and social research ($\alpha = .05$), for variance accounted for in the
overall statistical model (e.g., Model 3), as well as with regards to where the overall statistical model exists relative to pre-established Confidence Intervals (CI = 95%). Omitted Variable Bias was accounted for by either eliminating participants who fail to report data for variables within the model – a technique that can cause sampling-bias – or to replace participants who failed to report all requisite variable-information with excess participants who did, helping to minimize sampling-bias while ensuring greater internal validity (Heppner et. al, 2015).

Further, misspecification of the functional form (e.g., finding that the data conforms to a curvilinear structure as opposed to a linear one, violating one of the philosophic assumptions of regression analyses), was checked by plotting the residual data to assess linearity (McKinnon, 2008). The researcher also utilized both theory, as well as research to inform the ordering of variables in the model as a control against statistical ‘phishing.’ This is another reason that HRM was chosen as opposed to Step-Wise Multiple Regression, a technique that would negate the theoretical and empirical internationalities for the entering of variables in the overall model, described throughout this dissertation manuscript (McKinnon, 2008; Heppner et. al, 2015).

Errors in measurements for the IVs that occur because of imprecise measurements was controlled, in part, by the selection of instrument – the BPMP (MacDonald et. al, 2012) – that report strong psychometric properties discussed in the section on the BPMP. This helps to evidence strong validity and reliability, explained in greater detail in the sections on instrumentation within this chapter. The researcher also attempted to control for potential confounders to examining causality by choosing the entering of the variables in the overall model based on insights from pre-existing research and theory, mentioned in Chapter 2 (e.g., attempting to eliminate the risks of statistical-phishing).
Attrition. For the purposes of this dissertation’s study, the researcher recruited more participants than a priori Power Analysis recommends (n=110), though only 85 were complete and used in the analyses. The 25 participants that were not used were screened out during the Participant Screening Survey (PSS) for not meeting the inclusion-exclusion criterion of having self-reported at least one experience of trauma. To ensure that there is not artificial inflation of effect sizes amongst participant responses on the various surveys (Heppner et. al, 2007; McKinnon, 2008; Heppner et. al, 2015), only the number recommended by a priori Power Analysis was utilized in the final statistical analyses.

Potential for Hawthorne and Halo effects. According to Heppner and colleagues (2015), the Hawthorne Effect (HE) occurs when participants choose not to provide accurate information, as influenced directly by the experimental conditions (e.g., asking for information regarding their observations of perceived gains in the aftermath of trauma – knowing that perceived gains are an anticipated aspect of this dissertation’s research study of PTG (Calhoun & Tedeschi, 2004). The researcher provided minimal information to participants regarding any expectations of the study, while also serving to minimize the potential influence of the researcher on participants. Participants could contact the student-investigator with questions or concerns via the contact information provided on the marketing material, in the informed consent, and on the Wiki Website.

The Halo Effect refers to a cognitive phenomenon wherefore observations of participants’ responses to survey questions may be artificially inflated in accordance with researcher-bias, resultant from some characteristic of the participants (McKinnon, 2008; Heppner et. al, 2015). To control for this, the researcher, as an eight-year Veteran of the United States Marine Corps (USMC), chose not to integrate qualitative, nor mixed-method designs – choosing instead to rely
on the presumed objectivity of quantitative analyses. Further, all methods of data-collection utilize self-report measures, potentially eliminating researcher-induced error resultant from biases consistent with participants.

Summary

This dissertation’s study is intended to measure the degree to which humanistic variables predict PTG (Calhoun & Tedeschi, 2004); research addressing similar outcomes as this have been utilized at an increasing rate by counseling and counseling psychology researchers, over the last 10 years (Petrocelli, 2003). Humanism was chosen as a means of predicting PTG (Calhoun & Tedeschi, 2004) for two reasons. First, the existent literature suggests that purpose-in-life is the best-known predictor of PTG (Calhoun & Tedeschi, 2004; Tedeschi & Calhoun, 2004; Tsai et al, 2015). Second, as a theory, humanism (Frankl, 1959) appears to be more theoretically consistent than the current predominant model of PTG (Tedeschi & Calhoun, 2004) towards fighting mental health stigmatization (Yalom, 2002; Ramchand, 2011). Snow ball sampling was chosen to access an often difficult to identify sample population (Field, 2013) of USMVs, helping to also encourage participation through use of anonymous, electronic surveys for data collection (M. Burns, personal communication, November 2, 2016).
Chapter 4 – Research Findings

The following chapter will examine research findings from the statistical analyses performed on the data collected from the sample population of United States Military Veterans (USMVs) with a self-reported history of trauma. It will begin with a look at the evaluations and subsequent quality control measures used to ensure the data met each of the assumptions of multiple regression. A look at the sample population will occur via analysis of descriptive statistics. Chapter 4 will end with an exploration of the findings from the Hierarchical Multiple Regression (HRM) process, and the results of the hypothesis test for this dissertation study’s research question.

Quality Control of Data

The student-researcher used three different measures of residual distances to determine if any data points should be discounted from analysis. The intent was to provide multiple, objective measures that were used to increase the likelihood that the dependent variable will be normally distributed. The student-researcher used the Mahalanobis’ Distance, Cook’s Distance, and Leverage values and the plan was to only exclude participant-data that were indicated as being outside of their respective normal ranges on at least two of those three measures (Field, 2013). No participants were removed as a significant outlier on at least two out of the three indicators of residual-distances.

Descriptive Statistics

Demographics. Table 1 displays the frequencies and percentages respective to the overall sample population, separated by demographic variable, preceded by brief summary of each statistical output.
**Age.** Age was separated by 10-year brackets beginning with ages 18-24 and ending at 75 and higher. The oldest members of the sample population (45-54) were represented the least (n=5) at six percent of the total sample. The youngest members of the sample (18-24) represented 8.3% of the total participant-population (n=7). The 10-year age bracket with the most representation in the sample population was 25-34 (n=52) – 61.9 percent of the participants. Finally, 22.6 percent of the sample population (n = 19) come from the 35-45 age-bracket.

**Ethnicity / race.** The sample population is overwhelmingly White or Caucasian (n=48, 56.5%), with Black or African American being the least represented ethnic/race category (n=1, 1.2%). Asian or Pacific Islanders accounted for 9.4% of the sample population (n=8) and Hispanics were the second most heavily represented (n=19, 22.4%). Four participants (4.7%) reported being Multiracial, and all of these specific participants report being a combination of White or Caucasian and Hispanic.

**Gender.** 66 participants reported being Male (77.6%) and 10 participants reported being Female (11.8%). No participants reporting being Transgendered, Gender Nonconforming, or Intersex.

**Sexuality.** The sample population was overwhelmingly represented by participants reporting being heterosexual (n=76, 89.4%). One participant reported being Asexual (1.2%) and two participants reported being Bisexual (2.4%). No participants reported being transgender nor pansexual.
Table 1

Comparing group frequencies and percentiles for demographic variables entered in HMR Step 1

<table>
<thead>
<tr>
<th></th>
<th>Frequency (n)</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-24</td>
<td>7</td>
<td>8.3</td>
</tr>
<tr>
<td>25-34</td>
<td>52</td>
<td>61.9</td>
</tr>
<tr>
<td>35-45</td>
<td>19</td>
<td>22.6</td>
</tr>
<tr>
<td>45-54</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>55-64</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>65-74</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>75 and up</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Race/Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Indian or Alaskan Native</td>
<td>4</td>
<td>4.7</td>
</tr>
<tr>
<td>Asian or Pacific Islander</td>
<td>8</td>
<td>9.4</td>
</tr>
<tr>
<td>Black or African American</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>Hispanic</td>
<td>19</td>
<td>22.4</td>
</tr>
<tr>
<td>White or Caucasian</td>
<td>48</td>
<td>56.5</td>
</tr>
<tr>
<td>Multiracial</td>
<td>4</td>
<td>4.7</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>10</td>
<td>11.8</td>
</tr>
<tr>
<td>Male</td>
<td>66</td>
<td>77.6</td>
</tr>
<tr>
<td>Transgendered</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Gender Nonconforming</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Intersex</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Sexuality</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transsexual</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Bisexual</td>
<td>2</td>
<td>2.4</td>
</tr>
<tr>
<td>Asexual</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>Pansexual</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Heterosexual</td>
<td>76</td>
<td>89.4</td>
</tr>
</tbody>
</table>

**Military factors entered in Step 2 of the statistical model.** Table 2 represents the frequencies and percentages respective to the overall sample population, separated by military factor category.

**Branch of service.** There were more Marines represented in the sample population than any other (n=63, 74.1%). Army had the second highest representation (n=12, 14.1%), and Air Force was represented by two participants (2.4%). Only one participant reported having served in the Navy (1.2%). No one reported having served in the Coast Guard.
Rank. 95.1 percent of the sample population reported having served in the Enlisted ranks (n=75), with one participant reporting having been a Warrant Officer (1.2%) and six as Officers (7.1%).

Years served in the military. The average number of years served in the military by participants within the sample population is approximately 6.52 calendar-years (SD = 4.27 years).

Approximate timing of trauma. Six participants reported having only experienced a trauma(s) prior to joining the military (n=6, 7.1%), with the largest number, 48, reporting having only experienced trauma(s) while serving in the military (56.5%). Eight participants each reported as having experienced traumas only after their military service ended (9.4%), and another eight reporting having experienced their traumas before and during their military service time (9.4%). One participant reported having experienced traumas before and after military service (1.2%), with another eight (9.4%) reporting having experienced their traumas during and after military service. Finally, four participants reported having experienced traumas during before, during, and after their military service (4.7%).
Table 2  
*Comparing group frequencies and percentages for military factors entered in HMR Step 2*

<table>
<thead>
<tr>
<th>Branch(es) of Service</th>
<th>Frequency (n)</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Army</td>
<td>12</td>
<td>14.1</td>
</tr>
<tr>
<td>USMC</td>
<td>63</td>
<td>74.1</td>
</tr>
<tr>
<td>Navy</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>Air Force</td>
<td>2</td>
<td>2.4</td>
</tr>
<tr>
<td>Coast Guard</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rank</th>
<th>Frequency (n)</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enlisted</td>
<td>75</td>
<td>91.5</td>
</tr>
<tr>
<td>Warrant Officer</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>Officer</td>
<td>6</td>
<td>7.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Approximate Timing of Trauma(s)</th>
<th>Frequency (n)</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trauma Occurred Before Military Service</td>
<td>6</td>
<td>7.1</td>
</tr>
<tr>
<td>Trauma Occurred During Military Service</td>
<td>48</td>
<td>56.5</td>
</tr>
<tr>
<td>Trauma Occurred After Military Service</td>
<td>8</td>
<td>9.4</td>
</tr>
<tr>
<td>Traumas Occurred Before and During (but not after) Military Service</td>
<td>8</td>
<td>9.4</td>
</tr>
<tr>
<td>Traumas Occurred Before and After (but not during) Military Service</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>Traumas Occurred During and After (but not before) Military Service</td>
<td>8</td>
<td>9.4</td>
</tr>
<tr>
<td>Traumas Occurred Before, During, and After Military Service</td>
<td>4</td>
<td>4.7</td>
</tr>
</tbody>
</table>

**Comparing group means for overall PTG-outcomes and each category of meaning.**

Table 3 examines group means for overall PTG-outcomes and each category of meaning for the sample population. The average overall score for PTG (out of 50 total points) among the sample population was approximately 36.24 (SD = 5.42). Mean scores for each of the seven categories of meaning (out of 21 total points) from greatest to least was: Achievement (17.56, SD = 2.9), Relationships (16.46, SD = 3.48), Intimacy (16.16, SD = 5.49), Self-Transcendence (15.96, SD = 3.61), Fair Treatment (13.98, SD = 3.37), Self-Acceptance (13.84, SD = 3.37) and Religion (9.08, SD = 5.83). Having explored the sample population, the following sections will now
examine how each of the assumptions for multiple regression were assessed and verified, prior to looking at the results of the Hierarchical Multiple Regression (HRM) for this study, itself.

Table 3
Comparing Means and SDs for PTG-outcomes for the Total Sample Population

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17.56</td>
<td>16.46</td>
<td>9.08</td>
<td>15.96</td>
<td>13.84</td>
<td>16.16</td>
<td>13.98</td>
<td>36.24</td>
</tr>
<tr>
<td>(SD = 2.90)</td>
<td>(SD = 3.48)</td>
<td>(SD = 5.83)</td>
<td>(SD = 3.61)</td>
<td>(SD = 3.37)</td>
<td>(SD = 5.49)</td>
<td>(SD = 4.48)</td>
<td>(SD = 5.42)</td>
</tr>
</tbody>
</table>

Verifying the Assumptions of Regression

The following sections includes how each of the assumptions for multiple regression were met prior to running the main statistical analyses.

Multicollinearity. A covariance matrix was developed among the predictor variables. All correlations between the predictors appeared to be within an acceptable range of relatedness for this assumption to be met. All predictor variables had a VIF lower than 10 and a tolerance of at least .10 (Field, 2013). Further, after examining the correlations between predictors, all correlations were less than .70 (McKinnon, 2008).

Normality. By developing a frequency bar-graph of the dependent variable, PTG-outcomes, and super-imposing a normal bell-curve, the researcher determined that the dependent variable falls within the acceptable range of normality, as seen in Figure 1, below (Field, 2013). The frequencies appear to center near the 0 (e.g., the mean score) and ranges from approximately -2 to 2. This suggests that the data meets the assumption of normality. This was also, in part, checked via the examination of the Mahalanobis’ Distance, Cook’s Distance, and Leverage values (Field, 2013), described in the above section on data quality control measures.
**FIGURE 1.** Histogram of PTG-Outcome Score Regression Standardized Residuals (x) by frequency (y) with a Super-Imposed Normal Bell-Curve

**Linearity.** Superimposing a best fit line over a scatterplot of the expected (y) and the observed (x) for the dependent variable, PTG-outcomes, evidence an approximately linear pattern and is deemed via visual inspection to be within an acceptable range, as seen in Figure 2, below.

**FIGURE 2.** Plot of Observed Cumulative Probabilities for PTG-Outcome Scores on the Expected Cumulative Probabilities with a 1:1 Regression Line Super-Imposed
**Homogeneity and heteroscedasticity.** A scatterplot examining the regression standardized predicted values (y) on regression standardized residuals (x) for the dependent variable, PTG-outcomes, appears exceptionally square, approximately falling between -3 and 2 regression standardized residuals, as shown in Figure 3, below. Reliability may have appeared low, in part, perhaps due to the relatively low score for Cronbach’s alpha for the DV-measure, the PTGI-SF (Cann et al., 2010), at approximately .65 (< .70), discussed in the prior sections on results for tests of Cronbach’s alpha for the measures used in this study.

**FIGURE 3.** Scatterplot of the Regression Standardized Predicted Value (y) on Regression Standardized Residuals

![Scatterplot](image)

**Research Question**

The research examined whether the seven categories of meaning (MacDonald et al., 2012) represented a statistically significant predictor of PTG-outcomes, including the influences of demographical information and other military factors pertaining to a self-reported history of trauma(s). The following Hierarchical Multiple Regression (HRM) was used to statistically analyze this question, culminating in a decision to either reject the null hypothesis or fail to reject the null hypothesis.
Table 4 represents a statistical summary of each step in the HRM-process – Step 1 (Personal Demographics), Step 2 (Military Factors), Step 3 (Total scores for each of the seven categories of meaning measured on the BPMP (MacDonald et. al, 2012) – as they each, uniquely, account for variance within (e.g., explain or predict) PTG-outcomes.

Model 1 – Personal demographics. Demographics, alone, significantly predict PTG-outcomes, statistically (p < .01) and accounted for approximately 28 percent of variance in PTG-outcomes among the sample population ($\Delta F[11, 72] = 2.52, p < .01, \Delta R^2= .28$). This is the most, before controlling for Military Factors and the seven categories of personal meaning (MacDonald et. al, 2012).

Model 2 – Military factors. Military Factors added a statistically significant amount of variance towards the prediction of PTG-outcomes among the sample population, above and beyond demographics ($\Delta F[11, 61] = 1.94, p < .051, \Delta R^2= .19$). Military Factors contributed the least amount towards the prediction of overall scores for PTG, adding approximately 19 percent of unique variance to the overall model, above and beyond demographics, alone.

Model 3 – BPMP (MacDonald et. al, 2012) categories of meaning. Wong’s seven categories of personal meaning (MacDonald et. al, 2012) contributed approximately an additional 21 percent to the prediction of PTG-outcomes, when combined with Demographics and Military Factors ($\Delta F[7, 54] = 4.95, p < .000, \Delta R^2= .21$). Collectively, the categories of meaning contributed the most unique variance (above and beyond Demographics and Military Factors) towards the prediction of PTG among the sample population.
Table 5 examines the overall significance at each step in the HRM process. In other words, this table helped the researcher determine which combination of variables were best at predicting the participants scores for PTG. The seven categories of meaning (MacDonald, et. al, 2012) – after controlling for Demographics and Military Factors – was the most statistically significant model tested towards the prediction of PTG-outcomes among the sample population (F [29, 54] = 3.86, p < .000). Demographics and Military Factors, combined, were the second best model towards the prediction of PTG-outcomes among the sample population (F [22, 61] = 2.41, p < .004). Demographics, alone, was poorest at predicting PTG-outcomes among the sample population (F [11, 72] = 2.52, p < .010); however, it was still a statistically significant predictor when compared to the standard significance level for social science research, .05 (McKinnon, 2008).
Table 5
**ANOVA at Each Step in the HRM**

<table>
<thead>
<tr>
<th>Model</th>
<th>df</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
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<td>1</td>
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<td>2.52</td>
<td>.010</td>
</tr>
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<td>Regression</td>
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<td>2.414</td>
<td>.004</td>
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<td></td>
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<td>Total</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>29</td>
<td>3.857</td>
<td>.000</td>
</tr>
<tr>
<td>Regression</td>
<td>54</td>
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<tr>
<td>Residual</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>83</td>
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<td></td>
</tr>
</tbody>
</table>

**Examining Predictors of PTG-Outcomes at Each Step in the HRM**

**Model 1.** Table 6 and the following sub-sections briefly summarize the beta-weights (i.e., weights of predictive capacity), t-scores (i.e., variance accounted for), and scores for partial variance (i.e., the approximate percentage of unique variance accounted for by each predictor category) for each of the demographic variables entered alone in the model towards the prediction of PTG-outcomes. Being bisexual ($\beta = .25, t = 2.42, p < .018, pr^2 = .24$) or asexual ($\beta = -.35, t = -3.02, p < .003, pr^2 = -.30$) predicted PTG-outcome scores that were statistically higher than participants that reported being heterosexual. The only age category that yielded statistically greater PTG-outcome scores than the reference category (18 to 24) was the 45 to 54 age range category ($\beta = 48, t = 3.72, p < .000, pr^2 = .37$), prior to controlling for Military Factors or the categories of meaning.
Table 6

Comparing Regression Data for Unique Variables in Step-1 of the HRM Process

<table>
<thead>
<tr>
<th>Model</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
<th>Part</th>
</tr>
</thead>
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<td>.10</td>
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<td>2.25</td>
<td>.02</td>
<td>.22</td>
<td>.823</td>
<td>.02</td>
</tr>
<tr>
<td>Black/African American</td>
<td>8.46</td>
<td>5.46</td>
<td>.17</td>
<td>1.55</td>
<td>.126</td>
<td>.16</td>
</tr>
<tr>
<td>Hispanic</td>
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<td>1.53</td>
<td>.02</td>
<td>.19</td>
<td>.847</td>
<td>.02</td>
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<td>Multiracial</td>
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<td>.43</td>
<td>.665</td>
<td>.04</td>
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<td>-.02</td>
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<td>.870</td>
<td>-.02</td>
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<td>Bisexual</td>
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<td>.25</td>
<td>2.42</td>
<td>.018</td>
<td>.24</td>
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<td>5.78</td>
<td>-.35</td>
<td>-3.02</td>
<td>.003</td>
<td>-.30</td>
</tr>
<tr>
<td>Ages 25 to 34</td>
<td>2.82</td>
<td>1.78</td>
<td>.25</td>
<td>1.59</td>
<td>.117</td>
<td>.15</td>
</tr>
<tr>
<td>Ages 35 to 44</td>
<td>2.85</td>
<td>2.01</td>
<td>.21</td>
<td>1.42</td>
<td>.161</td>
<td>.14</td>
</tr>
<tr>
<td>Ages 45 to 54</td>
<td>10.95</td>
<td>2.94</td>
<td>.48</td>
<td>3.72</td>
<td>.000</td>
<td>.37</td>
</tr>
</tbody>
</table>

Model 2. Table 7 and the following sub-sections briefly summarize the beta-weights (e.g., weights of predictive capacity), t-scores (e.g., variance accounted for), and scores for partial variance\(^2\) (e.g., the approximate percentage of unique variance accounted for by each predictor category) for each of the military factors – having controlled for demographic variables – in Step 2 of the overall model predicting PTG-outcomes. Again, race/ethnicity was non-significant as a predictor of PTG-outcomes among the sample population. Bisexual (\(\beta = .26, t = 2.56, p < .01, pr^2 = -.28\)) and Asexual (\(\beta = -.38, t = -2.95, p < .01, pr^2 = .10\)), above and beyond the reference group (heterosexual), when attempting to control for Military Factors. 45 to 54 (\(\beta = .71, t = 3.89, p < .000, pr^2 = -.23\)) above and beyond the reference group (18-24), and when attempting to control for Military Factors. This is the only significant age factor gathered in the study. Trauma after serving in the military (\(\beta = -.32, t = -.25 p < .02, pr^2 =-.10\)), less than compared to the reference group (just trauma before military service), and when attempting to control for demographics. This was the only significant factor regarding the timing of the trauma.
reported by the participants. Finally, being enlisted ($\beta = .61, t = 3.55, p < .00, pr^2 = .33$), greater
so than compared to the reference group (Warrant Officer), and attempting to control for
demographics.

Table 7
Comparing Regression Data for Unique Variables in Step-2 of the HRM Process

<table>
<thead>
<tr>
<th>Model</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
<th>Part</th>
</tr>
</thead>
<tbody>
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<td>2 (Constant)</td>
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<td>9.64</td>
<td>.000</td>
<td>.10</td>
<td></td>
</tr>
<tr>
<td>Amer. Native</td>
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<td>2.69</td>
<td>.11</td>
<td>1.06</td>
<td>.29</td>
<td>.03</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
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<td>2.33</td>
<td>.04</td>
<td>.34</td>
<td>.74</td>
<td>.13</td>
</tr>
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<td>Black/African American</td>
<td>7.49</td>
<td>5.53</td>
<td>.15</td>
<td>1.36</td>
<td>.18</td>
<td>-.01</td>
</tr>
<tr>
<td>Hispanic</td>
<td>-.15</td>
<td>1.5</td>
<td>-.01</td>
<td>-.10</td>
<td>.92</td>
<td>.11</td>
</tr>
<tr>
<td>Multiracial</td>
<td>3.53</td>
<td>2.96</td>
<td>.14</td>
<td>1.19</td>
<td>.24</td>
<td>-.01</td>
</tr>
<tr>
<td>Female</td>
<td>-.34</td>
<td>2.42</td>
<td>-.02</td>
<td>-.14</td>
<td>.89</td>
<td>.24</td>
</tr>
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<td>3.00</td>
<td>.26</td>
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<td>-.28</td>
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<td>-.38</td>
<td>-2.95</td>
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<td>.10</td>
</tr>
<tr>
<td>Ages 25 to 34</td>
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<td>1.79</td>
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<td>.36</td>
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<td>Ages 35 to 44</td>
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<td>-.15</td>
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<td>Ages 45 to 54</td>
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<td>-.32</td>
<td>-2.45</td>
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<td>-.10</td>
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<tr>
<td>Trauma Before + During</td>
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<td>2.29</td>
<td>-.18</td>
<td>-1.25</td>
<td>.22</td>
<td>-.05</td>
</tr>
<tr>
<td>Trauma Before + After</td>
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<td>-1.05</td>
<td>.30</td>
<td>-.15</td>
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<td>Trauma Before + During + After</td>
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<tr>
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<td>.02</td>
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<td>.04</td>
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<td>.18</td>
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<td>.15</td>
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<td>2.85</td>
<td>.61</td>
<td>3.55</td>
<td>.00</td>
<td>.33</td>
</tr>
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<td>Officer</td>
<td>5.03</td>
<td>4.31</td>
<td>.24</td>
<td>1.17</td>
<td>.25</td>
<td>.11</td>
</tr>
</tbody>
</table>
Model 3. Table 8 and the following sub-sections briefly summarize the beta-weights (e.g., weights of predictive capacity), t-scores (e.g., variance accounted for), and scores for partial variance\(^2\) (e.g., the approximate percentage of unique variance accounted for by each predictor category) for each of the seven categories of meaning – having controlled for Demographics and Military Factors – for the overall model predicting PTG-outcomes.

Bisexual (\(\beta = .21, t = 2.35, p < .02, pr^2 = .18\)) was statistically significant, and more so than when compared to the reference category (heterosexual) and significantly less than the reference category when Asexual (\(\beta = -.32, t = -2.83, p < .01, pr^2 = -.22\)). Navy (\(\beta = .22, t = 2.26, p < .03, pr^2 = .18\)) was the only branch that was statistically more so than when compared to Air Force, while attempting to control for Demographics and Military Factors. Enlisted (\(\beta = .38, t = 2.43, p < .02, pr^2 = .19\)) yielded greater PTG-outcomes, compared to the reference category (Warrant Officers), while controlling for Demographics and Military Factors. The meaning category of Religion (\(\beta = .30, t = 2.4, p < .02, pr^2 = .19\)) had a positive relationship to PTG-outcomes, though this category was the lowest average score among the categories of meaning, at 9.08). The meaning category of Fair-Treatment (\(\beta = .43, t = 3.96, p < .000, pr^2 = .31\)) also had a statistically significant positive relationship to PTG-outcomes, when attempting to control for Demographics and Military Factors.
Table 8
Comparing Regression Data for Unique Variables in Step-3 of the HRM

<table>
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<th>Beta</th>
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<th>Sig.</th>
<th>Part</th>
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<td>.06</td>
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</tr>
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<td>-.09</td>
<td>-.86</td>
<td>.39</td>
<td>-.07</td>
</tr>
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<td>.72</td>
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<td>.06</td>
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<td></td>
</tr>
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<td>-.09</td>
</tr>
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<td>.18</td>
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<td>.03</td>
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</tr>
<tr>
<td>Trauma After</td>
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<td>-.25</td>
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<td>-.14</td>
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<td>-.08</td>
<td>-.64</td>
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<tr>
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<td>-.10</td>
<td>-1.21</td>
<td>.24</td>
<td>-.09</td>
</tr>
<tr>
<td>Trauma Before + During + After</td>
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<td>2.76</td>
<td>-.09</td>
<td>-.79</td>
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<td>.06</td>
<td>.37</td>
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<td>.03</td>
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<td>.09</td>
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<td>.54</td>
<td>.05</td>
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<td>Navy</td>
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<td>.22</td>
<td>2.26</td>
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<td>.18</td>
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<td>.19</td>
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<td>.30</td>
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<td>.12</td>
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<td>.36</td>
<td>.07</td>
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<td>BPMP – Relationships</td>
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<td>-.12</td>
<td>-.86</td>
<td>.39</td>
<td>-.07</td>
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<td>BPMP – Religion</td>
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<td>.12</td>
<td>.30</td>
<td>2.40</td>
<td>.02</td>
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<tr>
<td>BPMP – Self-Transcendence</td>
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<td>.17</td>
<td>-.08</td>
<td>-.70</td>
<td>.49</td>
<td>-.05</td>
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<td>BPMP – Self-Acceptance</td>
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<td>.19</td>
<td>.20</td>
<td>1.70</td>
<td>.09</td>
<td>.13</td>
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<tr>
<td>BPMP – Intimacy</td>
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<td>.15</td>
<td>.14</td>
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<tr>
<td>BPMP – Fair</td>
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<td>.13</td>
<td>.43</td>
<td>3.96</td>
<td>.000</td>
<td>.31</td>
</tr>
</tbody>
</table>
Results of Hypothesis Test

The null hypothesis for this dissertation study predicts that the seven categories of meaning (MacDonald et. al, 2012) would not predict PTG-outcomes in a statistically significant way, above and beyond Military Factors, and above and beyond Demographics. The results of the HRM, however, allow the researchers to reject this null hypothesis, as the seven categories of meaning (MacDonald et. al, 2012) did account for a statistically significant amount of variance in PTG-outcomes, above and beyond military factors, and above and beyond demographics. Thus, the overall model – using the seven categories of meaning to predict or explain PTG-outcomes – was found to be statistically significant ($\Delta R^2 = .21$, $p < .000$) above and beyond Demographics ($\Delta R^2 .28$, $p < .010$) and Military Factors ($\Delta R^2 .19$, $p < .004$), within the sample population of USMVs with a self-reported history of trauma, as seen in Figure 4, below. Further, the change in variance accounted for (e.g., unique variance) by the seven categories of meaning is significantly more, statistically, than Demographics and Military Factors combined ($\Delta F [7, 54] = 4.95$, $p < .000$, $\Delta R^2 = .21$).

FIGURE 4. Scatterplot of Predicted Values for PTG-Outcome Scores and the Observed (e.g., Actual) PTG-Outcome Scores.
Summary

In summary, results from the analyses indicated that Demographics alone accounted for approximately 28 percent of PTG-outcome scores within the sample population, and was statistically significant (p < .010). Military Factors account for another 19 percent of PTG-outcome scores above and beyond Demographics, and this, too, is was statistically significant (p < .50) at predicting PTG-outcomes when combined with Demographics (p < .004). Further, after controlling for both Demographics, as well as, Military Factors, the seven categories of meaning (MacDonald et. al, 2012) not only did account for a statistically significant amount of variance in PTG-outcome scores (p < .000), but they also explained approximately 67 percent of total scores for PTG, among the sample population. The strongest individual predictor of PTG-outcomes in the overall model appeared to be for the meaning category of Fair Treatment (p < .000) (MacDonald et. al, 2012). Overall, the results found in this chapter provide compelling implications for military and mental health professionals. These results are certainly additive to the extant literature, even with the limitations implicit to this type of research.
Chapter 5 – Conclusions, Discussions, and Suggestions for Future Research

In this final chapter, the author will suggest how the results from the analyses may extend the current literature and provide potentially helpful information for military and other human service professionals. Findings from this work might contribute to understandings of different categories of meaning (MacDonald et. al, 2012) as predictors of PTG and how humanistic approaches might prove additive to current conceptions of post-traumatic growth, particularly in military veterans. Finally, limitations, multicultural considerations, and suggestions for future research and practice will be presented. First, however, the researcher will examine, separately, a key finding from this study that may help to inform this scholarship's applicability in counseling practices and literature.

Implications for Counseling Practice

Based on the findings of this study, it may be suggested that facilitating PTG could be largely predicted by Clinical Mental Health Counselors (CMHCs) attending to the existential aspects of clients’ experiences, particularly in work with USMVs that have survived trauma. This said, interventions that seek to assist USMVs in facilitating greater PTG-outcomes in the aftermath of traumatic experiences may find it efficacious to utilize counseling interventions from more humanistic, existential theoretical-groundings, seeking to help people identify or create a meaningful life (Frankl, 1959; May, 1964; Yalom, 2002). Like many of the cognitively-based mental health interventions used with Veteran-survivors of trauma(s) at Veterans Administration (VA) hospitals, humanistic and existential approaches acknowledge the importance of evaluating clients’ thoughts as potential indicators of mental wellness. Additively, though, these approaches may also seek to take these efforts a step further – attempting to
examine how the ways in which people think about their situations may then affect the degree to which they found their lives to be meaningful.

**Meaning as Predictors of PTG among Veterans**

A fundamental inquiry in this study was the degree to which meaning might explain PTG-outcomes among a population of United States Military Veterans (USMVs). The results suggest that the combination of all seven categories of meaning accounted for 67 percent of variance in PTG-outcomes measured via the PTGI-SF (Cann et. al, 2010) when controlling for both personal demographics and military factors. In fact, the change in variance accounted for in the seven categories of meaning is more statistically significant than personal demographics and military factors combined ($\Delta F[7, 54] = 4.95, p < .000, \Delta R^2 = .21$). Thus, it may be imperative for mental health professionals seeking to assist in facilitating the development of PTG with clients that are Veterans, to attend strongly to how these USMVs make meaning of their experiences (looked at in greater detail throughout this chapter). While the seven sources of meaning measured via the BPMP (MacDonald et. al, 2012) accounted for the most variance in the overall model and acted as a statistically significant combined-predictor of PTG, not all categories of meaning predict PTG-outcomes to the same degree.

**Meaning in achievement and fair-treatment.** The category of meaning that the sample population reported as being most meaningful (having the highest average score) was Achievement (17.56, D = 2.90). Although it was not found to be a statistically significant predictor of PTG-outcomes among the sample population of Veterans, it may speak to an important area for mental health professionals to focus on when working with USMVs reporting a history of trauma. The reason this may be efficacious is that it may provide several creative clinical-opportunities while engaged in professional mental health work. For example, if many
Veterans are found to find meaning in their lives in their achievements, mental health counselors might use Socratic Dialogue (Frankl, 1959) to assist them in reframing any disruptions to their meaning systems due to trauma as an opportunity for PTG. Meaning in Fair-Treatment was found to be the most significant predictor of PTG, explored in greater detail in the sections on social justice issues. As a clinical point of inquiry, though, it may be fruitful (in as much as it helps to facilitate greater PTG-outcomes) to explore past experiences and other potential issues related to fair-treatment that may act as either barriers or facilitators of helping clients develop PTG.

A Cognitive-Existentialism or an Existential-Cognitivism?

In contrast, assessing cognitions based on meaning-based outcomes such as the seven categories of meaning (MacDonald et. al, 2012), in lieu of cognitive-behaviorally-based outcomes like the Transformational Model (Calhoun & Tedeschi, 2004), may be a strong philosophical ‘middle-ground’. Let us look at a potential cognitive evaluation of this study’s findings that the seven categories of personal meaning (MacDonald et. al, 2012), collectively, may account for up to 21 percent of unique variance among PTG-outcomes within the sample population of USMVs. This could suggest, for example, that the way these participants thought about the degree of life’s meaningfulness from those difference categories of personal meaning, combined, largely affected PTG-outcomes. More specifically, the way participants think about Meaning in Religion or spirituality (discussed later in this section), and Meaning in Fair Treatment (discussed sections on Multiculturalism and Social Justice), may have been the most important predictors – within the most powerfully explicative step in this HRM-model – in forecasting PTG-outcomes. This will be discussed from a slightly nuanced perspective later in
this chapter, in the section on how this study’s findings may help to inform potential additions to
the Transformational Model (Calhoun & Tedeschi, 2004).

**PTG and Demographics**

When used as the sole predictors of PTG, collectively, it appeared that they may act as statistically significant predictors of PTG among the sample population of USMVs (p < .010). While the sample was strongly homogenous, in favor of higher representation for white, heterosexual, male, Marines, there appeared to be strong representation among Hispanic participants (n = 16, 18%), discussed in greater detail in the sections on Sampling Limitations, as well as, Multiculturalism and Social Justice. This said, at all three steps of the HRM process, including when controlling for Military Factors and personal meaning (MacDonald et. al, 2012), it appeared that sexuality had a strong influence on PTG. Being bisexual appeared to be a significant predictor of PTG compared to participants that reported being heterosexual. This could be since, currently, the US tends to privilege heteronormativity (Moon, 2010), socio-politically positioning those that do not identify as heterosexual for increased experiences of trauma.

**PTG and Military Factors**

When controlling for demographics, it appears that the Military Factors, combined, accounted for nearly a statistically significant amount of variance in PTG-outcomes (p < .004). More specifically, being Enlisted was indicated as a potentially important predictor of PTG among USMVs, perhaps, because they are likely at increased risk of multiple forms of trauma, due to factors such as the nature of their work (e.g., often serving more “intimately” in combat-arms roles), and perhaps, demographics, such as lower education (which may need to be added in future studies).
Meaning-in-Relationships for Military Veterans

Though the meaning-category of relationships from the BPMP (MacDonald et. al, 2012) was not a statistically significant predictor of PTG-outcomes in the overall-model, the sample population of USMVs reported that relationships provided them the second greatest source of meaning out of the seven provided (16.46 out of 21, SD = 3.48). Norcross (2002) referred to effective counseling relationships as, “Empirically Supported Therapy Relationships” (p.19). These relationships may provide the kind of therapeutic rapport marked with enough regard for others lived experiences that it disarms enough of their clients’ defenses to allow for more holistic examinations of what it is like for each to be in the world (Frankl, 1959; Rogers, Gendlin, Kiesler, & Truax, 1967). While acknowledging that this study has some sampling limitations, it may still provide evidence in support of further exploring both a humanistic, meaning-based model of PTG, as well as, the effects of using humanistic, meaning-based (e.g., relationally-focused) counseling approaches with USMV survivors of trauma (Lantz, 1992).

Contributions to the Counseling Literature: Nuances of the Transformational Model

Again, overall, meaning (as operationalized within the seven categories of meaning on the BPMP; See: MacDonald et. al, 2012), appeared to be a suitably robust set of predictors towards helping to explain PTG-outcomes above and beyond military factors and demographics (Overall Model’s $R^2\Delta = .21$). Theoretically, the results of this study may suggest that, for this specific sample population, meaning (MacDonald et. al, 2012) significantly ($p < .000$) explained PTG (Cann, et. al, 2010), when controlling for demographics and military factors. If an expanded study with greater control over sampling results in similar outcomes, the researcher may be able to conclude with stronger certainty that the construct of PTG developed by Calhoun and Tedeschi (2004) is exceedingly like at least the two categories of meaning (MacDonald et. al,
identified as significant in this study. As the categories of meaning (MacDonald et. al, 2012) were derived within a humanistic paradigm, it might then be reasonable to suggest that, for this sample population, humanistic variables predict PTG.

As previously mentioned, the strong statistical significance of personal meaning as a predictor of PTG among USMVs (p < .000) does not insinuate that a model with as much research-backing as Calhoun and Tedeschi’s (2004) Transformational Model is, necessarily, nor entirely, incorrect. This study’s use of Wong’s seven categories of meaning (MacDonald et al., 2012) as a means of predicting PTG-outcomes, may merely add needed-nuance to their model. Put simply, this synthesis might suggest that the way people think about what makes our lives meaningful may influence whether meaning can be re-constructed in trauma’s aftermath.

Alternatively, and more in alignment with the tenets of Logotherapy (Frankl, 1959), it could also be that trauma’s effects on meaning affect the way people think about and respond to their circumstances (e.g., traumas), either resulting in PTG or not. This, in part, may evidence support for Frankl’s (1959) assertion that the attitudes we adopt regarding our circumstances, affect our outcomes – including, perhaps, PTG, according to this study. Further, Frankl’s (1959) Logotherapy is a large part of the theoretical foundations of the BPMP (MacDonald et. al, 2012) used to measure meaning in this study.

**Religion, PTG among USMVs**

It is argued that, based on this study’s findings that increases in meaning via Religion or Spirituality, even when rated low overall within the sample population, may have a statistically significant effect on raising PTG-outcomes among USMVs (by approximately .30 points for every one point in Religion or Spirituality). This may provide evidence in support of one of this dissertation’s premiere tenets – that PTG likely transcends merely the cognitive aspects of post-
traumatic experiences, but also, spiritual aspects of client-wellness, as well. Moreover, this finding on Religion or Spirituality being strong predictors of PTG-outcomes is consistent with Frankl’s (1959) Logotherapy, asserting that alterations to personal meaning occur within the spiritual (e.g., noetic) dimension of human-existence – one that we now can say, at least within this sample of USMVs, may be an important aspect of PTG. This may be even more evidence supporting the research suggesting that existential factors are the strongest known predictors of PTG – influences that may be manifesting largely in the spiritual as opposed to the cognitive-dimension, as Tedeschi and Calhoun (2004) have posited. Calhoun and Tedeschi (2004), did, though, advise that aspects of meaning (appreciation of life, for example), are important components of their Transformational Model of PTG.

Implications for Multiculturalism & Social Justice

The following sections will briefly examine issues pertinent to multiculturalism and social justice for this study. Topics include meaning-in-Fair-Treatment as a predictor of PTG, sampling as an important consideration of this study, and the potential for varying cultural-viewpoints within the sample regarding mental health, trauma, and stigma. Further, it will include a brief look at some potential methodological limitations, such as the lack of longitudinally-drawn data, poor reliability for the DV-measure, and the lack of a civilian control group for comparison.

Meaning in Fair-Treatment as a Predictor of PTG

It will be argued that the statistical significance of the meaning category of Fair-Treatment (MacDonald et. al, 2012) poses an important challenge for mental health professionals and researchers, alike. In fact, this study’s findings may suggest that, within the sample population of USMVs, for every .52 points in overall scores for meaning, there is a one-point increase in the...
overall score for PTG. This challenge may be described as a call to action, manifest as counselors increasingly donning roles as advocates for and with (Lewis, Arnold, House, & Toporek, 2002) their military-clients, as well as, for the wider military. These efforts would be intended to help destigmatize mental health as a means of facilitating PTG on a systemic-level, given PTG’s positive relationship with Fair-Treatment. Chapters 1 and 2 of this dissertation argued that short-sighted mental health models of trauma-responses run the risk of stigmatizing mental health, most often in favor of influencing societal beliefs towards the notion that trauma inevitably leaves a person wrought with abnormalities. Research on additive gains such as PTG, help balance the availability of scholarship proffering more positive-legacies of trauma(s) – potentially helping to increase the likelihood of seeking professional mental health assistance among Veteran survivors of trauma, and hopefully also resulting in lowered numbers of Veteran-suicides, indirectly. Perhaps more importantly, though, is the infusion of humanism as a means of understanding these additive gains as these are most often theories that seek to normalize the full range of post-traumatic responses as normal responses to abnormal situations (Frankl, 1959). Next, we will examine sampling as an important Multicultural Consideration.

Fair treatment was rated among the least meaningful categories of meaning for Veterans (13.98, SD = 4.48) within the sample (perhaps, because they seldom experience equality amongst the strict hierarchies of military culture; See; Smith, 2014), though Fair Treatment remained the single most statistically predictive (p < .000) category of meaning for being able to anticipate PTG-outcomes. This could suggest that, on the one hand, Veterans in the sample may not value being treated fairly – a reasonable assumption given that they presumably volunteered for military service widely known for being wrought with legalism, especially, among the Marines (the highest represented in the sample). On the other hand, this may buffer these
Veterans from the effects of trauma(s) if, for example, it lessened the shock at the inherent injustice of suffering (and evidenced in their relatively high 36.24/50 average score for the PTG-outcomes).

**Sampling as an Important Multicultural Consideration**

The use of snowball sampling to identify the sample population of USMVs, in lieu of random sampling, was a significant limitation of this study, severely decreasing control over external validity (Field, 2013). Though the sample was normally distributed on the dependent variable (e.g., PTG-outcomes), it is inconsistent with the racial / ethnic distribution of the active military. Figure 5 represents a bar graph comparing the sample population’s variance to that of the total US military force, provided by the Demographics Profile of the Military Community (2014). Evidently, the sample population, though somewhat similar in frequency-distributions, lacks significant representation by participants reporting being African American or Black. Some successes for this study’s sampling, however, shows that strong representation by participants reporting being from other traditionally underrepresented groups, such as those reporting being American Indian or Alaskan Native (4.8% compared to 1%) and those reporting being Asian or Pacific Islander (9.4% compared to 3.7%). Most impressively, those who reported being Hispanic within the sample population represented approximately 22.4 percent, compared to slightly over 10 percent for the total US Armed Forces. This is likely explained by the fact that the snow ball sampling procedures were largely catalyzed by social media networks saturated with people from the American South West, a region largely inhabited by people reporting an Hispanic heritage.
One phenomenon that might help to explain low participation in this study by African American participants is culturally-bound stigmas regarding mental health, having a similar affect as MMHS has on some USMVs. Masuda, Anderson, and Edmonds (2012) mental health stigmas are, “a major obstacle of mental health service use among African Americans” (p. 773). Interestingly, the other major factor these researchers found as being predictive of choosing to avoid seeking mental health services was self-concealment among their study’s population of 163 African Americans (Masuda et. al, 2012). If mental health stigma and self-concealment negatively affect seeking of mental health services among many in the general African American population (Masuda et. al, 2012), the compounded effects of service in military cultures that also often reinforce mental health stigmas may significantly decrease the likelihood of choosing to participate in studies like this one among qualifying-participants within this sub-population.
Methodological Limitations

The lack of a longitudinal component to statistical analyses to further examine potential developmental trajectories of PTG measured via meaning is a significant methodological limitation. A longitudinal approach would have allowed the researchers to control for factors that, based on the model proposed in this dissertation, would be considered exogenous (e.g., uncontrolled or loosely controlled). While this study may have provided a semi-controlled examination of PTG among the sample population, it was only able to do so having acknowledged that the data is merely a snapshot-in-time, open to ample variation across groups, cultures, geographic locations, and time, among other factors. Also, for ease of interpretation, the researchers suggest utilizing the exact demographic categories gathered by the Department of Defense, as this study did not. This made it impossible to derive meaningful conclusions regarding age-wise comparisons between the sample population and the wider US Armed Forces.

Another potential limitation of this study’s methodology is the lack of a between group comparison (Heppner et. al, 2015). A control group was not included because the criterion variable, PTG, requires a history of trauma, making a comparison group characterized by the lack of such a history of trauma invalid as a control for comparing meaningful-outcomes of this study, as it could not be given the criterion-measure (e.g., the PTGI-SF; See: Cann et. al, 2010). Another limitation of this study is that participation is anonymous, making it impossible for the researcher to verify that those who take the electronic surveys, indeed, meet the inclusion-exclusion criterion. Further, the primary humanistic theory underlying the most important instrument in this study, the BPMP (MacDonald, et. al, 2012), is of Eurocentric-origin. Developed by a Jewish Austrian medical doctor prior to World War Two, it has been widely
connected to spiritual and other pastoral forms of psychotherapy (Frankl, 1959). This was not Frankl’s (1986) intention, however, as both prioritizing meaning as a source of healing, as well as allowing participants to define for themselves what constitutes what things are considered meaningful, are more consistent with this approach’s philosophic underpinnings.

Suggestions for Future Research

Any expansions of this study should work to increase the inclusivity and diversity of the sample population. This study’s sample population was overwhelmingly represented by White, Heterosexual, Men. While the sample population did have representation from three different sexualities, six different racial/ethnic groups, and females, it lacked specific representation by those identifying as transgendered, gender nonconforming, intersex, or those that identify as Pansexual or Transsexual. Further, the sample population only had one participant reporting as being Black or African American, so this, too, may be an important subpopulation to target during recruitment. Further, a future study of potential importance may be assessing whether USMVs that report being African American are at increased risk of endorsing MMHS above and beyond their non-African American peers (Masuda et. al, 2012), having also left, potentially, communities that reinforce similar kinds of mental health stigmas. An interesting research question revolves around whether ethnic/racial factors affects the likelihood (or degree) of endorsing MMHS and choosing not to seek mental health services as a result.

The researcher recommends that future studies utilize the longer version of the PTGI-SF (Cann et. al, 2010), to try and improve upon the relatively low reliability rating this instrument evidenced in this study (Cronbach’s Alpha = .65 < .70). After examining item-statistics, it appeared that the removal of any of the 10-items from the PTGI-SF (Cann et. al, 2010) would not have boosted its rating for Cronbach’s Alpha to .70 or greater, as often recommended
It is also recommended that future studies use Structural Equation Modeling (SEM) in work toward delineating more nuanced meaning-based predictive models of PTG that can also explore PTG (Cann et. al, 2012) by its sub-factors, as opposed to as a total score. A potentially helpful outcome of an expanded study with altered methodology would be examining the degree to which each of Wong’s categories of meaning (Wong & Frye, 1998; MacDonald et. al, 2012) predict or explain each of the five factors of PTG, as this study only uses overall-scores on the PTGI-SF (Cann et. al, 2012) as the dependent variable of interest.

Once the sample population for this study is expanded, the researchers suggest using this data to determine if it would be appropriate to further delineate a new model of PTG. For example, based on the findings from this study alone, a measure of PTG that attempts to measure PTG-outcomes using Wong’s BPMP categories of meaning (MacDonald et. al, 2012) might consider excluding the variables of Self-Transcendence ($p < .49$), leaving a fix-factor meaning model of PTG (Achievements, Relationships, Religion/Spirituality, Self-Acceptance, Intimacy, and Fair Treatment), depending on the outcome of an expanded study. Further, a new measure of PTG – a Humanistic Posttraumatic Growth Inventory (HPTGI) – might also then be developed. Once a clear model of humanistic PTG can be delineated (including a valid and reliable means of operationalizing a measure), researchers might then begin testing whether the new model remains normative within the wider population of Veterans using mental health services. They might then also be able to formally test whether this alternative model has the intended affect – more effectively normalizing the full range of trauma-responses to minimize stigma that all too often results in US Military Veterans choosing suicide over counseling. This dissertation study represents a small step in that process – an attempt to continue serving those who serve this country.
Conclusion

The purpose of this dissertation was to both contribute to the literature on PTG among an at-risk population of USMVs (Jacobson, 2011), but also, to determine whether a humanistic model of PTG using measures of meaning would be able to predict PTG among Veterans. In conclusion, the overall model was found to be statistically significant (p<.000) based on the HRM analysis, conducted with a sample of 85 USMVs. Another salient finding was that two of the seven categories of meaning on the BPMP (MacDonald et. al, 2012) were statistically significant predictors of PTG-outcomes: Fair Treatment (p < .000) and Religion (p < .02). Veterans in the sample found that meaning-categories of Achievement (17.56), Relationships (16.46), and Intimacy (16.16) as the three most meaningful to them at the time of the assessments. The least meaningful categories of meaning, as reported by the sample population of Veterans were Fair-Treatment (13.98), Self-Acceptance (13.84), and Religion (9.08). The average score for PTG (out of 50) for the sample population was 36.24. Broad suggestions for future research include expanding the study, focusing recruitment on traditionally under-represented racial, ethnic, cultural, sexual, and gender populations of USMVs, among others. The researcher also suggests that mental health professionals consider both the benefits and advantages of using either Calhoun & Tedeschi’s (2004) Transformational model of PTG, or the one presented and examined in this study, particularly when used with USMVs. The Transformational Model of PTG has more studies validating its grasp on post-traumatic gains, though the model’s cognitive-roots may make it less effective in de-stigmatizing post-traumatic responses compared to this study’s humanistic, meaning-based alternative conceptualization. On the other hand, sampling bias and the lack of a longitudinal component to data-collection may act as barriers to external-validity for this study. Counselors are advised to attend to more than just
client-defined sources of meaning, but more specifically, purpose derived amid therapeutic-encounters with a relationally-focused professional. This may be of importance when working with populations reporting a history of trauma, towards assisting with the facilitation of greater PTG-outcomes.
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Appendix – A: Informed Consent Survey Verification

A Humanistic Examination of Posttraumatic Growth in United States Military Veterans

Informed Consent Survey Item
February 10, 2017

Matthew Lemberger-Truelove, PhD and Aaron Smith, MA, from the Department of Individual, Family, and Community Education, are conducting a research study. The purpose of the research is to examine whether the degree to which we perceive meaning in our lives can explain any growth we may have experienced because of our traumatic experience(s). You are being asked to participate in this study because you self-report as being over the age of 18, that you have experienced trauma(s) at some point(s) in your life, and that you have served in the United States Armed Forces. You are also agreeing that your participation is in no way funded by the US government (nor is your participation done via a US government device, nor while on US government-owned property).

Your participation will involve answering survey questions pertaining to some demographic information, a measure of perceived life-meaning (how purposeful you currently find your life), and regarding whether you have experienced growth in certain areas of functioning because of your traumatic experience(s) (referred to as Posttraumatic Growth). The three surveys should take about 20 minutes to complete. The surveys include questions such as “I discovered that I am stronger than I thought I was” and, “I accept my limitations.” Your involvement in the study is voluntary, and you may choose not to participate. You can refuse to answer any of the questions at any time, except for the participant screening questions verifying the information contained in this consent. There are no names or identifying information associated with your responses and all your data will remain de-identified throughout all phases of the research study. There is no way to withdraw your data once you have provided it (as your data cannot be identified amongst the other participants’ responses); however, your participation will remain anonymous and de-identified always. There are no known risks in this study, but some individuals may experience discomfort or loss of privacy when answering questions. Data will be gathered securely via this HIPAA-compliant survey software (Opinio) and once downloaded for statistical analyses, it will be secured via 256-bit password protection at all times. Your anonymous, de-identified data will be kept for use in future studies (secured via 256-bit password security), though the researchers will need to seek permission by the UNM IRB for permission to access the data for research.

The findings from this project will provide information on whether or not meaning in life can predict or explain Posttraumatic Growth amongst Veterans that have experienced trauma. If published, results will be presented in summary form only and no quotes or names will be used (nor will any names be recorded at any point in time).

If you have any questions about this research project, please feel free to call Matthew Lemberger-Truelove at 505-277-4575. If you have questions regarding your rights as a research subject, or about what you should do in case of any harm to you, or if you want to obtain information or offer input you may call the UNM Office of the IRB (OIRB) at (505) 277-2644 or irb.unm.edu.

By clicking “I agree” you will be agreeing to participate in the above described research study. If you do not agree, please select, "I do not agree" and exit all surveys to end participation.

☐ I agree
☐ I do not agree
Appendix – B: Participant Screening Survey

**DIRECTIONS:** The following questions are intended to screen out individuals that may not meet the requirements to participate in this study. Unlike the rest of the questions in this study, you are required to provide an answer for the following questions. Please indicate your response by either selecting “yes” or “no” to the questions being asked.

- Are you at least 18 years of age?
  - Yes
  - No

- Are you a United States Military Veteran?
  - Yes
  - No

- Are you completing this survey on a government installation or while being paid by the government or on a government funded device?
  - Yes
  - No

- Have you experienced a traumatic experience at any point in time while being a member of the United States Armed Forces?
  - Yes
  - No
Appendix – C: Demographics Survey Questionnaire

Researcher-Developed

DIRECTIONS: Please respond to each of the following questions by either selecting the correct response or by filling in your answer in the box provided. The only question that is required to respond to is the question on age; however, if you choose not to respond to any of the other questions, simply leave them blank.

What is your age?

☐ 18 to 24
☐ 25 to 34
☐ 35 to 44
☐ 45 to 54
☐ 55 to 64
☐ 65 to 74
☐ 75 or older

Please describe your race/ethnicity:

☐ American Indian or Alaskan Native
☐ Asian / Pacific Islander
☐ Black or African American
☐ Hispanic
☐ White / Caucasian
☐ I choose not to answer this question.
☐ Multiple ethnicity / Other (Please specify)

What is your gender?

☐ Female
☐ Male
☐ Intersex
☐ Transgender
☐ Gender Non-Conforming
☐ I choose not to answer this question.
☐ Other (please specify)
What is your sexual orientation?

- Lesbian
- Gay
- Straight or Heterosexual
- Transsexual
- Bisexual
- I choose not to respond to this question.
- Other (please specify) __________

In which branch (or branches) of the US military have you served (check all that apply)?

- Army
- Marine Corps
- Navy
- Air Force
- Coast Guard
- I choose not to answer this question.

When you were in the military, which of the following describe(d)re your status (check all that apply)?

- Enlisted
- Officer
- Warrant Officer
- I choose not to answer this question.

In what year did you begin your military service? If you wish not to answer, please type “N/A.”

_________

In what year were you separated from military service? If you are still in the military, please write, “Still in.” If you wish not to answer, please type “N/A.”

_________

When did your traumatic experience(s) occur (Select all that apply):

- Before my military service
- During my military service
- After my military service
- I choose not to answer this question

Appendix – D: Brief Personal Meaning Profile (MacDonald et. al, 2012)

**DIRECTIONS:** This questionnaire is intended to identify what really matters in your life and measures people’s perception of personal meaning in their lives. Generally, a meaningful life involves a sense of purpose and personal significance. However, people often differ in what they value most, and they have different ideas as to what would make life worth living. The following statements describe potential sources of a meaningful life. Please read each statement carefully and indicate to what extent each item characterizes your own life. You may respond by selecting the appropriate number according to the following scale:

1 2 3 4 5 6 7

(Not at all) (Moderately) (A great deal)

For example, if going to parties does not contribute to your sense of personal meaning, you may circle 1 or 2. If taking part in volunteer work contributes quite a bit to the meaning in your life, you may circle 5 or 6.

It is important that you answer honestly on the basis of your own personal experiences

1.) I believe I can make a difference in the world
1 2 3 4 5 6 7

2.) I have someone to share intimate feelings with
1 2 3 4 5 6 7

3.) I strive to make this world a better place
1 2 3 4 5 6 7

4.) I seek to do God’s (or creator[s]) will
1 2 3 4 5 6 7

5.) I like challenge
1 2 3 4 5 6 7

6.) I take initiative
1 2 3 4 5 6 7
7.) I have a number of good friends
1 2 3 4 5 6 7

8.) I am trusted by others
1 2 3 4 5 6 7

9.) I seek to glorify God (or a creator)
1 2 3 4 5 6 7

10.) Life has treated me fairly
1 2 3 4 5 6 7

11.) I accept my limitations
1 2 3 4 5 6 7

12.) I have a mutually satisfying loving relationship
1 2 3 4 5 6 7

13.) I am liked by others
1 2 3 4 5 6 7

14.) I have found someone I love deeply
1 2 3 4 5 6 7

15.) I accept what cannot be changed
1 2 3 4 5 6 7

16.) I am persistent and resourceful in attaining my goals
1 2 3 4 5 6 7
17.) I make a significant contribution to society

1 2 3 4 5 6 7

18.) I believe that one can have a personal relationship with God (or creator[s])

1 2 3 4 5 6 7

19.) I am treated fairly by others

1 2 3 4 5 6 7

20.) I have received my fair share of opportunities and rewards

1 2 3 4 5 6 7

21.) I have learned to live with suffering and make the best of it

1 2 3 4 5 6 7

Note. Permission granted by the copyright holder, Paul Wong, PhD

(dr.paul.wong@gmail.com)

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Appendix – E: Permissions for Brief Personal Meaning Profile

(MacDonald et. al, 2012)

Paul TP Wong  November 29, 2016 at 9:48 AM
Re: Permission to Utilize the BPMP for Dissertation Research
To: Aaron Smith

Hi Aaron,

I am pleased to grant you the permission to use the Brief Personal Meaningful Profile for research purposes.

Best,

Paul

Paul T. P. Wong, Ph.D., C.Psych. (www.drpaulwong.com)
President, International Network on Personal Meaning President, Meaning-Centered Counselling Institute Inc.

See More from Aaron Smith
Appendix – F: Posttraumatic Growth Inventory – Short Form

Adapted with Permission from Cann et. al, 2010 for Electronic Format

DIRECTIONS: Indicate for each of the statements below the degree to which this change occurred in your life as a result of the crisis (e.g., your trauma[s]) using the following scale, shown below. Please select the number that corresponds to your answer and if you choose not to respond, please select the, "I choose not to answer this question" option.

1. I changed my priorities about what is important in life. (V-1).
   - 0 = I did not experience this change as a result of my crisis.
   - 1 = I experienced this change to a very small degree as a result of my crisis.
   - 2 = I experienced this change to a small degree as a result of my crisis.
   - 3 = I experienced this change to a moderate degree as a result of my crisis.
   - 4 = I experienced this change to a great degree as a result of my crisis.
   - 5 = I experienced this change to a very great degree as a result of my crisis.

2. I have a greater appreciation for the value of my own life (V-2).
   - 0 = I did not experience this change as a result of my crisis.
   - 1 = I experienced this change to a very small degree as a result of my crisis.
   - 2 = I experienced this change to a small degree as a result of my crisis.
   - 3 = I experienced this change to a moderate degree as a result of my crisis.
   - 4 = I experienced this change to a great degree as a result of my crisis.
   - 5 = I experienced this change to a very great degree as a result of my crisis.

3. I am able to do better things with my life (II-11).
   - 0 = I did not experience this change as a result of my crisis.
   - 1 = I experienced this change to a very small degree as a result of my crisis.
   - 2 = I experienced this change to a small degree as a result of my crisis.
   - 3 = I experienced this change to a moderate degree as a result of my crisis.
4. I have a better understanding of spiritual matters (IV-5).
   0 = I did not experience this change as a result of my crisis.
   1 = I experienced this change to a very small degree as a result of my crisis.
   2 = I experienced this change to a small degree as a result of my crisis.
   3 = I experienced this change to a moderate degree as a result of my crisis.
   4 = I experienced this change to a great degree as a result of my crisis.
   5 = I experienced this change to a very great degree as a result of my crisis.

5. I have a greater sense of closeness with others (I-8).
   0 = I did not experience this change as a result of my crisis.
   1 = I experienced this change to a very small degree as a result of my crisis.
   2 = I experienced this change to a small degree as a result of my crisis.
   3 = I experienced this change to a moderate degree as a result of my crisis.
   4 = I experienced this change to a great degree as a result of my crisis.
   5 = I experienced this change to a very great degree as a result of my crisis.

6. I established a new path for my life (II-7).
   0 = I did not experience this change as a result of my crisis.
   1 = I experienced this change to a very small degree as a result of my crisis.
   2 = I experienced this change to a small degree as a result of my crisis.
   3 = I experienced this change to a moderate degree as a result of my crisis.
   4 = I experienced this change to a great degree as a result of my crisis.
   5 = I experienced this change to a very great degree as a result of my crisis.
7. I know better that I can handle difficulties (III-10).
   - 0 = I did not experience this change as a result of my crisis.
   - 1 = I experienced this change to a very small degree as a result of my crisis.
   - 2 = I experienced this change to a small degree as a result of my crisis.
   - 3 = I experienced this change to a moderate degree as a result of my crisis.
   - 4 = I experienced this change to a great degree as a result of my crisis.
   - 5 = I experienced this change to a very great degree as a result of my crisis.

8. I have a stronger religious faith (IV-18).
   - 0 = I did not experience this change as a result of my crisis.
   - 1 = I experienced this change to a very small degree as a result of my crisis.
   - 2 = I experienced this change to a small degree as a result of my crisis.
   - 3 = I experienced this change to a moderate degree as a result of my crisis.
   - 4 = I experienced this change to a great degree as a result of my crisis.
   - 5 = I experienced this change to a very great degree as a result of my crisis.

9. I discovered that I’m stronger than I thought I was (III-19).
   - 0 = I did not experience this change as a result of my crisis.
   - 1 = I experienced this change to a very small degree as a result of my crisis.
   - 2 = I experienced this change to a small degree as a result of my crisis.
   - 3 = I experienced this change to a moderate degree as a result of my crisis.
   - 4 = I experienced this change to a great degree as a result of my crisis.
   - 5 = I experienced this change to a very great degree as a result of my crisis.

10. I learned a great deal about how wonderful people are (I-20).
    - 0 = I did not experience this change as a result of my crisis.
☐ 1 = I experienced this change to a very small degree as a result of my crisis.

☐ 2 = I experienced this change to a small degree as a result of my crisis.

☐ 3 = I experienced this change to a moderate degree as a result of my crisis.

☐ 4 = I experienced this change to a great degree as a result of my crisis.

☐ 5 = I experienced this change to a very great degree as a result of my crisis.

*Note.* Permission granted by the copyright holder, Arnie Cann, PhD (acann@uncc.edu)
Appendix – G: Permissions for Posttraumatic Growth Inventory – Short Form

(Cann et. al, 2010)

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Cane, Arnie
Re: Permission to Utilize the PTGI-SF for Dissertation Research
To: Aaron Smith

Aaron,

You are welcome to use the PTGI-SF in your research. Good luck.

Arnie

See More from Aaron Smith

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Arnie Cann
Emeritus Professor
Department of Psychology and
Health Psychology Doctoral Program
UNC Charlotte
9201 University City Blvd
Charlotte, NC 28223-0001
acann@uncc.edu
Personal Web: https://clas-pages.uncc.edu/arrie-cann/
Posttraumatic Growth Research Web: www.ptgi.uncc.edu/
Please consider the environment before printing.

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Appendix – H: Confirmation of Study’s Permission to Avoid VA/DoD IRBs

Hi Aaron. Your project, as proposed, would not require VA IRB review (or DoD review, which is based on funding). Here is the response I received from the VA IRB office:

Unless the research is proposing to utilize VA resources for recruiting or any other aspect of the study, Veterans have autonomy to participate in the research and the VA IRB would not have oversight.

If you have any additional questions, please give me a call.

Thank you!
Linda Petree

Linda Petree, CIP
Director, Office of the Institutional Review Board
The University of New Mexico
(505) 277-0472