

---

Theses and Dissertations

---

2021

**A systematic review of the literature on post-traumatic growth in police officers after exposure to potentially traumatic events**

Michael Norfleet

Follow this and additional works at: <https://digitalcommons.pepperdine.edu/etd>

---

**Recommended Citation**

Norfleet, Michael, "A systematic review of the literature on post-traumatic growth in police officers after exposure to potentially traumatic events" (2021). *Theses and Dissertations*. 1218.  
<https://digitalcommons.pepperdine.edu/etd/1218>

This Dissertation is brought to you for free and open access by Pepperdine Digital Commons. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of Pepperdine Digital Commons. For more information, please contact [bailey.berry@pepperdine.edu](mailto:bailey.berry@pepperdine.edu).

Pepperdine University  
Graduate School of Education and Psychology

A SYSTEMATIC REVIEW OF THE LITERATURE ON POST-TRAUMATIC GROWTH IN  
POLICE OFFICERS AFTER EXPOSURE TO POTENTIALLY TRAUMATIC EVENTS

A clinical dissertation submitted in partial satisfaction  
of the requirements for the degree of  
Doctor of Psychology

by

Michael Norfleet

October, 2021

Susan Hall, J.D., Ph.D. – Dissertation Chairperson

This clinical dissertation, written by

Michael Norfleet

under the guidance of a Faculty Committee and approved by its members, has been submitted to and accepted by the Graduate Faculty in partial fulfillment of the requirements for the degree of

DOCTOR OF PSYCHOLOGY

Doctoral Committee:

Susan Hall, J.D., Ph.D., Chairperson

Cary Mitchell, Ph.D.

Edrick Dorian, Psy.D., ABPP

© Copyright by Michael Norfleet (2021)

All Rights Reserved

## TABLE OF CONTENTS

	Page
LIST OF TABLES.....	vi
LIST OF FIGURES .....	vii
ACKNOWLEDGMENTS .....	viii
VITA.....	ix
ABSTRACT .....	xi
Chapter 1: Literature Review.....	1
Introduction .....	1
Significance .....	3
Related Constructs.....	6
PTG Clinical Considerations .....	10
PTG Assessment Considerations and Measures.....	12
PTG in Law Enforcement.....	15
Summary and Purpose .....	18
Chapter 2: Methodology .....	19
Systematic Review of the Literature.....	19
Literature Search Process .....	19
Research Team.....	22
Screening and Quality Appraisal .....	23
Analysis .....	26
Chapter 3: Results.....	31
Process and Pattern Coding Results Within Sources.....	31
Pattern Coding and Abstraction Results Across Sources .....	39
Research Question .....	43
Chapter 4: Discussion .....	45
Overview.....	45
PTG Models and Law Enforcement .....	46
Individual Pattern Codes .....	47
Limitations and Potential Contributions .....	52
Conclusion .....	57
REFERENCES .....	58

APPENDIX A: Table of Included Studies .....	78
APPENDIX B: PRISMA Flow Diagram .....	82
APPENDIX C: Sample Quality Appraisal Form.....	84
APPENDIX D: IRB Non-Human Subjects .....	87

## LIST OF TABLES

	Page
Table 1: Quality Appraisal Percentage Agreement with Ratings .....	25
Table 2: Process Coding Percentage Agreement .....	29
Table 3: Within-Source Process Codes with Frequency and Source, and Within-Source Pattern Codes...	37
Table 4: Across-Source Pattern Themes and Codes with Frequency and Sources .....	41
Table 5: Abstracted Codes and Themes .....	43

## LIST OF FIGURES

Page

Figure 1: PRISMA Flow Diagram.....	82
------------------------------------	----



## ACKNOWLEDGEMENTS

I would like to thank my family, friends, professors, and clinical supervisors for their constant support and encouragement throughout this challenging yet rewarding process. I would like to thank my parents for always believing in me, showing me that all obstacles can be overcome, and instilling a reliable work ethic in me. I would like to thank my girlfriend for being as invested in this process as I was and always helping me find motivation. I want to thank Dr. Mitchell and Dr. Dorian for agreeing to serve on my committee and advising me in this process through their vast clinical and academic knowledge on the topic. Lastly, I would like to thank Dr. Hall for everything that she has done. Since 2015, she has written numerous letters of recommendation, provided me with research experience, and continuously supported me throughout my graduate school training. Her mentorship and dedication are invaluable.

## VITA

**EDUCATION:*****Psy.D. Clinical Psychology | Pepperdine University (APA Accredited)***

- *September 2021*
- *Dissertation Topic: A Systematic Review of the Literature on Post-Traumatic Growth in Police Officers After Exposure to Potentially Traumatic Events.*
  - *Dissertation Chair: Susan Hall, Ph.D.*
  - *Committee Members: Cary Mitchell, Ph.D. & Edrick Dorian, Psy.D., ABPP*

***M.S. Criminal Justice, Concentration in Strategic Management | Boston University***

- *May 2020*

***M.A. Clinical Psychology with an Emphasis in Marriage and Family Therapy | Pepperdine University***

- *June 2017*

***B.A. Psychology / Pepperdine University***

- *May 2015*

**AWARDS/HONORS:**

- |  |                    |
|--|--------------------|
| • Conrad N. Hilton Foundation Fellow, Union Rescue Mission | <b>2017 – 2018</b> |
| • Pepperdine GSEP Diversity Scholarship                    | <b>2017 – 2021</b> |
| • Psi Chi National Honor Society, Pepperdine University    | <b>2016 – 2021</b> |
| • Boston University Metropolitan College Merit Scholarship | <b>2018 – 2020</b> |

**CLINICAL EXPERIENCE:*****Federal Correctional Institution Tallahassee | Tallahassee, CA    August 2020 – August 2021******Predoctoral Psychology Intern***

Internship Program Director: Hunter McIntyre, Ph.D.

Setting: *Federal Bureau of Prisons*

***Counseling Services – LA Peace of Mind | Los Angeles, CA    December 2019 – August 2020******Psychological Assistant***

Supervisor: Walter Brown, Ph.D.

Setting: *Private Practice*

***Metropolitan State Hospital | Norwalk, CA***

**September 2019 – June 2020**

***Doctoral Psychology Extern***

Supervisor: Derek Wangberg, Psy.D.

Setting: *California State Hospital*

***Union Rescue Mission | Los Angeles, CA***

**September 2017 – June 2020**

***Doctoral Psychology Extern***

Supervisor: Aaron Aviera, Ph.D.

Setting: *Residential Treatment Setting on Skid Row*

**Federal Correctional Institution Terminal Island | San Pedro, CA August 2018–August 2019**  
***Doctoral Psychology Extern***

Supervisors: Terra Follick, Psy.D. & Rogelio Serrano, Psy.D.  
 Setting: *Federal Bureau of Prisons*

**Coalition for Family Harmony | Oxnard, CA**  
***MFT Trainee***

**December 2016 – June 2017**

Supervisor: Denise Payne, LMFT  
 Setting: *Community Mental Health*

**Child Development Institute | Woodland Hills, CA**  
***MFT Trainee***

**December 2015 – December 2016**

Primary Supervisor: Tessa Graham, LMFT  
 Setting: *In-Home Child Mental Health*

**TEACHING/RESEARCH EXPERIENCE:**

**Pepperdine University | Encino, CA**  
***Teaching Assistant for Drew Erhardt, Ph.D.***

**August 2017 – August 2020**

**Los Angeles County Psychological Association**  
***Ethics Committee Appointed Student Member***

**July 2019 – August 2020**

**Pepperdine University | Los Angeles, CA**  
***Graduate Assistant for Pepperdine Psychology Online Programs***

**June 2018 – August 2019**

**Pepperdine Applied Research Center | Encino, CA**  
***Research Assistant for Susan Hall, Ph.D.***

**March 2016 – August 2017**

**Pepperdine University | Malibu, CA**  
***Graduate Assistant for MACLP Daytime Program***

**September 2015 – August 2017**

**STUDENT GROUPS**

- Psy.D. Student Government Association (Pepperdine University) **2017 - 2020**
- African Students of Psychology and Education Association **2019 - 2021**

**ORGANIZATIONS:**

- American Psychology – Law Society (Division 41 of APA) **2016 – Present**
- Los Angeles County Psychological Association **2018 – Present**

## ABSTRACT

As police departments and officers across the world take on the task of reducing crime and enhancing public safety, their jobs entail the potential of exposure to events that may be experienced as traumatic. In contrast to the larger literature on negative outcomes of potentially traumatic events (PTEs), there is limited knowledge on the potential for post-traumatic growth (PTG) and how clinicians can promote it, generally and in police officers (Westphal & Bonanno, 2007). Tedeschi and Calhoun (1996), “coined the term posttraumatic growth to describe the experience of positive changes that occur as a result of the struggle with major life crises” (Tedeschi et al., 2015, p. 504).

This dissertation sought to understand the possible positive responses police officers have after exposure to PTEs through a systematic review and analysis of the literature. This systematic review reviewed empirical scholarly work that included quantitative publications in peer-reviewed journals and books to examine variables associated with law enforcement officers who have been reported to experience posttraumatic growth. The researcher utilized the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) to ensure a high-quality systematic review (Moher et al., 2015). The researcher used inductive content analysis through process and pattern coding to identify themes from the acquired data. Three themes were abstracted: adaptive coping skills (encompassing themes of coping, experiencing satisfaction, cognitive processing, and experiencing, having, or increasing social support); new beliefs (encompassing themes of finding meaning and system/worldview change); and working through (encompassing the theme of stress/trauma symptoms). Our results highlighted that PTG will not appear without active effort by the officer population. A contribution of this dissertation is that it

elucidated factors that clinicians should consider when working with police officers, including those suffering from trauma, and can guide future research with this population.

## **Chapter 1: Literature Review**

### **Introduction**

Since the Los Angeles Police Department adopted the motto, “To protect and serve” in 1955, police departments across the United States have adopted this phrase and strive to uphold this standard every day. As police departments and officers across the world take on the task of reducing crime and enhancing public safety, their jobs entail the potential of exposure to events that may be experienced as traumatic. With racial tension, instances of police brutality, and resulting calls for police reform/defunding the police (all which have occurred during this dissertation), officers’ potential for exposure to stress and trauma has undoubtedly increased in their daily tasks, such as during meetings and administrative tasks, as well as other crises, including protests and riots. Bennell et al. (2021) illustrated that given current events, there is a need to improve and evaluate use of force and de-escalation training, methods to remediate biases, and misconceptions about police policies and procedures. There is also a need to assist officers in dealing, coping, and thriving when exposed to trauma.

The two main types of potentially traumatic events (PTEs) experienced by police officers are harm or threat to self or witnessing harm or threat to another individual (Chopko et al., 2018). Responses to PTEs vary, and affect individuals across cognitive, spiritual, emotional, and physical domains of functioning (Bonnano, 2008). Both positive and negative changes can occur after exposure to trauma and occur or co-exist at the same time (Cann et al., 2010a; Kunz et al., 2019; Taku et al., 2020; Zieba et al., 2019). Physical, psychosocial, and cultural effects may occur depending on the frequency, intensity, and timing of the trauma (Papazoglou, 2013) or multiple PTEs (Taku et al., 2020). The extent to which an individual centralizes his or her

memory of adversity, reexamines core beliefs, and receives positive responses to disclosures has also been shown to predict PTE effects (Taku et al., 2020).

Negative responses to PTEs have been observed and recorded for quite some time; depression, anxiety, substance abuse, personality disorders, and posttraumatic stress disorder are among the most common negative reactions (Hall et al., 2014). A more recent term used for negative PTE responses is posttraumatic depreciation (PTD; Taku et al., 2020). The repeated management of potentially traumatic crime and disaster incidents involving assault, injury, or death place police officers at elevated risk of acquiring trauma-induced adjustment and mental health disorders with potentially considerable implications for their welfare and job performance (Arnetz et al., 2009).

Although there is a plethora of literature on the negative outcomes of PTEs or PTDs generally and in police officers specifically, less is known about other trajectories, namely resilience and posttraumatic growth (PTG; Westphal & Bonanno, 2007), especially in this population. Regarding resilience, or helping individuals get back to their baseline level of functioning (Hall et al., 2014), attention has been given to officers' stress management strategies. Officers use both adaptive methods of managing occupational stressors (e.g., talk therapy) and maladaptive emotion management coping methods (e.g., suppression of thoughts and feelings; Patterson et al., 2014). Often police officers develop their own subculture due to the specific and challenging demands of their work, and less frequently verbalize their experiences to mental health clinicians (Andersen & Papazoglou, 2014). Notwithstanding, efforts to promote resilience and stress management in officers have been implemented by clinicians for years and can lead to improvements in field work (Patterson et al., 2014).

In contrast to the larger literature on stress and stress management and police officers, there is limited knowledge on the potential for growth and how clinicians can promote it in police officers. PTG has been defined as action-focused growth in response to a traumatic event (Westphal & Bonanno, 2007; Tedeschi & Calhoun, 1996). Hall et al. (2014) described how PTG positively affects levels of distress, well-being, and many other variables related to mental health. Studies show that PTG has been reported more than PTD (Cann et al., 2010b; Michélsen et al., 2017; Taku et al., 2020), but it is also important to note that PTG and PTD can occur concurrently and are not opposites (Taku et al., 2020). Although it has been widely studied in other populations (e.g., veterans; terminally ill people), PTG appears to be studied less with police officers. In order to effectively treat law enforcement officers, clinicians need more guidance from the research literature on promoting the psychological response of PTG.

To redress the lack of literature on promoting PTG in police officers, this dissertation sought to understand further the possible positive responses police officers have after exposure to PTEs through a systematic review and analysis of the literature on PTG variables in this population. It is hoped that this research will elucidate important factors that clinicians should consider when working with police officers and guide future research with this population. To set the stage for the dissertation, the literature review examines PTG as a construct, clinical considerations and assessment of PTG, and PTG in police officers.

### **Significance**

PTG is one of multiple trajectories in response to trauma that is the focus of this introductory literature review to this dissertation. This focus was adopted, in part, because Bonanno (2008) suggested that individuals in the field of psychology might have underestimated a human's capacity to thrive after exposure to trauma.



The founding authors of PTG, Tedeschi and Calhoun, relied on two elements to inform their conceptualization of PTG: empirical literature and clinical experiences observed by psychologists. In 1996, they “coined the term post-traumatic growth to describe the experience of positive changes that occur as a result of the struggle with major life crises” (Tedeschi et al., 2015, p. 504). These positive changes are generally seen in the five dimensions or domains of PTG (Hall et al., 2014; Shakespeare-Finch et al., 2013; Weiss & Burger, 2010): increased appreciation for life; changed perception of self (with an increased sense of self-reliance or strength); sense of new possibilities, roles, or paths for one’s life; spiritual change (could include deeper understanding of philosophical questions); and perceived improvements in interpersonal relationships (including more feelings of compassion and connectedness). These five domains have been studied internationally in qualitative (Mosher et al., 2017) and quantitative studies (Taku et al., 2020).

PTG is a complex process. According to the theory, the positive outcomes (growth, etc.) arise after an individual engages in the struggle that is initiated by trauma (Hall et al., 2014). This suggests that growth will not simply appear directly after exposure to some form of trauma. Instead, it involves cognitive and affective processing and cognitive structures (Calhoun & Tedeschi, 2006; Tedeschi & Calhoun, 2004). Tedeschi and Calhoun (2004) also posited social support and coping capacity as influencing factors in PTG. In their more recent theoretical model, reflecting research with culturally diverse samples and contexts, Tedeschi et al. (2018) described the PTG process as involving challenging one’s core beliefs, cognitive processing, and perceived responses to disclosure in therapy (related to social support). Recent research across 10 countries showed different patterns of the above predictors, with a key variable being the way that others respond to disclosing traumatic experiences (Taku et al., 2020).

Such research supports Weiss and Berger (2010)'s earlier writings that suggested that individuals all over the world perceive benefits from their labors with traumatic events and that PTG has culture-specific characteristics. Weiss and Berger (2010) posited that PTG is a depiction of the societal values of the culture and the meaning making narratives they stimulate. The authors showed that collectivistic cultures, like Spain, experience more communal coping (Weiss & Berger, 2010). The authors stated that PTG has culturally specific nuances based on many factors: nationality, geographic location, language spoken, etc.

Embracing the complexity of PTG, Schaefer and Moos (1998) proposed a broader model of PTG than the more cognitively-focused model of Tedeschi and Calhoun. In Schaefer and Moos' model, cognitive processes are preceded by environmental resources (e.g., social support, financial, home and community) and personal system factors (e.g., sociodemographics, self-efficacy, resilience, prior crisis experience), which shape event-related factors (e.g., severity, onset, frequency, predictability) during life crises and influence how individuals process and cope with them, which, in turn, affects post-traumatic outcomes (Jia et al., 2015; Yan et al., 2021).

Another related cognitive consideration is the distinction between genuine and imagined or self-perceived PTG. In Maercker and Zoellner (2004) two-component model of PTG, the constructive (genuine) component depicts an individual's functional adjustment after going through a traumatic event, whereas the illusory component reflects emotional avoidance and denial in the form of illusions. Corman et al. (2021) cautioned that retrospective measures (e.g., Post Traumatic Growth Inventory [PTGI]) target self-perceived or illusory change, instead of actual change. Accordingly, Infurna and Jayawickreme (2019) stated that traditional research

using such measures of PTG is methodologically flawed and more methodologically robust techniques for assessing actual change should be utilized (e.g., Life Story Interview).

Of note, the PTG founders' use of the concept and the literature that undergirds and expands upon it, is rooted in history. Although the PTG trajectory has been closely examined for about 30 years, Tedeschi et al. (2015) described how this phenomenon—that struggling sometimes produces strength and growth—has existed since ancient times in religious and philosophical readings. For example, Caplan (1964) and Frankl (1963) identified that positive psychological change can occur following stressful circumstances, such as bereavement, war, physical disability, and societal events (Tedeschi et al., 2015), including COVID-19 (Yan et al., 2021). Research also shows that growth can occur following sexual trauma, combat violence, divorce, and medical conditions and procedures (Cobb et al., 2006; Danhauer et al., 2013a). For example, sexual trauma (e.g., via sexual abuse, rape, harassment) can have many sexual, physical, emotional, and psychological effects for the survivors. For a long time, it was believed that victims and survivors of sexual harassment could not be diagnosed with Post Traumatic Stress Disorder (PTSD), but that notion has changed over the years (Bryant-Davis, 2011).

### **Related Constructs**

There have been many similar terms coined throughout the years that touch on the PTG construct, such as stress conversion, stress-related growth, resilience, hardiness, mental toughness, grit, flourishing, thriving and adversarial growth (Tedeschi et al., 2015). Some of these terms can be thought of as synonyms for PTG (Tedeschi et al., 2015); whereas others can be differentiated. Of note, use of the words “positive” or “growth” appears in all the definitions of the related constructs expanded on next.

Strens, studied by Finkel (1974), were defined as experiences that promote health. Although they were described as the opposite of trauma, Finkel found that these experiences are not completely void of trauma. Stren conversion was termed as the process in which traumas are transformed into strens (Finkel, 1974). As such, Veevers (1991) described strens as a positive personality changing or growth experience. Although stren is a more outdated term that is not used as often in current literature, both stren and PTG are terms that convey the experience of growth.

Stress-related growth is the concept that gauges positive responses to stress (Park et al., 1996). Bjorck and Byron (2014) defined stress-related growth as enhanced well-being. The research done by Park et al. (1996) suggests that PTG and stress-related growth are synonymous terms. The authors examined the Stress Related Growth Scale (SRGS; Park et al., 1996) and its utility with determining positive outcomes for college students after exposure to stress. The research found that the SRGS was positively related to a change in optimism, positive affectivity, and increased social support. These findings spoke to the validity of the SRGS (Park et al., 1996).

Resilience is thought of as being well or positive adaptation in the face of adversity (Ryff & Singer, 2003; Thomas & Albright, 2018), and staying at or returning to a baseline level of functioning. Tedeschi and McNally (2011) made the distinction that PTG is the positive personal changes that result from exposure to, and struggle with, trauma that enable a person to go beyond pre-trauma baseline, not simply returning to baseline. For example, Goldberg et al. (2019) looked at PTG trajectories in individuals with an acquired physical disability and noted how PTG can come with negative cognitive and psychological symptoms, such as those seen in PTSD. Also, whereas some believe that resiliency can be taught before exposure to trauma (Thomas &

Albright, 2018), PTG can be promoted and hoped for, but not taught before the trauma. Thus, some view resilience and PTG as different phenomena/trajectories that people can experience post-trauma (Ho et al., 2008).

Yet, the relationship between resiliency and PTG is also described as ambiguous, given measurement or methodological concerns noted above (Infurna & Jayawickreme, 2019; Mehta et al., 2020) and their conceptual overlap. In other words, both resilience and PTG have been seen as competencies that involve a context-dependent restructuring after adversity (Lepore & Revenson, 2006). For example, Tedeschi and Calhoun (2004) posited that PTG is the outcome of coping with trauma that can reflect resilience, and resiliency has been identified as a factor that increases the possibility of PTG in adversity (Tedeschi & McNally, 2011; Yu et al., 2014). To more accurately investigate the nature of the relationship between resilience and PTG, Infurna and Jayawickreme (2019) recommended:

research designs that prospectively examine (positive or negative) change before and after adversity, along with a stronger sense of and rationale involved in the statistical analyses behind the research (e.g., proper use of growth-mixture modeling and moving away from retrospective assessments). (p. 155)

Like resilience, the term hardiness is found in police literature. This construct is a response to trauma or stress that contains commitment, control and challenge (Andrew et. al, 2008). Hardiness is thought of as a personality trait. Commitment is the ability to find meaning and purpose in potentially stressful events (Andrew et. al, 2008). Control refers to the belief an individual has that he or she can manage the stressful event (Andrew et. al, 2008). Lastly, challenge is when an individual sees a potentially stressful event as an opportunity for growth. The authors suggest that hardiness is one of many factors that can increase resilience.

Similarly, mental toughness and grit are related constructs that have been recognized as interchangeable terms (Fisher & Oyserman, 2017), and are found in work with police officers (e.g., a mental toughness training book for law enforcement officers released in 2007 by Laurence Miller). Powell and Myers (2017) described mental toughness as a fairly stable disposition that involves hardship and adversity. The authors linked this construct to perseverance, performance, as well as negative emotions that fuel future effort and application. Similarly, defining grit as perseverance and passion for long-term goals in the midst of difficulty or adversity, Duckworth et al. (2007) developed the Grit scale to measure the construct. Although the scale is helpful for self-reflection, it comes with limitations, including reference bias due to individuals having different standards by which they judge behavior (Duckworth et al., 2007).

Flourishing has connections to well-being and PTG. Middleton (2016) linked it to Maslow's hierarchy of needs as well as Rogers' theory of self-actualization. Middleton's research shows that flourishing is an intended aspect of self-actualization that is achieved after the basic needs of food and security. According to Seligman (2011), flourishing offers a holistic perspective on well-being and happiness. He states that flourishing occurs when one pays close attention to positive emotions, engagement, relationships, meaning, and accomplishments (PERMA model; Seligman, 2011). When an individual tends to all five aspects, while making connections and accomplishing meaningful tasks, he or she can find fulfillment and flourish (Seligman, 2011). One main difference between flourishing and PTG is that flourishing does not have a deep-rooted concept to growing after exposure to trauma. It is strictly a positive psychology concept that does not require a traumatic event.

Another construct mentioned in the discussion of PTG is thriving. Thriving is connected to psychological well-being (Kam et al., 2018). “Thriving means that individuals are better off than they were prior to encountering the adverse experience” (Kam et al., 2018, p. 642). Conversely, Su et al. (2014) showed that thriving is related to positive mental, physical and social functioning. The authors described thriving as psychological well-being, which seems to differ from PTG. Brown, Arnold et al. (2017) stated that in certain situations individuals survive and others achieve fulfillment. This positive process of achieving fulfillment and experiencing more than surviving is thriving (Brown et al., 2017).

Like PTG, adversarial growth is defined as positive change following adversity (Howells & Fletcher, 2016). A key aspect of adversarial growth that is very similar to PTG is that individuals report some level of development that has improved compared to their pre-trauma functioning (Howells and Fletcher, 2016). When discussing theoretical perceptions of growth while considering their utility in clinical practice, Joseph and Linley (2006) frequently referred to the constructive growth resulting from the exercise of confronting adversity as adversarial growth.

### **PTG Clinical Considerations**

Due to the complexity of PTG, there are several clinical considerations as well as assessment resources that therapists can draw upon in their work. This section briefly reviews clinical considerations, followed by a section on assessment measures.

Calhoun and Tedeschi (1999; 2006) suggested counseling strategies to allow PTG to emerge in therapy: listening without trying to solve, noticing growth, labeling growth, identifying events that the client views as impossible to experience growth, honoring the

affective nature of PTG, and appropriately labeling PTG as occurring due to the coping process rather than the trauma.

Calhoun and Tedeschi (2006) also suggested that clinicians should take the role of an expert companion. This expert companion is someone who utilizes their professional knowledge and human nature to help clients struggling with trauma while recognizing that this healing process and potential growth must be achieved solely by the client (Calhoun & Tedeschi, 2006). Tedeschi and Moore (2016) described how expert companions can play a vital role with PTG by providing guidance, and helping clients stay focused, express emotions, and make sense of cognitions. Given that active cognitive and problem-focused coping have also been associated with PTG (Schaefer & Moos, 1998; Weiss & Berger, 2010), and the importance of communal coping for those identifying with collectivistic cultures (Weiss & Berger, 2010), clinicians should encourage these processes.

Given the valuable role of social support as a mediating factor in the development of PTG (Yu et al., 2014) as well as the role of sharing feelings and a strong sense of connectedness to the community (Weiss & Berger, 2010), Hall et al. (2014) recommended that clinicians include social support interventions with their clients. Clinicians can also encourage avoidance of harmful, invalidating, or troublesome social contacts (Hall et al., 2014).

It is also important for clinicians to validate and accept the described experience of the patient. In doing this, it is important for clinicians to pay close attention to a client's values, which are often overlooked (Tedeschi et al., 2015). It is vital that clinicians create a safe space for clients, since Weiss and Berger (2010) showed that opening up and disclosure can help with the process of coping, which can facilitate PTG. Researchers have found that positive responses



to disclosures was one of the stronger predictors of PTG across the samples from different countries (Taku et al., 2020).

A frequent misconception made by clinicians and researchers alike is that individuals experiencing PTG will unquestionably experience a decrease in their levels of distress (Tedeschi, et al., 2015). The current literature states that even in the presence of growth, there is a perceived level of anguish and PTD can occur at the same time (Taku et al., 2020). For this reason, therapists should continuously monitor a client's symptoms and not make assumptions that growth equals less suffering. It is also imperative for clinicians to track a client's readiness for change. Additionally, when working with clients who have experienced trauma, one should work with what the client presents rather than assumptions made about their process. The process of working through trauma, like many therapeutic processes, takes a great deal of time. For this reason, it is recommended that all clinicians dealing with trauma practice employing a large amount of patience (Tedeschi et al., 2015; Tedeschi & Moore, 2016).

### **PTG Assessment Considerations and Measures**

Park and Lechner (2006) and Infurna and Jayawickreme (2019) recommended that the assessment of PTG be comprehensive, multidimensional, and valid. Both quantitative and qualitative methodologies have been used to measure and comprehend PTG (Zoellner & Maercker, 2006). Biological methods as well as gathering data from other reporters have also been recommended, but are infrequently used (Infurna & Jayawickreme, 2019; Mehta et al., 2020).

Qualitative studies of PTG have incorporated the use of interviews, focus groups, the life-story technique, and expressive writing (Bower et al., 2003; Brooks et al., 2021; Joseph & Linley, 2006; Manove et al., 2019; Park & Lechner, 2006; Stutts et al., 2015; Zoellner &

Maercker, 2006). Park and Lechner (2006) showed that interviews utilize open-ended questions that focus on ways individuals' lives have changed due to their traumatic experience and positive life changes and beneficial experiences as a result of the trauma.

Quantitative measures are advantageous when a researcher wants to target a large population because you can obtain and easily categorize responses without having to conduct qualitative analyses (Park & Lechner, 2006). Mixed methods measures can also be helpful when a researcher wants to use numbers but simultaneously exhibit valuable qualitative material (Walsh, 2012). Quantitative PTG assessment measures include the PTGI (Tedeschi & Calhoun, 1996), the SRGS (Park et al., 1996), the Benefit Finding Scale (Tomich & Helgeson, 2004), the Perceived Benefit Scale (McMillen & Fisher, 1998), and the Changes in Outlook Questionnaire (Joseph et al., 1993). The SRGS was an early PTG measure with 50 items developed to examine the levels of positive outcomes after exposure to stress (Park et al., 1996). Tedeschi and Calhoun (1996) developed the commonly used PTGI, which details the specific domains in which positive changes occur. The PTGI is a 21-item self-report that assesses increased appreciation for life and changed sense of priorities; changed perception of the self; sense of new possibilities, roles or paths for one's life; spiritual change; and perceived improvements in interpersonal relationships (Tedeschi & Calhoun, 1996). According to Frazier et al. (2009), PTGI scores are related to positive reinterpretation coping as well as perceived (rather than actual) growth.

One study that compared the SRGS with the PTGI in a sample of 614 individuals who signed up via an online website where researchers provide compensation for participation, found that the PTGI was more positively related to PTSD symptoms. Conversely, the SRGS was more positively related to depression and anxiety symptoms than the PTGI (Boals & Schuler, 2018). Furthermore, the authors suggested that the SRGS is less inclined to show illusory growth than

the PTGI (Boals & Schuler, 2018). In other words, the PTGI was more vulnerable to illusory growth than the SGRS. This study found the PTGI to be a better measure than the SRGS for measuring PTG.

Still, retrospective measures of PTG (SGRS; PTGI) don't appear to measure actual pre- to post-trauma change (Frazier et al., 2009; Corman et al., 2021). As mentioned earlier, Corman et al. (2021) stated that retrospective and prospective measures of PTG reflect entirely different processes, and that retrospective measures like the PTGI are targeting self-perceived change instead of actual change. While it is important to capture an individual's perception, that perception is not always accurate (Corman et al., 2021).

Since quantitative measures do not fully capture the components of PTG, qualitative measures of PTG are beneficial (McMillen, 2004). Qualitative measures allow for expression and may yield a deeper or more nuanced understanding of research variables. Zoellner and Maercker (2006) reported that qualitative measures are also helpful for identifying positive and negative life changes. Although Park and Lechner (2006) noted that using qualitative studies can potentially contribute to biases in participants' responses due to phrasing variations, the same could be said to be true about quantitative measures and how their items are phrased.

Finally, utilizing psychological assessment can be therapeutic for a client (Finn & Martin, 2013). In addition to clarifying diagnoses and developing treatment plans, assessment can have a substantial impact on a client's life and the lives of their important family and friends (Finn & Martin, 2013). The authors also suggest that allowing clients the opportunity to participate in the assessment process is similar to brief therapy (Finn & Martin, 2013).

## **PTG in Law Enforcement**

Law enforcement officers can participate in a variety of different activities in their job. From training K-9 animals, hostage negotiation, and patrolling the streets to writing records, monitoring narcotics, and holding press conferences, the tasks of an officer differs depending on the day and the division.

Even though law enforcement officers perform different tasks, research has shown that they have their own subculture, in which they have been socialized into, strongly identify with (Andersen & Papazoglou, 2014), and which is resistant to change (Karp & Stenmark, 2011). In general, police culture (its codes, values, norms, etc.) emphasizes emotional control, strength, and competence, and is thought of as primarily masculine, militaristic, conservative and rigid (Karp & Stenmark, 2011; McCarty & Lawrence, 2016).

The strong professional norm seen in law enforcement officers is transmitted through the attitudes, knowledge and stories of veteran or more experienced officers in the field (McCarty & Lawrence, 2016). Although police solidarity can be viewed as one of the strengths of this profession, it may be harder for officers to relate to the public due to the skepticism and hypervigilance that is required in their jobs, including beliefs about the lack of civilian understanding about the arduous daily tasks of officers (Andersen & Papazoglou, 2014). Also, since police officers are typically trained by other officers, they have been found to respond better to officers than civilians (Karp & Stenmark, 2011), which has implications for clinicians working with law enforcement officers.

In what has been recognized as a very stressful profession in American society (Karmen, 2016), law enforcement officers are much more likely than the general population to be exposed to a high occurrence of potentially traumatic incidents (Ménard & Arter, 2013). Karmen (2016)

posited that police officers face unusual dangers due to the nature of their job tasks. Depending on their role, police officers' tasks may include using a gun, hand to hand combat, car chases, and arresting dangerous individuals. A distinction among these events involves the exposure of threat or harm to other individuals and the witnessing of threat or harm directly to oneself (Chopko et al., 2018). For many police officers, due to the nature of their work, they can experience the threat and danger even when it is happening to others.

As a result of experiencing high amounts of potentially traumatic experiences, police officers can experience high rates of PTSD. Ménard and Arter (2013) reported that PTSD rates among officers range from seven to 50% as compared to the 6.8% rate in the general population. Further associated problems for law enforcement professionals include high divorce rates and interpersonal issues, medical issues, and increased mental health issues compared to that in other professions (Karmen, 2016).

Police officers also experience stressful life events, such as illnesses, deaths of loved ones, and promotions, but scant information is available about the relationship between PTG and stressful life events as opposed to PTEs (Leppma et al., 2018). One study was located that examined PTG in police officers related to the stressful life event of living and working in New Orleans after Hurricane Katrina (Leppma et al., 2018). It found that gratitude, satisfaction with life, and social support were moderators of the relationship between stressful life events and PTG (Leppma et al., 2018). This research suggests that promoting social support, increased satisfaction with life, and gratitude can be favorable for police officers' cultivation of PTG after facing stressful life events (Leppma et al., 2018).

Some research has been done on how police officers cope with the stressors they encounter in their jobs. Police officers may use maladaptive ways of coping, such as alcohol use

(Grubb et al., 2015), or positive ways of coping such as seeking or accessing social support. Social support has been shown to be associated with decreased burnout and reduced stress in police officers (Fusilier et al., 1987; Louw, 2014; Patterson, 2003). although officers may recommend that their colleagues access social support, they often neglect to access such supports for themselves (Evans et al., 2013).

A common goal among clinicians working with police officers is to better assist officers coping with stressors and experiencing posttraumatic stress (Chopko et al., 2018). There are many ways that officers can interact with mental health professionals. Often, officers are introduced to opportunities to receive mental health services, such as employee assistance programs (EAPs). They are also offered the opportunity to debrief with mental health professionals after an incident (Chopko, 2010). Crisis-intervention team (commonly referred to as CIT) training programs also exist and have been found to be beneficial to officers (Chopko, 2010). Due to the extreme stigma associated with seeking help for mental health issues within departments, some officers prefer to engage in treatment with outside providers (Chopko, 2010).

One way for clinicians to help officers cope more effectively with stress is to gain enhanced knowledge regarding the psychological responses of police officers to PTEs in order to foster PTG (Chopko et al., 2018). For example, Chopko et al. (2018) found evidence that trauma exposure type (i.e., direct versus indirect) plays a significant role in the level of PTG. Frequency and severity also appear to play a role (Chopko et al., 2019). More research appears needed to inform how clinicians can assess and promote PTG in their treatment work with police officers because the literature on PTG in police officers appears limited.

## **Summary and Purpose**

Law enforcement officers have one of the toughest jobs - protecting the public. While not explicitly stated in their job description, it seems that many officers are routinely exposed to PTEs (Chopko et al., 2018), especially those assigned to homicides, gang units, violent crimes, etc. After stressors or PTEs happen, there are a variety of responses and trajectories that people can experience. One trajectory of trauma that has less research than its negative counterpart, post-traumatic stress, is PTG. Although there are multiple assessments that attempt to capture the level of growth an individual can experience after a PTE, and many avenues for police officers to receive mental health treatment, there does not appear to be a systematic review of all the available literature on PTG in law enforcement officers, or recommendations for mental health clinicians working with law enforcement officers informed by such a review. Furthermore, it would be helpful to consider what can be learned and observed from officers who have reported experiencing PTG.

Given the need for more research on ways to understand and promote PTG in law enforcement, the aim of this dissertation was to critically and comprehensively review the quantitative literature on PTG in law enforcement officers. Specifically, the research question of the study was: What variables are associated with law enforcement officers who have been reported to experience PTG?

## **Chapter 2: Methodology**

### **Systematic Review of the Literature**

The goal of the dissertation was to improve the understanding of PTG in law enforcement officers through a systematic review of the literature. The dissertation sought to provide a comprehensive review of quantitative studies on PTG in law enforcement officers after exposure to a PTE.

A systematic review of the literature is a research method that involves having a meticulous plan and comprehensive search strategy with the intent of identifying, appraising, and synthesizing all the relevant studies on an area of study (Uman, 2011). Despite the benefits of this methodology for informing practice, many published systematic reviews have been criticized for poorly reporting critical information (Liberati et al., 2009). To redress problems with past systematic reviews, the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) was developed (Liberati et al., 2009). PRISMA is a reporting guideline that improves the quality of systematic reviews by strengthening the transparency, accuracy, and comprehensiveness of the review (Moher et al., 2015). This dissertation utilized and included the PRISMA flow diagram. The sections that follow describes the specific research methods and steps that were used in this analysis of the literature.

### **Literature Search Process**

This dissertation's systematic literature review included documents published after 1996 in order to incorporate the development of research concerning PTG. More specifically, documents developed after 1996 reflected literature published after the coining of the term "PTG" and the creation of the PTGI (Tedeschi & Calhoun, 1996).



The review of the literature included international sources from the following broad set of databases that were identified as including materials on law enforcement and PTG. These included: WorldCat, PsycINFO, Criminal Justice Abstracts with Full Text, SCOPUS, HeinOnline, Nexis Uni (replacing Lexis-Nexis), National Criminal Justice Reference Service (NCJRS), EBSCO Host, Google Scholar, Academic Search Complete, Psychology: A Sage Full-Text Collection, PsycARTICLES, PsycTESTS, and Dissertation & Theses (ProQuest).

Documents utilized for this literature review included empirical scholarly work that were quantitative publications in peer-reviewed journals and books. Dissertations were also included to be as widespread as possible regarding research that informs a deeper understanding of PTG in law enforcement. Documents that were excluded from the study included qualitative documents, government sources, law enforcement agency publications, opinion-based, and theory-based pieces.

The general topic areas that were researched in this dissertation included PTG in law enforcement and trauma. All topic areas and search terms were in English. PTG was defined as action-focused growth in response to a traumatic event (Westphal & Bonanno, 2007; Tedeschi & Calhoun, 1996). Law enforcement was defined as a group of people who enforce rules and protect the public by apprehending those who violate the rules (Cullen et al., 2017). Exclusion criteria meant that the following were not considered law enforcement for the purpose of this dissertation: first responders and military personnel.

As a preliminary step, search terms were created to identify relevant material for Chapter 1 of this dissertation, which included: “post-traumatic growth,” “PTG,” “Bonanno,” “resilience,” “resili\*,” “Tedeschi,” “Calhoun,” “posttraumatic growth inventory,” “stress conversion,” “stress-related growth,” “flourishing,” “thriving,” “adversarial growth,” “police officers,” “law

enforcement,” “Post-traumatic Growth Inventory,” “PTGI,” “Stress Related Growth Scale,” “SRGS,” “Benefit Finding Scale,” “BFS,” “Perceived Benefit Scale,” “PBS,” “Self-reported Post-traumatic Growth,” “SRPTG,” “Changes in Outlook Questionnaire,” and “COQ.” Research for each subsection of the literature review chapter of this dissertation began with a broad search term, such as PTG and law enforcement.

Subsequently, to address the research question and perform the systematic literature review for the present study, search terms were more systematically entered utilizing a Boolean search string, including synonyms of terms, related constructs, and key researchers in the area of study (e.g. Bonnano; Tedeschi & Calhoun). Utilizing Boolean search strings was found to be a more efficient and accurate method of combining keywords to produce an organized and relevant list of results, than compared to the approach this researcher used in the literature review (Chapter 1).

More specifically, the Boolean search string used was ("post-traumatic growth" OR "post traumatic growth" OR "posttraumatic growth" OR "PTG" OR "Bonnano" OR "Tedeschi" OR "Calhoun") AND ("law enforce\*" OR "polic\*" OR "cop\*" OR "detective" OR "sheriff") AND (\*post-traumatic growth inventory\* OR \*PTGI\* OR \*Stress Related Growth Scale\* OR \*SRGS\* OR \*Benefit Finding Scale\* OR \*BFS\* OR \*Perceived Benefit Scale\* OR \*PBS\* \*Self-reported Post-traumatic Growth\* OR \*SRPTG\* OR \*Changes in Outlook Questionnaire\* OR \*COQ\*). For each of the 14 scholarly databases searched, the Boolean search string was utilized for peer reviewed quantitative articles, books, and dissertations. A total of 565 manuscripts were identified during this first stage of the search and screening process.

## Research Team

After interviewing qualified research assistant candidates, this researcher selected and trained two research assistants. Training began with an orientation to the research project, which involved an explanation about the dissertation process, inspiration for this specific study, and remaining objectives to complete. Then, they were trained on screening, quality appraisal, and coding. To practice, the team used PTSD research in the veteran population. Training was concluded when each member of the team expressed comfortability with the process and expectations. Furthermore, the research team felt comfortable moving forward when they were able to reach a general consensus with the practice research.

During the study, the research assistants worked with the researcher to screen the 565 manuscripts to eliminate duplicates and to determine whether the initial set met inclusion or exclusion criteria. Then, each team member independently rated each study with the Quality Appraisal Form, and after meetings to compare findings, subsequently engaged in process coding (specifics about these processes are provided in the next subsection).

Quality appraisal ratings obtained were compared to ensure that both the researcher and research assistant were on the same page. To pass quality appraisal, both researchers would have needed to agree that the study met criteria of an overall mean of two or above. When raters came up with different numbers, the final number was decided by averaging the numbers. Intercoder agreement “the extent to which independent coders evaluate a characteristic of a message or artefact and reach the same conclusions” (Lombard et al. 2002, p. 589) was assessed via percentage agreement. Although this method has its limitations, most systematic reviews of the literature do not report the use of interrater reliability, and when they do, percentage agreement is typically used (Belur et al., 2021).

## Screening and Quality Appraisal

The 565 studies generated from the search terms were taken and put into a spreadsheet for organization and screening purposes. This spreadsheet contained the different levels of information and classification that were included in each study. Once the final number of studies to be included was generated, it was included in a Table of Included Studies (see Appendix A). A PRISMA Flow Diagram (see Appendix B) illustrated the stream of sources as they proceeded through the initial phase of the review process to the end. It started with the total number of sources identified through the database searches ( $N = 565$ ).

The screening process began when this researcher and his research assistants screened the sources by combing through and removing duplicates. Next, the remaining manuscripts ( $n = 299$ ) were thoroughly reviewed by the researcher and his research assistants. For each, the research team began by reviewing the title to determine if the target research variables were included. Then, the abstracts were examined by the research team and assessed to establish if the source met inclusion and exclusion criteria. The third step involved the research team deciding to read the full work if eligibility criteria could not be determined based on the previous two steps. After this, the researcher and research assistants documented the number of sources that successfully went through the screening process ( $n = 9$ ) and the number that were excluded from the study in that process ( $n = 290$ ).

Next, the PRISMA Flow Diagram showed the number of sources where the full text was assessed for quality appraisal and subsequent eligibility ( $n = 9$ ) and the number of articles that were excluded in that process ( $n = 0$ ); none were excluded. More details about the quality appraisal process are described next. Lastly, in the lower two boxes of the PRISMA Flow Diagram, the total number of studies that were included in the review were displayed ( $n = 9$ ).

Individual study quality appraisal, a critical process in which significant bias and risk were evaluated, is described in detail here because it was a key part of the screening process. Quality was assessed using a Quality Appraisal Form (see Appendix C). The quality appraisal form was adapted by the researcher and his dissertation chairperson from a variety of published appraisal forms, and modified by this researcher to include language that encompassed qualitative and quantitative methodologies.

The quality appraisal process began when the primary researcher and research assistants examined each selected manuscript by identifying the general methodology of study and its specific design or inquiry approach. Then, each category of the study listed in the Quality Appraisal was rated on a Likert-4-point scale of 0 = missing to 3 = strong. The categories that were assessed for quality were: strength of literature foundation and rationale for study, clarity and specificity of research aims/objectives/questions, quality of research design or methodological approach, sample selection and characteristics, measures and data collection tools, data collection, analysis of data, discussion of study limitations, consideration of culture and diversity, and appropriateness of the recruitment strategy.

The research team deemed studies eligible or ineligible based on a basic rating system. The researchers added the ratings/scores of the 10 criteria and then computed an average of the different ratings for each category. Ideal studies for eligibility had an average rating between 2 and 3. Studies that were to be excluded would have obvious categorical weaknesses and be excluded if their overall mean was less than 2 (cut off). No studies or book chapters that made it to the quality appraisal step had an average overall rating less than 2; thus, none were excluded. If the two raters disagreed (50% agreement, the average of both of their ratings was used to compute the means for specific categories. The ratings for the nine sources all had an overall

average of 3, before and after the rating interrater discussion. Table 1 depicts the ratings and the agreement percentages across raters for every category and the overall mean. When 100% agreement did not occur, asterisks in Table 1 indicate the different coder ratings that occurred before the interrater discussion. The overall percentage agreement reliability across all ratings was 76.7%, which is considered in the acceptable range (Glen, 2016).

**Table 1**

*Quality Appraisal Percentage Agreement with Ratings*

	#1	#2	#3	#4	#5	#6	#7	#8	#9
Strength of Literature Foundation and Rationale for Study	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>2.5*</b> 50%	<b>3</b> 100%	<b>3</b> 100%	<b>2.5*</b> 50%	<b>2.5*</b> 50%
Clarity and specificity of Research Aims/Objectives/Questions	<b>3</b> 100%	<b>3</b> 100%	<b>2.5*</b> 50%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>2.5*</b> 50%
Quality of Research Design or Methodological Approach	<b>3</b> 100%	<b>2.5*</b> 50%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>2.5*</b> 50%
Appropriateness of the Recruitment Strategy	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>2.5*</b> 50%
Sample Selection and Characteristics	<b>3</b> 100%	<b>2.5*</b> 50%	<b>2.5</b> *50%	<b>2</b> 100%	<b>2.5*</b> 50%	<b>3</b> 100%	<b>3</b> 100%	<b>2.5*</b> 50%	<b>2***</b> 50%
Measures/Data Collection Tools	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%
Data Collection	<b>3</b> 100%	<b>2.5*</b> 50%	<b>2.5*</b> 50%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>2.5*</b> 50%
Analysis of Data	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>2.5*</b> 50%
Discussion of Study Limitations	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>1.5**</b> 50%	<b>3</b> 100%	<b>2.5*</b> 50%	<b>2.5*</b> 50%
Consideration of Culture and Diversity	<b>2</b> 100%	<b>2</b> 100%	<b>2</b> 100%	<b>1.5**</b> 50%	<b>1.5**</b> 50%	<b>1</b> 100%	<b>2</b> 100%	<b>2.5*</b> 50%	<b>2</b> 100%
Overall Mean	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%	<b>3</b> 100%

\* original ratings of 2 and 3

\*\* original ratings of 1 and 2

\*\*\* original ratings of 1 and 3

Studies deemed eligible using the quality appraisal form were placed into a Table of Included Studies (Appendix A) and underwent data analysis.

## Analysis

Data was extracted/collected from the nine sources deemed eligible using the quality appraisal form. Table 2 presents these nine sources.

For the critical analysis, data was coded from the eligible articles' discussion sections that pertained to PTG in law enforcement. The researcher and his advisor collaboratively decided on this focus based on the researcher's experiences during independent practice coding. During the preparation and pre-coding process, this researcher determined that many research texts contained broad and duplicative information in the introduction and discussion sections. It was determined that the discussion section more accurately addressed the research question and informed future directions as compared to other sections of the articles. In sum, this specificity was determined to focus the content analysis on the most fruitful and relevant data to address the dissertation's research objectives.

The collected data was analyzed using content analysis. Content analysis is a common, empirically grounded methodology (Giannantonio, 2010). One of the most important research techniques in the social sciences, content analysis is a research technique for making replicable and sound interpretations from data to their context (Krippendorff, 1989). It uses symbolic qualities to trace antecedents, correlates, and consequences when data is not immediately observable (Krippendorff, 1989). The process of content analysis is especially suited for written texts, such as the documents this researcher used (Krippendorff, 1989).

Conventional content analysis was the type of content analysis that was used in this study. Conventional content analysis is an inductive process where codes are defined during the data analysis process and codes are developed directly from the data (Hsieh & Shannon, 2005). Inductive content analysis includes open coding, creating categories/themes, and abstraction (Elo

et al., 2014; Elo & Kyngäs, 2008). Coding is a process where essential elements of the research are grouped together to produce categories (Saldaña, 2013). An important distinction to note is that coding is not simply categorizing, but rather linking and connecting (Saldaña, 2013).

Inductive coding has been shown to be effective for allowing research findings to emerge from themes in data (Thomas, 2006). “Unlike most approaches to content analysis, which often begin with predefined categories, thematic analysis allows categories to emerge from the data” (Saldaña, 2009, p. 177). Themes are often altered or missed in the analysis procedure of deductive coding (Thomas, 2006).

First Cycle coding methods (a type of open coding) were used for the bulk of the inductive content analysis, which was the initial coding of the data extracted (Saldaña, 2009). The specific types of First Cycle coding methods used in this researcher’s project were process and pattern coding. Process coding is identifying words or phrases that encapsulate action (Ford, 2014; Saldaña, 2013). Pattern coding is where the researcher codes for observed patterns from the data (Ford, 2014). Pattern coding examines similarities, differences, frequencies, sequences, correspondence, and causation (Hatch, 2002).

These First Cycle coding processes allowed the researcher to identify themes from the data. “A theme is an abstract entity that brings meaning and identity to a recurrent [patterned] experience and its variant manifestations. As such, a theme captures and unifies the nature or basis of the experience into a meaningful whole” (Saldaña, 2013, pp. 175–176). This process can be particularly helpful in developing higher level theoretical constructs when analogous themes are grouped together (Saldaña, 2013). Lastly, drawing themes out of the data works well for documents that involve participants (Saldaña, 2013), like law enforcement officers. After the themes were generated from the patterns and processes, they were reported through basic



categorization (Saldaña, 2013). The researcher considered the similarities, differences, and relationships between themes. The researcher then generated overarching terms and concepts that provides a hierarchal structure for the themes.

Having multiple coders (no more than five) is recommended to reduce bias and incorporate a wider range of analysis (Bernard, 2011; Saldaña, 2013). This dissertation had three coders: this researcher and two trained master's level research assistants. Training included reviewing the coding process, discussing the research objectives, and setting up meetings to discuss questions. Also, the research team took a sample article on PTSD and coded it for practice. After it was determined that the team was prepared, the team commenced process coding on the eight articles and one book chapter that were included in the study. After process coding, the researcher completed the pattern coding and abstraction.

During process coding, this researcher and research assistants began by independently highlighting specific sections of the discussion section of an article or book chapter that they then coded, in order to clearly depict what sections were relevant. They entered their individual codes in a three-columned document. The first column included the highlighted discussion section that was being coded. The second column included the specific process codes. In that document, the coders also had the ability to enter notes, such as process commentary, in which they would share personal thoughts, biases and thoughts about connecting the data to the dissertation research question or current clinical practice. This was done in the third column.

Qualitative coding processes can involve discussion between researchers, consensus, and coder adjudication (Harry et al., 2005; Sandelowski & Barroso, 2007). Saldaña (2013) also recommends having regular team meetings to collectively code and ensure researchers agree with each other. Accordingly, after independently engaging in process coding, the researcher and

research assistants then met three times to discuss codes and reach consensus. The research team frequently agreed on the process codes. The primary researcher kept track of the rate of agreement within the research team for process coding and is depicted in Table 2. Of note, the main time there were discrepancies in the coding it was when the research assistants coded material that was not relevant to PTG in police officers. Consensus was quickly achieved by having a discussion and noting the rationale for including or removing a code. The process codes were kept in a Word document for future reference and use in the Results section of this document.

**Table 2**

*Process Coding Percentage Agreement*

Source	#1	#2	#3	#4	#5	#6	#7	#8	#9
Agreed upon codes / total codes	<b>10/10</b> 100%	<b>4/6</b> 67%	<b>3/6</b> 50%	<b>10/11</b> 91%	<b>4/6</b> 67%	<b>5/5</b> 100%	<b>1/1</b> 100%	<b>3/4</b> 75%	<b>3/3</b> 100%

The overall percentage agreement reliability across all process codes was 82.7%, which is considered in the acceptable range (Glen, 2016).

Following the process coding, the researcher independently engaged in pattern coding within and across the process codes that emerged from the selected sources. Pattern coding involves observing similarities, differences, frequencies, sequences, correspondence, and causation in the data. (Hatch, 2002). The primary researcher utilized pattern coding to note main themes in the data. The process codes were carefully analyzed using similarities and frequency to observe and distill important findings from in the literature. Finally, higher-order codes were abstracted from the broader themes that resulted from pattern coding. Abstraction is a process in

which various elements are transferred to a higher logical level, which shows a pattern or classification (Lindgren et al., 2020).

The researcher's dissertation chairperson did a member check of the pattern and process codes or themes, abstraction, and their reporting, as these are ways to address trustworthiness of the inductive analysis (Elo et al., 2014). The results of the pattern coding and extracted themes are presented in the next section. Results will also be used to answer the study's research question: What variables, if any, were associated with officers that have reported experiencing PTG? Of note, this researcher received IRB approval to conduct this study (Appendix D).

### **Chapter 3: Results**

Given the need for more research on ways to understand and promote PTG in law enforcement, the aim of this dissertation was to critically and comprehensively review the quantitative literature on PTG in law enforcement officers. Out of the 565 sources identified through the search, 266 were duplicates and 290 did not meet inclusion criteria. To analyze the current literature and specifically the nine included sources that met criteria for successful quality appraisal, the research team utilized inductive content analysis via process and pattern coding and abstraction. This results chapter details what the research team found through the process, which was used to address its research question: What variables are associated with law enforcement officers who have been reported to experience PTG?

Table 2, which depicts the sources that met criteria for quality appraisal, includes eight quantitative studies and one book chapter. All nine sources focused on PTG in police officers. The table shows the authors, titles, type of source, and notates whether the source addressed the research question.

#### **Process and Pattern Coding Results Within Sources**

Two forms of inductive content analysis were used in the present study. Process coding is identifying words or phrases that encapsulate action (Ford, 2014; Saldaña, 2013). Pattern coding is where the researcher codes for observed patterns from the data (Ford, 2014), including similarities, differences, frequencies, sequences, correlations, and causation (Hatch, 2002). In this study, the researcher focused on similarities, differences, and frequencies during pattern coding and also paid attention to data relating to correlation and causation conclusions made by the source authors and this researcher to address the research question.

Source 1 was a quantitative study that examined the development of PTG for 113 officers working in New Orleans after Hurricane Katrina (Leppma et al., 2018). In the first article, our research team came to a consensus on ten out of a total ten process codes (written in order as appeared): (a) experiencing satisfaction, gratitude, and interpersonal support; (b) experiencing increased PTG; (c) handling stressors differently; (d) utilizing new and more effective stress appraisal and coping strategies; (e) habituating to stressful events; (f) finding meaning; (g) reflecting on stressful experiences; (h) having social support; (i) addressing stigma; and (j) experiencing support, gratitude, and life satisfaction. Of note, all of these codes had a frequency of one except experiencing satisfaction, gratitude, and interpersonal support.

For pattern coding, the similarities across process codes included experiencing social support and handling stressors through coping mechanisms, which can be used to address the research question. The differences included the particular methods of coping.

Source 2 was a quantitative study examined the relationship between PTG and trauma severity, trauma frequency, and health variables in a sample of 193 officers from small to midsize departments (Chopko et al., 2019). In Article 2, our research team came to a consensus on four out of a total six process codes. The following final codes were induced in the article (written in order as appeared): (a) relating to an idiosyncratic view; (b) experiencing more positive worldview changes; (c) employing more positive schematic restructuring; and (d) identifying trauma severity. Of note, all of these codes had a frequency of one.

For pattern coding, there was one main similarity across three of the process codes: a positive or changed cognitive process. The differences included the specific methods of cognitive change, namely schematic restructuring or having an idiosyncratic or changed

worldview. Thus, regarding the research question, findings from this article suggested a correlation between positive cognitive processing and PTG.

Article 3 was a quantitative study involving 114 officers that examined the association between resilience, satisfaction with life, gratitude, PTG, and symptoms of PTSD (McCanlies et al., 2014). In Article 3, our research team came to a consensus on three out of a total six process codes. The following final codes were induced in the article (written in order as appeared): (a) female officers experiencing PTG at increased rates; (b) processing the trauma; and (c) finding meaning. Of note, all of these codes had a frequency of one.

For pattern coding, the differences included different stages of the processing process, with processing coming before the finding meaning. Regarding the research question, this article concluded that there was a correlation between gender and PTG, such that female officers' processing of trauma led to increased PTG when compared to male officers' processing.

Source 4 was a quantitative study involving 193 officers that found the pathway from type of trauma exposure to PTG was mediated by PTSD (Chopko et al., 2018). In Article 4, our research team came to a consensus on 10 out of a total 11 process codes. The following final codes were induced in the article (written in order as appeared): (a) experiencing events involving threat to self; (b) experiencing PTSD symptoms; (c) experiencing satisfaction (life satisfaction); (d) helping others; (e) acting as a caregiver; (f) active problem solving; (g) maintaining action-oriented means of coping; (h) taking control and problem solving; (i) experiencing specific types of occupational trauma; and (j) experiencing personal relationship stress. Of note, all of these codes had a frequency of one, with the exception of problem solving, which had a frequency of two.

For pattern coding, the similarities across process codes included the experience of stress or traumatic experiences and PTSD symptoms, and active coping and problem solving. The differences included the specific types of events (threat to self, occupational trauma, relationship stress) and specific forms of active coping (relationship-focused, problem solving). Thus, regarding the research question, this researcher noticed a correlation between action-oriented coping and active problem solving with the experience of PTG.

Source 5 was a quantitative study involving 183 officers that investigated the relationship between mindfulness and PTG (Chopko & Schwartz, 2009). In Article 5, our research team came to a consensus on four out of a total six process codes. The following final codes were induced in the article (written in order as appeared): (a) perceiving amount of effort put forth toward spiritual growth; (b) cognitive processing; (c) observing a variety of mindfulness stimuli; and (d) focusing on spiritual issues. Of note, all of these codes had a frequency of one. For pattern coding, the similarities across process codes included spiritual attention or growth and cognitive processing. Differences included the various types of cognitive processes and their targets of attention. In sum, pertaining to research question one, Source 5 codes suggest that cognitive processing plays an integral role in experiencing PTG, addressing the research question.

Source 6 was a quantitative study involving 372 officers that examined the relationship between critical incident experiences and growth outcomes (Paton & Burke, 2007). In the sixth article, our research team came to a consensus on five out of a total five process codes, each of which appeared one time. The following final codes were included in the article (written in order as appeared): (a) understanding traumatic experiences; (b) increasing social support; (c) appreciating performance; (d) learning; and (e) supporting positive emotional expression.

For pattern coding, the similarities across process codes included understanding traumatic experiences, learning and processing traumatic experiences, and experiencing support through social connections that allow for positive emotional expression. The differences included specific methods of understanding and present-focused reflection. Related to the research question, this article suggested that increasing social support, understanding their traumatic experience, experiencing positive emotional expression, and learning led officers to experience PTG.

Source 7 was a book chapter that examined ways to promote PTG in law enforcement officers (Joseph et al., 2015). Of note, the discussion section in this chapter was notably shorter than the other sources. In the seventh study our research team came to a consensus on one out of one total process code: adapting to mental health symptoms such as depression or PTSD. This code had a frequency of one. Given that only one code emerged from this chapter's discussion section, pattern coding resulted in the same process code of adapting to mental health symptoms such as depression or PTSD. Adapting to symptoms appears related to the research question of factors related to PTG.

The eighth source was a quantitative study involving 109 officers that examined relationships between occupational trauma exposure, work environment stress, personality traits, posttraumatic stress, and PTG (Wills, 2018). In the eighth article, our research team came to a consensus on three out of a total four process codes. The following final codes were induced in the article (written in order as appeared): (a) using force; (b) cognitive evaluation and self-perception; and (c) pre-incident preparation training. Of note, all of these codes had a frequency of one.

For pattern coding, the similarities across process codes included intentional decision-making and reflection, and the fact that between use of force is related to training. The



differences included timing of the codes. Specifically, pre-incident preparation training happens prior to the potentially traumatic event. Cognitive evaluation and self-perception can happen before, during or after the potentially traumatic event. The same can be said for using force which happens during the potentially traumatic event. Relevant to the research question, the article suggested that cognitive evaluation and pre-incident preparation training are important for PTG to occur.

Source 9 was a quantitative study that examined the relationship between PTG and coping style in 17 law enforcement officers (Guerrero, 2018). In the ninth and final source, our research team came to a consensus on three out of a total three process codes. The following final codes were included in the article (written in order as appeared): (a) problem focused coping; (b) emotion focused coping; and (c) experiencing a variety of PTG types. Of note, all of these codes had a frequency of one.

For pattern coding, the similarities across process codes included coping. The differences included type of coding (problem focused versus emotion focused). The article highlighted the importance of engaging in different forms of coping after exposure to a traumatic event, relevant to the research question.

Table 3 represents the within-source process codes and their frequencies as well as the within-source pattern codes across all nine studies. The within-study pattern codes with the highest frequencies both within studies, and across studies (where they had the exact wording) were, experiencing satisfaction (coded three times in two sources), gratitude, and interpersonal support (coded twice in one study); finding meaning (coded once in two sources); and social support (coded four times in two sources). To examine across-source patterns more fully, the next section describes pattern coding across the nine sources.

**Table 3**

*Within-Source Process Codes with Frequency and Source, and Within-Source Pattern Codes*

Within-Source Process Codes	Frequency	Source	Within-Source Pattern Codes
Experiencing satisfaction, gratitude, and interpersonal support	3	1 (2 times), 4 (satisfaction only)	Satisfaction
Social support	2	1 (“having social support”); 6 (“increasing social support”)	Social Support
Finding meaning	2	1, 3	Finding meaning
Experiencing increased PTG	1	1	
Handling stressors differently	1	1	Handle Stressors via coping
Utilizing different and more effective stress appraisal and coping strategies	1	1	
Habituating to stressful events	1	1	
Reflecting on stressful experiences	1	1	
Addressing stigma	1	1	
Relating to an idiosyncratic view	1	2	Positive/ Changed Cognitive process
Experiencing more positive worldview changes	1	2	
Employing more positive schematic restructuring	1	2	
Identifying trauma severity	1	2	
Female officers experiencing PTG at higher rates	1	3	

Within-Source Process Codes	Frequency	Source	Within-Source Pattern Codes
Processing the trauma	1	3	
Experiencing events involving threat to self	1	4	Stress / PTE experiences & symptoms
Experiencing PTSD symptoms	1	4	
Helping others	1	4	
Acting as a caregiver	1	4	Active coping & Problem solving
Active problem solving	1	4	
Maintaining action-oriented means of coping	1	4	
Taking control and problem solving	1	4	
Experiencing specific types of occupational trauma	1	4	
Experiencing personal relationship stress	1	4	
Perceiving amount of effort put forth toward spiritual growth	1	5	Spiritual attention /growth
Cognitive processing	1	5	Cognitive processing
Observing a variety of stimuli	1	5	
Focusing on spiritual issues	1	5	
Understanding traumatic experiences	1	6	Learning and Understanding trauma experiences
Appreciating performance	1	6	
Learning	1	6	

Within-Source Process Codes	Frequency	Source	Within-Source Pattern Codes
Supporting positive emotional expression	1	6	Social supports
Adapting to mental health symptoms such as depression or PTSD	1	7	Adapting to symptoms
Within-Source Process Codes	Frequency	Source	Within-Source Pattern Codes
Using force	1	8	
Cognitive evaluation and self-perception	1	8	Cognitive evaluation and self-perception
Pre-incident preparation training	1	8	Training
Problem focused coping	1	9	Coping
Emotion focused coping	1	9	
Experiencing a variety of PTG types (behavioral versus cognitive	1	9	

### Pattern Coding and Abstraction Results Across Sources

Pattern Coding was a helpful process for drawing out larger themes not only within-sources, but also across them. This enabled the researcher to make connections between and among the differently worded codes that emerged within each source. To accomplish this pattern coding across sources, the researcher used frequency and similarity that occurred in more than one source.

After examining the frequency of within-source pattern codes, the three most commonly encountered themes were experiencing, having, or increasing social support ( $n = 3$ ; sources 1 and

6), finding meaning ( $n = 2$ ; sources 1 and 3), and experiencing satisfaction ( $n = 3$ ; sources 1 and 4).

Based on similarity and frequency, four additional across-source themes emerged across multiple within-study pattern and process codes. The most frequently identified theme ( $n = 4$ ) was cognitive processing and evaluation, which appears to be an integral component for the PTG process to occur. It is comprised of subthemes (process codes in parentheses): positive evaluations (satisfaction, spiritual attention, cognitive evaluation and self-perception, appreciating performance), learning (learning, pre-incident training), as well as cognitive processes (cognitive processing, understanding trauma experiences).

The second most frequently identified theme was coping ( $n = 3$ ), including synonyms (adapting to symptoms) as well as types of coping (emotion focused, action-oriented or active coping, and problem-focused coping or problem solving).

Third, aspects of stress and trauma symptoms was a theme that included codes: handling stressors differently, habituating to stressful events, reflecting on stressful experiences, identifying trauma severity, experiencing PTSD symptoms, experiencing specific types of occupational trauma, experiencing personal relationship stress, and adapting to mental health symptoms such as depression or PTSD).

Lastly, the fourth theme involved a system or worldview change. This theme consisted of addressing stigma, finding meaning, positive worldview changes, finding meaning, helping others, and spiritual growth. Table 4 represents the seven total pattern codes or themes found across all nine sources.

**Table 4***Across-Source Pattern Themes and Codes with Frequency and Sources*

Across-Source Pattern Theme	Frequency	Sources
Experiencing, having or increasing social support	3	Within-source pattern codes from Sources 1 & 6
Finding meaning	2	Within-source pattern codes from Sources 1 & 3
Experiencing satisfaction	3 4	Within-source pattern codes from Sources 1 & 4  Within-source process codes from Sources 1 & 4 (Experiencing satisfaction), 5 (Perceiving amount of effort put forth toward spiritual growth), and 6 (Appreciating performance)
Coping	3 6	Within-source pattern codes from Sources 1, 4, 9  Within-source process codes re: synonyms (adapting to symptoms – Source 7), types of coping (emotion focused – Source 9, action-oriented / active coping – Sources 4 & 9, and or problem- focused coping / problem solving – Sources 4 & 9).
Cognitive processing and evaluation	4 9	Within-source pattern codes from Sources 2, 5, 7, 8  Within-source process codes from Sources 1, 4, 5, 6, 8

Across-Source Pattern Theme	Frequency	Sources
		positive evaluations (satisfaction, spiritual attention, cognitive evaluation and self perception, appreciating performance), learning (learning, pre-incident training), as well as cognitive processes (cognitive processing, understanding trauma experiences).
Stress/ Trauma Symptoms	2  4	Within-source pattern codes from Sources 1, 4  Within-source process codes from Sources 2 (identifying trauma severity), 4 (experiencing PTSD symptoms, experiencing specific types of occupational trauma, experiencing personal relationship stress),
System/Worldview change	3  6	Within-source pattern codes from Sources 1 and 3 (finding meaning) and 5 (spiritual attention/growth)  Within-source process codes from Sources 1 (addressing stigma; finding meaning), 2 (positive worldview changes), 3 (finding meaning), 4 (helping others), 5 (spiritual growth).

Since inductive content analysis can include open coding, creating categories/themes, as well as abstraction (Elo et al., 2014; Elo & Kyngäs, 2008), the researcher completed the content analysis by engaging in abstraction. This entailed looking at the seven across-source themes and

abstracting higher order themes. As seen in Table 5, three themes were abstracted: adaptive coping skills (encompassing themes of coping, experiencing satisfaction, cognitive processing, and experiencing, having, or increasing social support); new beliefs (encompassing themes of finding meaning and system/worldview change); and working through (encompassing the theme of stress or trauma symptoms).

**Table 5**

*Abstracted Codes and Themes*

Abstracted Code/Theme	Adaptive Coping	New Beliefs	Working through
Theme(s) that connects to abstracted code	<ol style="list-style-type: none"> <li>1. Coping</li> <li>2. Experiencing satisfaction</li> <li>3. Finding meaning</li> <li>4. Cognitive processing</li> <li>5. Experiencing, having, or increasing social support</li> <li>6. System/worldview changes</li> </ol>	<ol style="list-style-type: none"> <li>1. Finding meaning</li> <li>2. Experiencing satisfaction</li> <li>3. System/worldview change</li> <li>4. Cognitive Processing</li> </ol>	<ol style="list-style-type: none"> <li>1. Stress/trauma symptoms</li> <li>2. Coping</li> <li>3. Cognitive processing and evaluation</li> <li>4. Finding meaning</li> </ol>

**Research Question**

As indicated in Table 2 and discussed previously, every article addressed the research question, which centered on variables that are associated with law enforcement officers who have been reported to experience PTG. Through the depiction of broader themes, Table 4 represents a synthesis of PTG-relevant variables, specifically cognitive processing and evaluation; coping; experiencing, having, or increasing social support; finding meaning; experiencing satisfaction; stress or trauma symptoms; and system or worldview changes. In



addition, the abstracted themes of adaptive coping skills, new beliefs, and working through as shown in Table 5 address the research question.

## Chapter 4: Discussion

### Overview

Law enforcement officers experience high levels of occupational stress (Karmen, 2016) and an increased likelihood, when compared to the general population, of being exposed to a high occurrence of potentially traumatic incidents (Ménard & Arter, 2013). Law enforcement officers can experience threats and dangers themselves, or witness when it is happening to others; both of which can serve as diagnostic criteria for PTSD (American Psychiatric Association, 2013). Officers are currently experiencing high levels of stress in the field and increased scrutiny in their departments which can lead to lower morale (Westervelt, 2021).

In contrast to the abundance of literature on the negative outcomes of PTEs and PTSDs generally and in police officers specifically, researchers have more recently been analyzing other PTE trajectories, namely resilience and PTG (Westphal & Bonanno, 2007) in law enforcement officers. Thus, the research question posed in this study asked what variables are associated with officers who have reported PTG. To answer this research question, the research team engaged in a systematic review of the literature that utilized inductive content analysis via process and pattern coding.

In examining nine sources that met criteria for quality appraisal as documented using PRISMA, the research team found consistencies and patterns within and across the manuscripts. Our results yielded three higher-order themes, which emerged from the systematic review of literature pertaining to variables associated with officers who have reported PTG (Research Question): adaptive coping, new beliefs, and working through. These themes came from the inductive content analysis, which produced seven PTG-relevant variables with law enforcement officers: (a) cognitive processing and evaluation; (b) coping; (c) experiencing, having, or

increasing social support; (d) finding meaning; (e) experiencing satisfaction; (f) stress or trauma symptoms; and (g) system or worldview changes. This section begins with a discussion of how the findings relate to the existing models of PTG. It then turns to a discussion of these seven variables, which led to the three higher-order themes, in the context of the current literature. Limitations of the study are then discussed, followed by a presentation of the contributions of this study and the implications for future research and practice.

### **PTG Models and Law Enforcement**

Each of the seven PTG-relevant variables with law enforcement officers can be seen to connect to Tedeschi and Calhoun's (2004) general model of PTG or one or more of its five domains (Shakespeare-Finch et al., 2013). Stress or trauma symptoms do not seem to connect to a specific PTG domain but are a common negative change seen in the aftermath of a traumatic event (Cann et al., 2010a) and enduring stress is a key proximal factor in their model. Experiencing, having, or increasing social support clearly is related to the second domain that involves relating to others and connectedness (Tedeschi & Calhoun, 2004; Taku et al., 2020). Cognitive processing and evaluation connect to the domains of personal strength and new possibilities (Wilson et al., 2014; Tedeschi & Calhoun, 2004; Taku et al., 2020). Coping can be seen in the personal strength and spiritual growth domains.

Finding meaning seems to connect to the greater appreciation of life and new possibilities in the fourth domain, while also connecting to the existential component of the fifth domain (Tedeschi & Calhoun, 2004; Taku et al., 2020). Meaning making following adversity has been connected to a greater sense of well-being (Danahauer et al., 2013b), and an increase in coping mechanisms (Park & Ai, 2006). Experiencing life satisfaction also links with the fourth domain of appreciating life. Having life satisfaction has been positively related to the experience

of PTG (Mosher et al., 2006; Powell et al., 2012). Lastly, system or worldview changes tie to the third, fourth, and fifth domain (new possibilities, a greater appreciation for life, and a deeper understanding of life).

The abstracted higher order codes also have clear connections to the five domains. Adaptive coping itself is like the first domain of self-reliance (Taku et al., 2020). Working through also connects to the first domain of personal strength (Taku et al., 2020), and the definition of PTG itself. The abstracted code of new beliefs resemble the third and fourth domains of finding a new path in life and a greater appreciation for life (Taku et al., 2020).

In Schaefer and Moos' model (1998), cognitive processes ("panel 4") are preceded by environmental resources ("panel 2"; e.g., social support, financial, home and community) and personal system factors ("panel 1"; e.g., sociodemographics, self-efficacy, resilience, prior crisis experience). While these personal and social resources foreshadow improved psychological functioning ("panel 5") after a person experiences a life crisis ("panel 3"), the person's coping and cognitive processes ("panel 4") also factor prominently into whether they develop positive outcomes and growth ("panel 5") (Schaefer & Moos, 1998). Several of the themes found in the present study closely map onto this model's "panel 4" component, especially adaptive coping, working through, coping, and cognitive processing and evaluation. Also, codes such as social support fall under environment resources ("panel 2") and the stress or trauma symptoms theme relates to life crisis ("panel 3").

### **Individual Pattern Codes**

A large portion of literature on PTG, generally, relates to themes this study found in law enforcement officers, namely cognitive processing, social support, and coping. For this reason, these three pattern codes are discussed first, followed by the others .

In their earlier writings, Tedeschi and Calhoun (2004) stated that cognitive processing is required for PTG to occur. Years later, those same researchers concluded that the PTG process involves challenging one's core beliefs, deliberate (not intrusive) rumination and cognitive-emotional processing (Tedeschi et al., 2018; Triplett et al., 2012). Cognitive models of trauma present the idea that through constructive cognitive adaptation, the subjective severity of trauma can decrease and positive effects such as increased meaning and life satisfaction can occur (Caspari et al., 2017; Tedeschi & Calhoun, 2004; Schaefer & Moos, 1998; Triplett et al., 2012). Individuals who cope effectively with traumatic events actively examine their experience using cognitive processing strategies (Manne et al., 2004). Such strategies include positive reappraisal, deliberate rumination and processing emotions.

This dissertation found that cognitive processing is also important for PTG in the law enforcement population (McCanlies et al., 2014; Chopko et al., 2019). Cognitive processing was a frequent theme that emerged in the process and pattern coding in seven out of nine sources. It was also a key part of each of the higher order codes: adaptive coping, new beliefs, and working through. The idea that positively changing their worldview (another of the codes that emerged in the present study) through cognitive processing is vital for officers too (Chopko et al., 2019).

Like cognitive processing, social support was commonly found throughout research about PTG. Researchers have posited that environmental factors such as social support is important for influencing PTG (Schaefer & Moos, 1998; Tedeschi & Calhoun, 2004). Social support has been shown as a mediating factor in the development of PTG (Yu et al., 2014). Social support connects to the second of Tedeschi and Calhoun's five domains of PTG that involves increased feelings of connectedness (Taku et al., 2020). Lastly, Tedeschi et al. (2018)

and Taku et al. (2020) discussed the importance of receiving positive responses to disclosure following a traumatic event, which relates to support.

In the present study, social support was found to be one of the main variables that addressed the research question as it was present three times in two out of the nine sources on PTG and law enforcement officers. In this literature, Leppma et al., (2018) found that social support was a moderator of the relationship between stressful life events and PTG in law enforcement officers. Similarly, Paton and Burke (2007) stated that social support resources are important for officers to derive benefit from their traumatic experience. Social support has also been shown to be associated with job satisfaction and reduced stress in police officers (Fusilier et al., 1987; Louw, 2014; Patterson, 2003). Thus, clinician who are promoting social support can be highly beneficial for police officers' cultivation of PTG after facing stressful life events (Leppma et al., 2018).

According to Tedeschi and Calhoun (2004), coping is an influential factor in the development of PTG. More specifically, coping can increase the likelihood of PTG following adversity (Tedeschi & McNally, 2011; Yu et al., 2014). Similarly, in Schaefer and Moos' model, coping and cognitive appraisals occur before positive outcomes. As active methods to deal with stressful events, coping strategies promote PTG (Prati & Pietrantonio, 2009). Certain types of coping have been identified in the general PTG literature. For instance, active cognitive and problem-focused coping have been associated with PTG (Schaefer & Moos, 1998; Weiss & Berger, 2010). In 2010 Haiti Earthquake survivors, the strongest predictors of PTG were active coping and positive religious coping (Mesidor & Sly, 2019). About religious coping, Linley and Joseph (2004) discovered that religious activities and intrinsic religiousness were positively associated with PTG. Also, Prati and Peitrantonio (2009) and Calhoun et al. (2000) reported that

religious coping facilitated PTG in persons who experienced traumatic events. For this reason, this researcher was curious which specific types of coping, if any, were associated with PTG in law enforcement officers.

The current study found that utilizing new and more effective stress appraisal and coping strategies was related to PTG in officers (Leppma et al., 2018). Chopko et al., (2018) found that maintaining action-oriented means of coping is integral for PTG in this population, which is consistent with general literature on PTG (Schaefer & Moos, 1998; Weiss & Berger, 2010). Guerrero (2018) showed that problem focused coping and emotion focused coping are important for PTG in officers. Emotion focused coping has also been found in general PTG literature (Rajandram et al., 2011). Thus, the results across sources indicate that different forms of coping are involved in officers' PTG process, which is like the general PTG literature.

The remaining across-source variables of finding meaning, experiencing satisfaction, stress or trauma symptoms, and system or worldview changes were derived from the process and pattern coding. Each are discussed next.

In the present study, both McCanlies et al. (2014) and Leppma et al. (2018) showed that finding meaning was related to the process of PTG in law enforcement officers. Finding meaning can indicate that officers have ample time to process the stressful events they experience, which allows for increased PTG (Leppma et al., 2018). Similarly, it appears that finding meaning after traumatic events can foster positive outcomes in the workplace (Saldanha & Barclay, 2021). Finding meaning can also connect to the existential changes and newfound understanding seen in the spiritual domain of PTG (Taku et al., 2020).

Along with finding meaning, another positive process that emerged from the present study was experiencing satisfaction. For example, Leppma et al. (2018) found that experiencing

life satisfaction is a key piece for PTG in the law enforcement population because it moderates the effects of stressful life events on PTG. Experiencing life satisfaction has also been linked to PTG among veterans (Morgan et al., 2017) and individuals living with HIV (Rzeszutek et al., 2019). Although not directly addressed in the current study's findings, career satisfaction can have a moderating effect on stress and be an important factor in experiencing PTG (Xu & Wu, 2014). Thus, clinicians working with officers who are routinely exposed to trauma are encouraged to promote life satisfaction (Leppma et al., 2018) and career satisfaction with their clients.

Testing one of their foundational tenets of their theory, Tedeschi et al., (2015) showed that PTG comes because of struggling after a traumatic event. Within struggle comes involves stress and potentially, trauma symptoms. Similarly, one of the themes in the present study was trauma or stress symptoms. Of note, our findings did not address the relationship between such symptoms and PTG. Future research is needed in this area because the relationship between PTSD symptoms and PTG has been unclear (Chen et al., 2015). This is because not only can posttraumatic stress and PTG coexist, but also because studies have found differing ways they relate: studies have shown significant associations between posttraumatic stress symptoms and PTG in a positive manner, negative manner or no association (Chen et al., 2015). One potential pathway is that growth affects the subsequent distress, while another is that posttraumatic stress symptoms play a positive role in the attainment of PTG (Chen et al., 2015). Joseph et al. (2015) stated that adapting to PTSD symptoms is linked to increased PTG in officers. Chopko et al. (2018) mention the same about PTSD symptoms in officers.

About active approaches, system or world view changes were also found through coding to be related to PTG in officers. Cognitive processing has been found to be related to the amount



of PTG individuals report when they positively change their worldview following a highly stressful event (Linley & Joseph, 2004; Joseph & Linley, 2006). Chopko et al. (2019) noted how law enforcement officers changing the way they interpret the world is an essential part of the PTG process.

In sum, our results highlight that PTG will not appear without active effort by the officer population. For instance, cognitive processing, engaging in social support, utilizing coping, and finding meaning require the officer to engage in specific processes instead of simply accepting the current circumstances. Combatting stress and dealing with trauma symptoms requires a high degree of effort. As is consistent with clinical literature generally and on PTG in all populations, the therapist can guide and collaborate, but the responsibility lies on the law enforcement officer. In therapy, it is important for the clinician to do less work than the client because more work can lead to burnout for the therapist and less progress for the client (McCormack et al., 2018).

Moreover, there is a need to facilitate access to mental health services for officers, which includes funding (Department of Justice Office of Public Affairs, 2020). These programs promote peer mentoring, suicide prevention, wellness, and training (Department of Justice Office of Public Affairs, 2020). The initiative by the DOJ recognizes that mental health is as important as physical health when it comes to officers serving their communities (Department of Justice Office of Public Affairs, 2020). System change and support is vital to enable individual officer wellness. As mentioned in the literature review, maladaptive coping mechanisms and avoidance in officers can lead to increased stress and less growth (Grubb et al., 2015).

### **Limitations and Potential Contributions**

This comprehensive review in this dissertation was subject to some limitations. While efforts were made to utilize a wide range of keywords to search for articles on PTG in law

enforcement, it was possible that some relevant sources might have been unintentionally omitted from this review. While our original search yielded 565 sources, many of them were duplicates or were not related to PTG in law enforcement. When deciding whether certain variables were related to PTG in the screening process, PTSD was sometimes omitted as a code. In addition, the researchers did not track or code whether the samples of officers in the selected studies had been diagnosed with PTSD or not, and did not examine the direction of the relationship between PTSD and PTG. Thus, it is difficult to know whether and how the stress/trauma symptoms code was related to PTSD diagnosis or other factors. Looking back at the data, since not all of the officers in the samples had been diagnosed with PTSD, that fact likely affected the frequency of stress/trauma symptoms being coded. If the studies had included officers who carried a PTSD diagnosis, it is likely that PTSD would have emerged as a code.

Furthermore, as the studies in this review were solely quantitative in English, qualitative data as well as research in other languages were excluded. A related limitation to the focus on quantitative research was that conclusions were made about PTG, when the PTGI was the main source of saying that PTG existed.

Another main limitation was the diversity, or lack thereof, of the samples within the sources. They were typically Caucasian males, which is consistent with the police culture (Karp & Stenmark, 2011; McCarty & Lawrence, 2014). The consideration of culture and diversity section for quality appraisal was consistently the lowest rated category for all nine sources, across all three raters. Future research on PTG in the law enforcement population will benefit from recruiting more diverse samples. This is particularly beneficial as culture is a significant variable associated with PTG and is an important consideration for the law enforcement field. Literature shows that individuals all over the world experience benefits from wrestling with

traumatic events and that PTG has culture-specific characteristics (Weiss & Berger, 2010). Those authors posited that PTG is a depiction of the societal values of the culture and the meaning making narratives they stimulate. For this reason, it is vital to consider other cultural demographics besides Caucasian men when conducting research with PTG in the law enforcement population. Furthermore, culture has been recognized as an integral part of the therapeutic process, thus, increasing this consideration in research will undoubtedly inform clinical practice with police officers.

According to Whittemore and Knafl (2005), an integrative systematic review can be clearly subjective, as techniques of coding and synthesizing information can be loosely defined. It was possible that different published researchers varied in their definitions and ideas related to PTG, which made it somewhat difficult to analyze. Yet, strong efforts were made to comprehensively analyze PTG in law enforcement. This dissertation used PRISMA to improve the quality of this PTG in law enforcement systematic review by strengthening the transparency, accurate reporting, and comprehensiveness of this review (Moher et al., 2015). Further, the collected PTG data was analyzed using content analysis, which is a common, empirically grounded methodology (Giannantonio, 2010). One of the most important research techniques in the social sciences, content analysis is a research technique involving open coding, creating categories/themes, and abstraction (Elo et al., 2014; Elo & Kyngäs, 2008), which makes replicable and sound interpretations from data to their context (Krippendorff, 1989). As a qualitative method, the different components of content analysis have varying levels of inference (Vaismoradi et al., 2016), with the highest level in the current study being abstraction. To counter subjectivity biases that come with higher amounts of inference, the present study employed multiple trained coders, interrater reliability calculation and monitoring, and the use of

audit trails, which increased the transparency and trustworthiness of the qualitative coding process.

There were also limitations and strengths in using a research team to collect and analyze the data. Having multiple coders (no more than five) has been recommended to reduce bias and incorporate a wider range of analysis (Bernard, 2011; Saldaña, 2013). To account for inevitable bias in the research process, this study did quality appraisal, practice coding with a sample article, and provided research team members with training on the specific methodology being utilized. Also, although this study tracked and calculated reliability of coder quality appraisal ratings as well as process codes, a potential limitation was the use of percent agreement. The research team could have used a method that corrected for chance agreement for more accurate ratings.

This dissertation contributed to the field of psychological interventions and research by bringing attention to the limited literature that exists on PTG and law enforcement officers. By organizing the existing quantitative studies into a cohesive review, it was one of the first documents to examine this literature. As a result, it may influence future contributions to the field of trauma and trauma recovery by shedding light on potential gaps in the literature that would benefit from future quantitative and qualitative examination.

Further research will benefit from utilizing the variables that were extracted and continuing to analyze ways to promote PTG in the population. While there are recommendations available for clinicians, less study has been devoted to promoting PTG in the law enforcement population. Results from the nine sources in the present study could be used to indicate that generic guidelines for promoting PTG that focus on coping, social support, and cognitive processing could be helpful for the law enforcement population too. These suggestions align with

the work of Roepke et al. (2017) who found that programs designed to reduce stress and anxiety through exposure therapy, emotional disclosure, and stress-management were effective at increasing PTG in officers. Thus, future research could track these potential ways to promote PTG in therapy, which would benefit police psychologists and other relevant clinicians who work with clients in law enforcement.

Given current events and stressors (protests, riots, departmental scrutiny, increased oversight from the executive branch of government) that are particularly salient for police officers, it is important for researchers and clinicians to consider how variables found in this study to be related to PTG (e.g., coping, social support) are changing in the law enforcement population. For example, while the current study found life satisfaction to be a theme, future research should consider the influence career satisfaction has on PTG, and its relationship with PTG, in the law enforcement population. Career satisfaction is currently being significantly affected by self-legitimacy issues, the fear of appearing racist, increased stress within departments, and hesitancy to use force (Trinkner et al., 2019). Given the current difficulties hiring and retaining high quality officers, it will be crucial to identify ways to bolster resiliency and PTG in the current workforce. Future research should also place a larger emphasis on clinical recommendations that address complex contemporary stressors, such as how officers can experience PTG while tackling the evident racial disparities and public distrust that have been a central focus for the past year.

Future research should also consider identifying how these variables look different across the specific cultural identities of officers across departments. For example, just as people in Spain have been shown to experience more communal coping, whereas the United States has more individualistic processes (Weiss & Berger, 2010), a future study could examine the impact

of diversity on PTG variables in officers across departments. Engaging in this analysis will have positive implications for the field of police psychology.

## **Conclusion**

In conclusion, it is hoped that the findings of this study, which was consistent with some of the general PTG literature, will provide clinicians with further knowledge of how to understand, assess, and encourage growth following PTEs and traumatic events for officers. Exploring the study of PTG in law enforcement with more diverse samples will redress the gap in the literature regarding varied populations. By investigating research and practice with these individuals, these findings will continue to inform methods of supporting an important population that constantly strives to serve the public in the midst of challenges and stressors.

## REFERENCES

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders: DSM-5* (5th ed.). American Psychiatric Association.
- Andersen, J. P., & Papazoglou, K. (2014). Friends under fire: Cross-cultural relationships and trauma exposure among police officers. *Traumatology*, 20(3), 182–190.  
<https://doi-org.lib.pepperdine.edu/10.1037/h0099403>
- Andrew, M. E., McCanlies, E. C., Burchfiel, C. M., Charles, L., Hartley, T. A., Fekedulegn, D., & Violanti, J. M. (2008). Hardiness and psychological distress in a cohort of police officers. *International Journal of Emergency Mental Health*, 10(2), 137–148.  
<https://doi.org/10.1037/e517322011-502>
- Arnetz, B. B., Nevedal, D. C., Lumley, M. A., Backman, L., & Lublin, A. (2009). Trauma resilience training for police: Psychophysiological and performance effects. *Journal of Police and Criminal Psychology*, 24(1), 1–9. <https://doi-org.lib.pepperdine.edu/10.1007/s11896-008-9030-y>
- Belur, J., Tompson, L., Thornton, A., & Simon, M. (2021). Interrater reliability in systematic review methodology: Exploring variation in coder decision-making. *Sociological Methods & Research*, 50(2), 837–865. <https://doi.org/10.1177/0049124118799372>
- Bennell, C., Alpert, G., Andersen, J. P., Arpaia, J., Huhta, J., Kahn, K. B., Khanizadeh, A., McCarthy, M., McLean, K., Mitchell, R. J., Nieuwenhuys, A., Palmer, A., & White, M. D. (2021). Advancing police use of force research and practice: Urgent issues and prospects. *Legal and Criminological Psychology*. 26(2), 121–144. <https://doi-org.lib.pepperdine.edu/10.1111/lcrp.12191>
- Bernard, H. R. (2011). *Research methods in anthropology: Qualitative and quantitative*

- approaches* (5th ed.). AltaMira Press.
- Bjorck, J. P., & Byron, K. J. (2014). Does stress-related growth involve constructive changes in coping intentions? *The Journal of Positive Psychology*, 9(2), 97–107.  
<https://doi-org.lib.pepperdine.edu/10.1080/17439760.2013.858273>
- Boals, A., & Schuler, K. (2018). Shattered cell phones, but not shattered lives: A comparison of reports of illusory posttraumatic growth on the Posttraumatic Growth Inventory and the Stress-Related Growth Scale—Revised. *Psychological Trauma: Theory, Research, Practice, and Policy*, 11(2), 239–246.  
<https://doi-org.lib.pepperdine.edu/10.1037/tra0000390>
- Bonanno, G. A. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *The American Psychologist*, 59(1), 20–8. <https://doi-org.lib.pepperdine.edu/10.1037/0003-066X.59.1.20>
- Bower, J. E., Kemeny, M. E., Taylor, S. E., & Fahey, J. L. (2003). Finding positive meaning and its association with natural killer cell cytotoxicity among participants in a bereavement-related disclosure intervention. *Annals of Behavioral Medicine*, 25(2), 146–155.  
[https://doi.org/10.1207/S15324796ABM2502\\_11](https://doi.org/10.1207/S15324796ABM2502_11)
- Brooks, M., Graham-Kevan, N., Robinson, S., & Lowe, M. (2021). “I get knocked down, but I get up again” – A qualitative exploration of posttraumatic growth after multiple traumas. *Traumatology*, 25(1), 1–29. <https://doi.org/10.1037/trm0000299>
- Brown, D. J., Arnold, R., Fletcher, D., & Standage, M. (2017). Human thriving: A conceptual debate and literature review. *European Psychologist*, 22(3), 167–179.  
<https://doi-org.lib.pepperdine.edu/10.1027/1016-9040/a000294>
- Bryant-Davis, T. (Ed.). (2011). *Surviving sexual violence: A guide to recovery and*



*empowerment*. Rowman & Littlefield.

- Calhoun, L. G., Cann, A., Tedeschi, R. G., & McMillan, J. (2000). A correlational test of the relationship between posttraumatic growth, religion, and cognitive processing. *Journal of Traumatic Stress, 13*(3), 521–527. <https://doi.org/10.1023/A:1007745627077>
- Calhoun, L. G., & Tedeschi, R. G. (1999). *Facilitating posttraumatic growth: A clinician's guide*. Routledge.
- Calhoun, L. G., & Tedeschi, R. G. (2006). *Handbook of posttraumatic growth: Research and practice*. Lawrence Erlbaum Associates.
- Cann, A., Calhoun, L. G., Tedeschi, R. G., Kilmer, R. P., Gil-Rivas, V., Vishnevsky, T., & Danhauer, S. C. (2010a). The core beliefs inventory: A brief measure of disruption in the assumptive world. *Anxiety, Stress, and Coping, 23*(1), 19–34.  
<https://doi.org/10.1080/10615800802573013>
- Cann, A., Calhoun, L. G., Tedeschi, R. G., & Solomon, D. T. (2010b). Posttraumatic growth and depreciation as independent experiences and predictors of well-being. *Journal of Loss and Trauma, 15*(3), 151–166. <https://doi.org/10.1080/15325020903375826>
- Caplan, C. (1964). *Principles of Preventive Psychiatry*. Basic Books, Inc.
- Caspari, J. M., Raque-Bogdan, T. L., McRae, C., Simoneau, T. L., Ash-Lee, S., & Hultgren, K. (2017). Posttraumatic growth after cancer: The role of perceived threat and cognitive processing. *Journal of Psychosocial Oncology, 35*(5), 561–577. <https://doi-org.lib.pepperdine.edu/10.1080/07347332.2017.1320347>
- Chen, J., Zhou, X., Zeng, M., & Wu, X. (2015). Post-traumatic stress symptoms and post-traumatic growth: Evidence from a longitudinal study following an earthquake disaster. *PloS one, 10*(6), 1–10. <https://doi.org/10.1371/journal.pone.0127241>

- Chopko, B. A. (2010). Posttraumatic distress and growth: An empirical study of police officers. *American Journal of Psychotherapy*, 64(1), 55–72. <https://doi-org.lib.pepperdine.edu/10.1176/appi.psychotherapy.2010.64.1.55>
- Chopko, B. A., Palmieri, P. A., & Adams, R. E. (2018). Relationships among traumatic experiences, PTSD, and posttraumatic growth for police officers: A path analysis. *Psychological Trauma: Theory, Research, Practice, and Policy*, 10(2), 183–189. <https://doi-org.lib.pepperdine.edu/10.1037/tra0000261.supp>
- Chopko, B. A., Palmieri, P. A., & Adams, R. E. (2019). Posttraumatic growth in relation to the frequency and severity of traumatic experiences among police officers in small to midsize departments. *Journal of Interpersonal Violence*, 34(6), 1247–1260. <https://doi-org.lib.pepperdine.edu/10.1177/0886260516651089>
- Chopko, B. A., & Schwartz, R. C. (2009). The relation between mindfulness and posttraumatic growth: A study of first responders to trauma-inducing incidents. *Journal of Mental Health Counseling*, 31(4), 363–376. <https://doi-org.lib.pepperdine.edu/10.17744/mehc.31.4.9w6lhk4v66423385>
- Cobb, A. R., Tedeschi, R. G., Calhoun, L. G., & Cann, A. (2006). Correlates of posttraumatic growth in survivors of intimate partner violence. *Journal of Traumatic Stress*, 19(6), 895–903. <https://doi-org.lib.pepperdine.edu/10.1002/jts.20171>
- Corman, M., Rubio, M., Cabrespine, A., Brindel, I., Bay, J., De La Tour, R. P., & Dambrun, M. (2021). Retrospective and prospective measures of post-traumatic growth reflect different processes: Longitudinal evidence of greater decline than growth following a hematopoietic stem-cell transplantation. *BMC Psychiatry*, 21(27), 1–11. <https://doi-org.lib.pepperdine.edu/10.1186/s12888-020-03007-y>

- Cullen, F., Agnew, T., & Wilcox, P. (2017). *Criminological Theory: Past to present essential readings*. Oxford University Press.
- Danhauer, S. C., Case, L. D., Tedeschi, R., Russell, G., Vishnevsky, T., Triplett, K., Avis, N. E. (2013a). Predictors of posttraumatic growth in women with breast cancer. *Psycho-Oncology*, 22(12), 1–15. <https://doi.org/10.1002/pon.3298>
- Danhauer, S. C., Russell, G. B., Tedeschi, R. G., Jesse, M. T., Vishnevsky, T., Daley, K., & Powell, B. L. (2013b). A longitudinal investigation of posttraumatic growth in adult patients undergoing treatment for acute leukemia. *Journal of Clinical Psychology in Medical Settings*, 20(1), 13–24. <https://doi-org.lib.pepperdine.edu/10.1007/s10880-012-9304-5>
- Department of Justice Office of Public Affairs. (2020, September 8). *Department of Justice Announces Funding to Promote Law Enforcement Mental Health and Wellness*. The United States Department of Justice. <https://www.justice.gov/opa/pr/department-justice-announces-funding-promote-law-enforcement-mental-health-and-wellness>
- Duckworth, A. L., Peterson, C., Matthews, M. D., & Kelly, D. R. (2007). Grit: Perseverance and passion for long-term goals. *Journal of Personality and Social Psychology*, 92(6), 1087–1101. <https://doi.org/10.1037/0022-3514.92.6.1087>
- Elo, S., & Kyngäs, H. (2008). Original methodology: The qualitative content analysis process. *Journal of Advanced Nursing*, 62(1), 107–115. <https://doi.org/10.1111/j.1365-2648.2007.04569.x>
- Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K., & Kyngäs, H. (2014). Qualitative content analysis: A focus on trustworthiness. *SAGE Open*, 4(1), 275–280. <https://doi.org/10.1177/2158244014522633>

- Evans R., Pistrang N., & Billings J. (2013). Police officers' experiences of supportive and unsupportive social interactions following traumatic incidents. *European Journal of Psychotraumatology*, 4(1). 1–10. <https://doi-org.lib.pepperdine.edu/10.3402/ejpt.v4i0.19696>
- Finkel, N. J. (1974). Strenuous and traumas: An attempt at categorization. *American Journal of Community Psychology*, 2(3), 265–273. <https://doi.org/10.1007/BF00880847>
- Finn, S. E., & Martin, H. (2013). Therapeutic assessment: Using psychological testing as brief therapy. In K. F. Geisinger, B. A. Bracken, J. F. Carlson, J. I. C. Hansen, N. R. Kuncel, S. P. Reise, & M. C. Rodriguez (Eds.), *APA handbook of testing and assessment in psychology, Vol. 2: Testing and assessment in clinical and counseling psychology*. (pp. 453–465). American Psychological Association.  
<https://doi-org.lib.pepperdine.edu/10.1037/14048-026>
- Fisher, O., & Oyserman, D. (2017). Assessing interpretations of experienced ease and difficulty as motivational constructs. *Motivation Science*, 3(2), 133–163.  
<https://doi-org.lib.pepperdine.edu/10.1037/mot0000055.supp>
- Ford, H. (2014). *Advanced qualitative analysis* [PowerPoint Slides]. SlideShare.  
<https://www.slideshare.net/hfordsa/qualitative-codes-and-coding>
- Frankl, V. E. (1963). *Man's search for meaning*. Pocket Books.
- Frazier, P., Tennen, H., Gavian, M., Park, C., Tomich, P., & Tashiro, T. (2009). Does Self-Reported Posttraumatic Growth Reflect Genuine Positive Change? *Psychological Science*, 20(7), 912–919. <https://doi.org/10.1111/j.1467-9280.2009.02381.x>
- Fusilier M. R., Ganster D. C., & Mayes B.T. (1987). Effects of social support, role stress, and locus of control on health. *Journal of Management*, 13(3), 517–528.

<https://doi-org.lib.pepperdine.edu/10.1177/014920638701300308>

Giannantonio, C. M. (2010). Review of content analysis: An introduction to its methodology (2nd ed). *Organizational Research Methods*, 13(2), 392–394.

<https://doi-org.lib.pepperdine.edu/10.1177/1094428108324513>

Glen, S. (2016, July 17). *Inter-rater Reliability IRR: Definition, Calculation. StatisticsHowTo.com: Elementary Statistics for the rest of us!*

<https://www.statisticshowto.com/inter-rater-reliability/>

Goldberg, L. D., McDonald, S. D., & Perrin, P. B. (2019). Predicting trajectories of posttraumatic growth following acquired physical disability. *Rehabilitation Psychology*, 64(1), 37–49. <https://doi-org.lib.pepperdine.edu/10.1037/rep0000247>

Grubb A., Brown S., & Hall P. (2015). Personality traits and coping styles in UK police officers. Do negotiators differ from their non-negotiator colleagues? *Psychology, Crime & Law*, 21(4), 347–374. <https://doi.org/10.1080/1068316X.2014.989165>

Guerrero, A. (2018). *Post-traumatic growth and coping style in law enforcement officers* (Publication No. 10193589) [Doctoral Dissertation, The Chicaco School of Professional Psychology]. ProQuest Dissertations and Theses Global.

Hall, S., Alas, R., Crespi-Hunt, C., & Khatchadourian, A. (2014). Ways to promote resilience and posttraumatic growth in psychotherapy. *The California Psychologist*, 47(2), 14–17.

Harry, B., Sturges, K. M., & Klingner, J. K. (2005). Mapping the process: An exemplar of process and challenge in grounded theory analysis. *Educational Researcher*, 34(2), 3–13. <https://doi-org.lib.pepperdine.edu/10.1111/j.1756-2589.2012.00126.x>

Hatch, J. A. (2002). *Doing qualitative research in education settings*. State University of New York Press.

- Ho, S. M., Chu, K. W., & Yiu, J. (2008). The relationship between explanatory style and posttraumatic growth after bereavement in a non-clinical sample. *Death Studies*, 32(5), 461–478. <https://doi.org/10.1080/07481180801974760>
- Howells, K., & Fletcher, D. (2016). Adversarial growth in Olympic swimmers: Constructive reality or illusory self-deception? *Journal of Sport & Exercise Psychology*, 38(2), 173–186. <https://doi-org.lib.pepperdine.edu/10.1123/jsep.2015-0159>
- Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15(9), 1277–1288. <https://doi-org.lib.pepperdine.edu/10.1177/1049732305276687>
- Infurna, F. J., & Jayawickreme, E. (2019). Fixing the growth illusion: New directions for research in resilience and posttraumatic growth. *Current Directions in Psychological Science*, 28(2), 152–158. <https://doi.org/10.1177/0963721419827017>
- Jia, X., Ying, L., Zhou, X., Wu, X., Lin, C. (2015) The effects of extraversion, social support on the posttraumatic stress disorder and posttraumatic growth of adolescent survivors of the Wenchuan earthquake. *PLOS ONE*. 10(3), 1–13. <https://doi.org/10.1371/journal.pone.0121480>
- Joseph, S., & Linley, P. A. (2006). Growth following adversity: Theoretical perspectives and implications for clinical practice. *Clinical Psychology Review*, 26(8), 1041–1053. <https://doi-org.lib.pepperdine.edu/10.1016/j.cpr.2005.12.006>
- Joseph, S., Murphy, D., & Regel, S. (2015). Post-traumatic growth in police officers: Guidelines for facilitating post-traumatic growth. In S. M. F. Clevenger, L. Miller, B. A. Moore, & A. Freeman (Eds.), *Behind the badge: A psychological treatment handbook for law enforcement officers* (pp. 256–268). Routledge/Taylor & Francis Group.

- Joseph, S., Williams, R., & Yule, W. (1993). Changes in outlook following disaster: The preliminary development of a measure to assess positive and negative responses. *Journal of Traumatic Stress*, 6(2), 271–279. <https://doi.org/10.1002/jts.2490060209>
- Kam, J. A., Pérez Torres, D., & Steuber Fazio, K. (2018). Identifying individual- and family-level coping strategies as sources of resilience and thriving for undocumented youth of Mexican origin. *Journal of Applied Communication Research*, 46(5), 641–664. <https://doi-org.lib.pepperdine.edu/10.1080/00909882.2018.1528373>
- Karmen, Andrew. (2016) *Crime Victims: An Introduction to Victimology* (9th ed.). Cengage Learning.
- Karp, S., & Stenmark, H. (2011). Learning to be a police officer: Tradition and change in the training and professional lives of police officers. *Police Practice & Research: An International Journal*, 12(1), 4–15. <https://doi-org.lib.pepperdine.edu/10.1080/15614263.2010.497653>
- Krippendorff, K. (1989). Content analysis. In E. Barnouw, G. Gerbner, W. Schramm, T. L. Worth, & L. Gross (Eds.), *International Encyclopedia of Communication* (Vol. 1, pp. 403–407). Oxford University Press.
- Kunz, S., Fellinghauer, C., & Peter, C. (2019). Measuring posttraumatic growth and depreciation after spinal cord injury: A rasch analysis. *Rehabilitation Psychology*, 64(4), 407–424. <https://doi.org/10.1037/rep0000288>
- Lepore, S. J., & Revenson, T. A. (2006). Resilience and posttraumatic growth: Recovery, resistance, and reconfiguration. In L. G. Calhoun & R. G. Tedeschi (Eds.), *Handbook of posttraumatic growth: Research & practice* (pp. 24–46). Lawrence Erlbaum Associates Publishers.

- Leppma, M., Mnatsakanova, A., Sarkisian, K., Scott, O., Adjero, L., Andrew, M. E., Violanti, J. M., & McCanlies, E. C. (2018). Stressful life events and posttraumatic growth among police officers: A cross-sectional study. *Stress and health: Journal of the International Society for the Investigation of Stress*, 34(1), 175–186.  
<https://doi-org.lib.pepperdine.edu/10.1002/smi.2772>
- Liberati A., Altman D. G., Tetzlaff J., Mulrow C., Gøtzsche P. C., Ioannidis J. P. A., Clarke M., Devereaux P. J., Kleijnen J., Moher D. (2009) The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: Explanation and elaboration. *The British Medical Journal*, 339, 1–27.  
<https://doi.org/10.1136/bmj.b2700>
- Lindgren, B. M., Lundman, B., & Graneheim, U. H. (2020). Abstraction and interpretation during the qualitative content analysis process. *International Journal of Nursing Studies*, 108. 1–6. <https://doi.org/10.1016/j.ijnurstu.2020.103632>
- Linley, P. A., & Joseph, S. (2004). Positive change following trauma and adversity: A review. *Journal of Traumatic Stress*, 17(1), 11–21. <https://doi-org.lib.pepperdine.edu/10.1023/B:JOTS.0000014671.27856.7e>
- Lombard, M., Snyder-Duch, J., & Bracken, C. C. (2002). Content analysis in mass communication: Assessment and reporting of intercoder reliability. *Human Communication Research*, 28(4), 587–604. <https://doi-org.lib.pepperdine.edu/10.1111/j.1468-2958.2002.tb00826.x>
- Louw G. J. (2014). Burnout, vigour, big five personality traits and social support in a sample of police officers. *SAJIP: South African Journal of Industrial Psychology*, 40(1), 1–13.  
<https://doi.org/10.4102/sajip.v40i1.1119>



- Maercker, A., & Zoellner, T. (2004). The janus face of self-perceived growth: Toward a two-component model of posttraumatic growth. *Psychological Inquiry*, 15(1), 41–48.
- Manne, S., Ostroff, J., Winkel, G., Goldstein, L., Fox, K., & Grana, G. (2004). Posttraumatic growth after breast cancer: Patient, partner, and couple perspectives. *Psychosomatic Medicine*, 66(3), 442–454. <https://doi-org.lib.pepperdine.edu/10.1097/01.psy.0000127689.38525.7d>
- Manove, E. E., Lowe, S. R., Bonumwezi, J., Preston, J., Waters, M. C., & Rhodes, J. E. (2019). Posttraumatic growth in low-income Black mothers who survived Hurricane Katrina. *American Journal of Orthopsychiatry*, 89(2), 144–158. <https://doi-org.lib.pepperdine.edu/10.1037/ort0000398.supp>
- McCanlies, E. C., Mnatsakanova, A., Andrew, M. E., Burchfiel, C. M., & Violanti, J. M. (2014). Positive psychological factors are associated with lower PTSD symptoms among police officers: Post Hurricane Katrina. *Stress and Health: Journal of the International Society for the Investigation of Stress*, 30(5), 405–415. <https://doi-org.lib.pepperdine.edu/10.1002/smi.2615>
- McCarty, W. P., & Lawrence, D. S. (2016). Coping, confidence, and change within the academy: A longitudinal look at police recruits. *Police Practice and Research*, 17(3), 263–278. <https://doi.org/10.1080/15614263.2014.958486>
- McCormack, H. M., MacIntyre, T. E., O'Shea, D., Herring, M. P., & Campbell, M. J. (2018). The prevalence and cause(s) of burnout among applied psychologists: A systematic review. *Frontiers in Psychology*, 9(1), 1–19. <https://doi-org.lib.pepperdine.edu/10.3389/fpsyg.2018.01897>
- McMillen, J. C. (2004). Posttraumatic growth: What's it all about? *Psychological Inquiry*, 15(1),

- 48–52. [https://doi.org/10.1207/s15327965pli1501\\_02](https://doi.org/10.1207/s15327965pli1501_02)
- McMillen, J. C., Fisher, R. H. (1998). The perceived benefit scales: Measuring perceived positive life changes after negative events. *Social Work Research*, 22(3), 173–186. <https://doi-org.lib.pepperdine.edu/10.1093/swr/22.3.173>
- Mehta, D., Miller, O., Bruenig, D., David, G., & Shakespeare-Finch, J. (2020). A Systematic review of DNA methylation and gene expression studies in posttraumatic stress disorder, posttraumatic growth, and resilience. *Journal of Traumatic Stress*, 33(2), 171–180. <https://doi.org/10.1002/jts.22472>
- Ménard, K. S., & Arter, M. L. (2013). Police officer alcohol use and trauma symptoms: Associations with critical incidents, coping, and social stressors. *International Journal Of Stress Management*, 20(1), 37–56. <https://doi-org.lib.pepperdine.edu/10.1037/a0031434>
- Mesidor, J. K., & Sly, K. F. (2019). Religious coping, general coping strategies, perceived social support, PTSD symptoms, resilience, and posttraumatic growth among survivors of the 2010 earthquake in Haiti. *Mental Health, Religion & Culture*, 22(2), 130–143. <https://doi-org.lib.pepperdine.edu/10.1080/13674676.2019.1580254>
- Michélsen, H., Therup-Svedenlöf, C., Backheden, M., & Schulman, A. (2017). Posttraumatic growth and depreciation six years after the 2004 tsunami. *European Journal of Psychotraumatology*, 8(1), 1–11. <https://doi.org/10.1080/20008198.2017.1302691>
- Middleton, H. (2016). Flourishing and posttraumatic growth. An empirical take on ancient wisdoms. *Health Care Analysis*, 24(2), 133–147. <https://doi-org.lib.pepperdine.edu/10.1007/s10728-016-0318-2>
- Moher, D., Shamseer, L., Clarke, M., Ghersi, D., Liberati, A., Petticrew, M., Shekelle, P., &

- Stewart, L. (2015). Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *The British Medical Journal*, 349, 1–25.  
<https://doi.org/10.1136/bmj.g7647>
- Morgan, J., Desmarais, S., Mitchell, R., & Simons-Rudolph, J. (2017) Posttraumatic stress, posttraumatic growth, and satisfaction with life in military veterans. *Military Psychology*, 29(5), 434–447. <https://doi.org/10.1037/mil0000182>
- Mosher, C. E., Adams, R. N., Helft, P. R., O’Neil, B. H., Shahda, S., Rattray, N. A., & Champion, V. L. (2017). Positive changes among patients with advanced colorectal cancer and their family caregivers: A qualitative analysis. *Psychology & Health*, 32(1), 94–109. <https://doi.org/10.1080/08870446.2016.1247839>
- Mosher, C. E., Danoff-Burg, S., & Brunker, B. (2006). Post-traumatic growth and psychosocial adjustment of daughters of breast cancer survivors. *Oncology Nursing Forum*, 33(3), 543–551. <https://doi.org/10.1188/06>.
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., McGuinness, L. A., Stewart, L. A., Thomas, J., Tricco, A. C., Welch, V., Whiting, P., & Moher, D. (2021). The prisma 2020 statement: An updated guideline for reporting systematic reviews. *Journal of Clinical Epidemiology*, 134, 178–189.  
<https://doi.org/10.1016/j.jclinepi.2021.03.001>
- Papazoglou, K. (2013). Conceptualizing police complex spiral trauma and its applications in the police field. *Traumatology*, 19(3), 196–209.  
<https://doi-org.lib.pepperdine.edu/10.1177/1534765612466151>

- Park, C. L., & Ai, A. L. (2006). Meaning making and growth: New directions for research on survivors of trauma. *Journal of Loss and Trauma, 11*(5), 389–407. <https://doi.org/10.1080/15325020600685295>
- Park, C. L., Cohen, L., & Murch, R. (1996). Assessment and prediction of stress-related growth. *Journal of Personality, 64*(1), 71–105. <https://doi-org.lib.pepperdine.edu/10.1111/j.1467-6494.1996.tb00815.x>
- Park, C. L., & Lechner, S. (2006). Measurement issues in assessing growth following stressful life experiences. In L. G. Calhoun, & R. G. Tedeschi (Eds.), *Handbook of posttraumatic growth: Research and practice* (pp. 47–67). Lawrence Erlbaum.
- Patterson G. T. (2003). Examining the effects of coping and social support on work and life stress among police officers. *Journal of Criminal Justice, 31*(3), 215–226. [https://doi-org.lib.pepperdine.edu/10.1016/S0047-2352\(03\)00003-5](https://doi-org.lib.pepperdine.edu/10.1016/S0047-2352(03)00003-5)
- Patterson, G. T., Chung, I. W., & Swan, P. W. (2014). Stress management interventions for police officers and recruits: A meta-analysis. *Journal of Experimental Criminology, 10*(4), 487–513. <https://doi-org.lib.pepperdine.edu/10.1007/s11292-014-9214-7>
- Paton, D., & Burke, K. J. (2007). Personal and organizational predictors of posttraumatic adaptation and growth in police officers. *Australasian Journal of Disaster and Trauma Studies, 2007*(1), 1–12.
- Powell, A. J., & Myers, T. D. (2017). Developing mental toughness: Lessons from paralympians. *Frontiers in Psychology, 8*(1270), 1–16. <https://doi.org.lib.pepperdine.edu/10.3389/fpsyg.2017.01270>
- Powell, T., Gilson, R., & Collin, C. (2012). TBI 13 years on: Factors associated with post

- traumatic growth. *Disability and Rehabilitation: An International, Multidisciplinary Journal*, 34(17), 1461–1467. <https://doi.org/10.3109/09638288.2011.644384>
- Prati, G., & Pietrantonio, L. (2009) Optimism, social support, and coping strategies as factors contributing to posttraumatic growth: A Meta-analysis. *Journal of Loss and Trauma*, 14(5), 364–388. <https://doi.org/10.1080/15325020902724271>
- Rajandram, R. K., Jenewein, J., McGrath, C., & Zwahlen, R. A. (2011). Coping processes relevant to posttraumatic growth: An evidence-based review. *Supportive care in cancer: Official Journal of the Multinational Association of Supportive Care in Cancer*, 19(5), 583–589. <https://doi.org/10.1007/s00520-011-1105-0>
- Roepke, A. M., Benson, L., Tsukayama, E., & Yaden, D. B. (2017). Prospective writing: Randomized controlled trial of an intervention for facilitating growth after adversity. *The Journal of Positive Psychology*, 13(6), 627–642. <https://doi.org/10.1080/17439760.2017.1365161>
- Ryff, C. D., & Singer, B. (2003). Flourishing under fire: Resilience as a prototype of challenged thriving. In C. L. M. Keyes & J. Haidt (Eds.), *Flourishing: Positive psychology and the life well-lived* (pp. 15–36). American Psychological Association.
- Rzeszutek, M., Oniszczenko, W., & Gruszczyńska, E. (2019). Satisfaction with life, big-five personality traits and posttraumatic growth among people living with HIV. *Journal of Happiness Studies: An Interdisciplinary Forum on Subjective Well-Being*, 20(1), 35–50. <https://doi-org.lib.pepperdine.edu/10.1007/s10902-017-9925-3>
- Saldaña, J. (2009). *The coding manual for qualitative researchers*. Sage.
- Saldaña, J. (2013). *The coding manual for qualitative researchers* (2nd ed.). Sage.
- Saldanha, M. F., & Barclay, L. J. (2021). Finding meaning in unfair experiences: Using

- expressive writing to foster resilience and positive outcomes. *Applied Psychology: Health and Well-Being*. 1–19. <https://doi-org.lib.pepperdine.edu/10.1111/aphw.12277>
- Sandelowski, M., & Barroso, J. (2007). *Handbook for synthesizing qualitative research*. Springer.
- Schaefer, J. A., & Moos, R. H. (1998). The context for posttraumatic growth: Life crises, individual and social resources, and coping. In R. G. Tedeschi, C. L. Park, & L. G. Calhoun (Eds.), *Posttraumatic growth: Positive changes in the aftermath of crisis* (pp. 99–125). Lawrence Erlbaum Associates Publishers.
- Seligman, M. E. P. (2011). *Flourish: A visionary new understanding of happiness and well-being*. Atria Books.
- Shakespeare-Finch, J., Martinek, E., Tedeschi, R. G., & Calhoun, L. G. (2013). A qualitative approach to assessing the validity of the posttraumatic growth inventory. *Journal of Loss and Trauma*, 18(6), 572–591. <https://doi.org/10.1080/15325024.2012.734207>
- Stutts, L. A., Bills, S. E., Erwin, S. R., & Good, J. J. (2015). Coping and posttraumatic growth in women with limb amputations. *Psychology, Health & Medicine*, 20(6), 742–752. <https://doi-org.lib.pepperdine.edu/10.1080/13548506.2015.1009379>
- Su, R., Tay, L., & Diener, E. (2014). The development and validation of the Comprehensive Inventory of Thriving (CIT) and the Brief Inventory of Thriving (BIT). *Applied Psychology: Health and Well-Being*, 6(3), 251–279. <https://doi-org.lib.pepperdine.edu/10.1111/aphw.12027>
- Taku, K., Tedeschi, R. G., Shakespeare-Finch, J., Krosch, D., David, G., Kehl, D., Grunwald, S., Romeo, A., Di Tella, M., Kamibepu, K., Soejima, T., Hiraki, K., Volgin, R., Dhakal, S., Zięba, M., Ramos, C., Nunes, R., Leal, I., Gouveia, P., & Calhoun, L. G. (2020).

- Posttraumatic growth (PTG) and posttraumatic depreciation (PTD) across ten countries: Global validation of the PTG-PTD theoretical model. *Personality and Individual Differences*. 169, 1–6. <https://doi-org.lib.pepperdine.edu/10.1016/j.paid.2020.110222>
- Tedeschi, R. G., & Calhoun, L. G. (1996). The Posttraumatic Growth Inventory: Measuring the positive legacy of trauma. *Journal of Traumatic Stress*, 9(3), 455–471. <https://doi-org.lib.pepperdine.edu/10.1002/jts.2490090305>
- Tedeschi, R. G., & Calhoun, L. G. (2004). Posttraumatic growth: Conceptual foundations and empirical evidence. *Psychological Inquiry*, 15(1), 1–18. [https://doi.org/10.1207/s15327965pli1501\\_01](https://doi.org/10.1207/s15327965pli1501_01)
- Tedeschi, R.G., Calhoun, L.G. & Groleau, J.M. (2015). Clinical applications of posttraumatic growth. In S. Joseph (Eds.), *Positive psychology in practice: Promoting human flourishing in work, health, education, and everyday life* (2nd ed., pp. 503–518). John Wiley & Sons, Inc. <https://doi.org/10.1002/9781118996874.ch30>
- Tedeschi, R. G., & McNally, R. J. (2011). Can we facilitate posttraumatic growth in combat veterans? *American Psychologist*, 66(1), 19–24. <https://doi-org.lib.pepperdine.edu/10.1037/a0021896>
- Tedeschi, R.G., & Moore, B. A. (2016). *The posttraumatic growth workbook: Coming through trauma wiser, stronger, and more resilient*. New Harbinger Publications.
- Tedeschi, R.G., Shakespeare-Finch, J., Taku, K., & Calhoun, L.G. (2018). *Posttraumatic growth: Theory, research, and applications* (1st ed.). Routledge.
- Thomas, D. R. (2006). A general inductive approach for analyzing qualitative evaluation data. *American Journal of Evaluation*, 27(2), 237–246. <https://doi-org.lib.pepperdine.edu/10.1177/1098214005283748>

- Thomas, K. H., & Albright, D. L. (2018). The theory and practice of training for resilience. In K. Hendricks Thomas & D. L. Albright (Eds.), *Bulletproofing the psyche: Preventing mental health problems in our military and veterans* (pp. 69–75). Praeger/ABC-CLIO.
- Tomich, P. L., Helgeson, V. S. (2004). Is finding something good in the bad always good? Benefit finding among women with breast cancer. *Health Psychology*, 23(1), 16–23. <https://doi-org.lib.pepperdine.edu/10.1037/0278-6133.23.1.16>
- Trinkner, R., Kerrison, E. M., & Goff, P. A. (2019). The force of fear: Police stereotype threat, self-legitimacy, and support for excessive force. *Law and Human Behavior*, 43(5), 421–435. <https://doi-org.lib.pepperdine.edu/10.1037/lhb0000339.supp>
- Triplett, K. N., Tedeschi, R. G., Cann, A., Calhoun, L. G., & Reeve, C. L. (2012). Posttraumatic growth, meaning in life, and life satisfaction in response to trauma. *Psychological Trauma: Theory, Research, Practice, and Policy*, 4(4), 400–410. <https://doi-org.lib.pepperdine.edu/10.1037/a0024204>
- Uman L. S. (2011). Systematic reviews and meta-analyses. *Journal of the Canadian Academy of Child and Adolescent Psychiatry*, 20(1), 57–59.
- Vaismoradi M., & Jones J., & Turunen H., & Snelgrove S. (2016). Theme development in qualitative content analysis and thematic analysis. *Journal of Nursing Education and Practice*, 6(5), 100–110. <https://doi.org/10.5430/jnep.v6n5p100>
- Walsh, K. (2012). Quantitative vs qualitative research: A false dichotomy. *Journal of Research in Nursing*, 17(1), 9–11. <https://doi-org.lib.pepperdine.edu/10.1177/1744987111432053>
- Weiss, T., & Berger, R. (2010). *Posttraumatic growth and culturally competent practice: Lessons learned from around the globe*. Wiley.
- Westervelt, E. (2021, June 24). *Cops say low morale and department scrutiny are driving*



- them away from the job*. NPR. <https://www.npr.org/2021/06/24/1009578809/cops-say-low-morale-and-department-scrutiny-are-driving-them-away-from-the-job>.
- Westphal, M., & Bonanno, G. A. (2007). Posttraumatic growth and resilience to trauma: Different sides of the same coin or different coins? *Applied Psychology: An International Review*, 56(3), 417–427. <https://doi-org.lib.pepperdine.edu/10.1111/j.1464-0597.2007.00298.x>
- Whittemore, R. & Knafl, K. (2005), The integrative review: Updated methodology. *Journal of Advanced Nursing*, 52(5), 546–553. <https://doi-org.lib.pepperdine.edu/10.1111/j.1365-2648.2005.03621.x>
- Wills, J. L. (2018). *Personality and mental health support effects on occupational trauma and posttraumatic growth in police officers* (Publication No. 10807834) [Doctoral Dissertation, The University of Montana]. ProQuest Dissertations and Theses Global.
- Wilson, B., Morris, B. A., & Chambers, S. (2014). A structural equation model of posttraumatic growth after prostate cancer. *Psycho-Oncology*, 23(11), 1212–1219. <https://doi.org/10.1002/pon.3546>
- Veevers, J. E. (1991). Traumas versus stressors: A paradigm of positive versus negative divorce outcomes. *Journal of Divorce & Remarriage*, 15(1–2), 99–126. [https://doi-org.lib.pepperdine.edu/10.1300/J087v15n01\\_07](https://doi-org.lib.pepperdine.edu/10.1300/J087v15n01_07)
- Xu, J., & Wu, W. (2014). Work satisfaction and posttraumatic growth 1 year after the 2008 Wenchuan earthquake: The perceived stress as a moderating factor. *Archives of Psychiatric Nursing*, 28(3), 206–211. <https://doi-org.lib.pepperdine.edu/10.1016/j.apnu.2013.12.006>
- Yan, S., Yang, J., Ye, M., Chen, S., Xie, C., Huang, J., & Liu, H. (2021). Post-traumatic growth

- and related influencing factors in discharged COVID-19 patients: A cross-sectional study. *Frontiers in Psychology*, *12*, 1–9. <https://doi.org/10.3389/fpsyg.2021.658307>
- Yu, Y., Peng, L., Chen, L., Long, L., He, W., Li, M., & Wang, T. (2014). Resilience and social support promote posttraumatic growth of women with infertility: The mediating role of positive coping. *Psychiatry research*, *215*(2), 401–405.  
<https://doi.org/10.1016/j.psychres.2013.10.032>
- Zięba, M., Wiecheć K, Biegańska-Banaś J, & Mieleśczenko-Kowszewicz, W. (2019). Coexistence of post-traumatic growth and post-traumatic depreciation in the aftermath of trauma: Qualitative and quantitative narrative analysis. *Frontiers in Psychology*, *10*, 1–5.  
<https://doi.org/10.3389/fpsyg.2019.00687>
- Zoellner, T., & Maercker, A. (2006). Posttraumatic growth in clinical psychology: A critical review and introduction of a two-component model. *Clinical Psychology Review*, *26*(5), 626–653. <https://doi-org.lib.pepperdine.edu/10.1016/j.cpr.2006.01.008>

## APPENDIX A

### Table of Included Studies

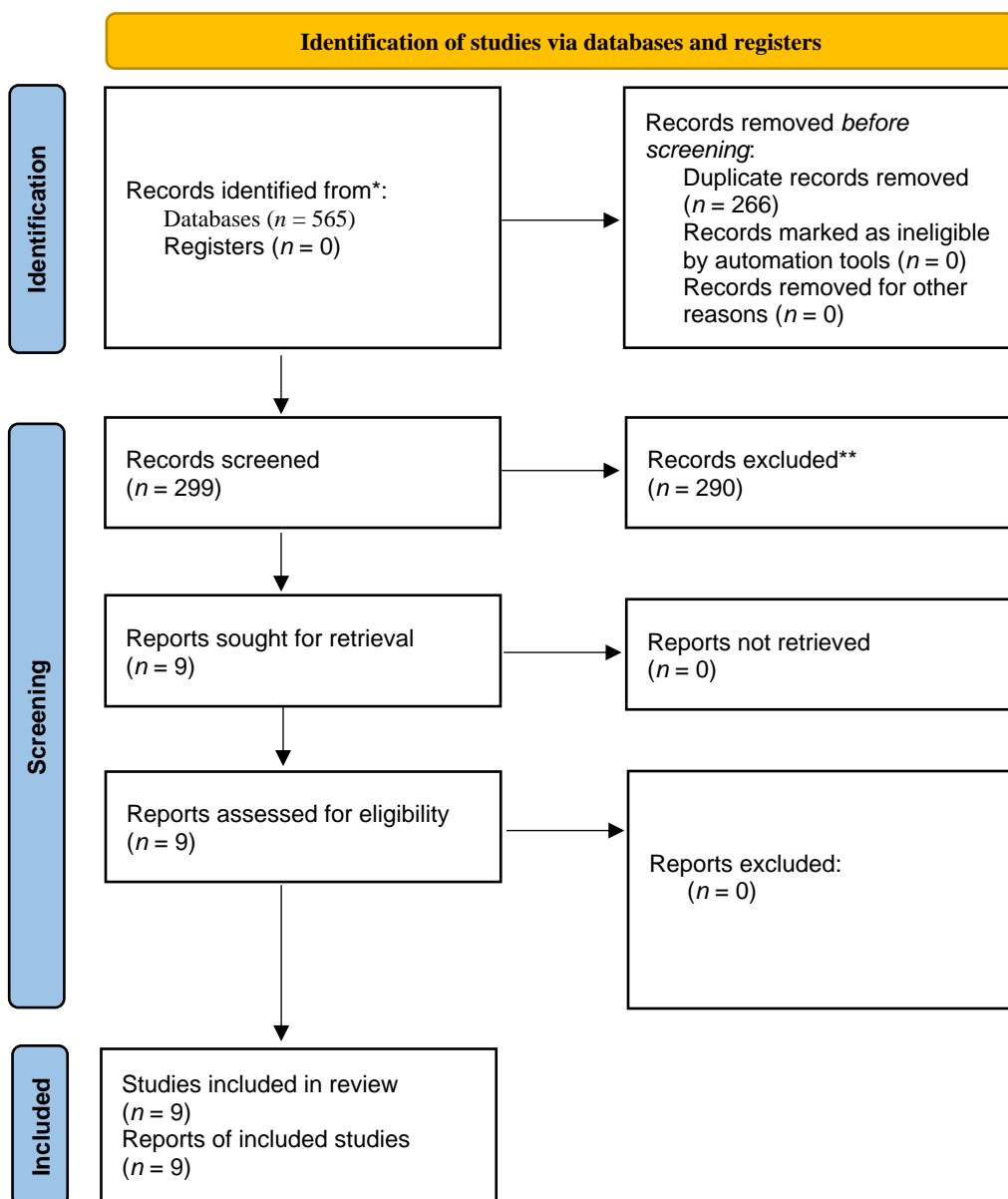
	Year	Design	Sample Population	Sample Size	Reference	Research Question 1
1	2018	Empirical, Quantitative	Police Officers	113	Leppma, M., Mnatsakanova, A., Sarkisian, K., Scott, O., Adjeroh, L., Andrew, M. E., Violanti, J. M., & McCanlies, E. C. (2018). Stressful life events and posttraumatic growth among police officers: A cross-sectional study. <i>Stress and Health: Journal of the International Society for the Investigation of Stress</i> , 34(1), 175—186. <a href="https://doi-org.lib.pepperdine.edu/10.1002/smi.2772">https://doi-org.lib.pepperdine.edu/10.1002/smi.2772</a>	yes
2	2019	Empirical, Quantitative	Police Officers	193	Chopko, B. A., Palmieri, P. A., & Adams, R. E. (2019). Posttraumatic growth in relation to the frequency and severity of traumatic experiences among police officers in small to midsize departments. <i>Journal of Interpersonal Violence</i> , 34(6), 1247—1260. <a href="https://doi-org.lib.pepperdine.edu/10.1177/0886260516651089">https://doi-org.lib.pepperdine.edu/10.1177/0886260516651089</a>	yes
3	2014	Empirical, Quantitative	Police Officers	114	McCanlies, E. C., Mnatsakanova, A., Andrew, M. E., Burchfiel, C. M., & Violanti, J. M. (2014). Positive psychological factors are associated with lower PTSD symptoms among police officers: Post Hurricane Katrina. <i>Stress and Health: Journal of the International Society for the Investigation of Stress</i> , 30(5), 405—415. <a href="https://doi-org.lib.pepperdine.edu/10.1002/smi.2615">https://doi-org.lib.pepperdine.edu/10.1002/smi.2615</a>	yes
4	2018	Empirical, Quantitative	Police Officers	193	Chopko, B. A., Palmieri, P. A., & Adams, R. E. (2018). Relationships among traumatic experiences, PTSD, and posttraumatic growth for police officers: A path analysis. <i>Psychological Trauma: Theory, Research, Practice, and Policy</i> , 10(2), 183—189. <a href="https://doi-org.lib.pepperdine.edu/10.1037/tra0000261.supp">https://doi-org.lib.pepperdine.edu/10.1037/tra0000261.supp</a> (Supplemental)	yes

	Year	Design	Sample Population	Sample Size	Reference	Research Question 1
5	2009	Empirical, Quantitative	First responders & Police Officers	183	Chopko, B. A., & Schwartz, R. C. (2009). The relation between mindfulness and posttraumatic growth: A study of first responders to trauma-inducing incidents. <i>Journal of Mental Health Counseling</i> , 31(4), 363–376. <a href="https://doi-org.lib.pepperdine.edu/10.17744/mehc.31.4.9w6lhk4v66423385">https://doi-org.lib.pepperdine.edu/10.17744/mehc.31.4.9w6lhk4v66423385</a>	yes
6	2007	Empirical, Quantitative	Police Officers	372	Paton, D., & Burke, K. J. (2007). Personal and organizational predictors of posttraumatic adaptation and growth in police officers. <i>Australasian Journal of Disaster and Trauma Studies</i> , 2007(1). <a href="https://search-ebscohost-com.lib.pepperdine.edu/login.aspx?direct=true&amp;db=psych&amp;AN=2008-10866-005&amp;login.asp%3fcustid%3ds8480238&amp;site=ehost-live&amp;scope=site">https://search-ebscohost-com.lib.pepperdine.edu/login.aspx?direct=true&amp;db=psych&amp;AN=2008-10866-005&amp;login.asp%3fcustid%3ds8480238&amp;site=ehost-live&amp;scope=site</a> .	yes
7	2015	Qualitative, Book Chapter	Police Officers	0	Joseph, S., Murphy, D., & Regel, S. (2015). Post-traumatic growth in police officers: Guidelines for facilitating post-traumatic growth. In S. M. F. Clevenger, L. Miller, B. A. Moore, & A. Freeman (Eds.), <i>Behind the badge: A psychological treatment handbook for law enforcement officers</i> . (pp. 256—268). Routledge/Taylor & Francis Group.	yes
8	2018	Empirical, Quantitative	Police Officers	109	Wills, J. L. (2018). Personality and mental health support effects on occupational trauma and posttraumatic growth in police officers [ProQuest Information & Learning]. In <i>Dissertation Abstracts International: Section B: The Sciences and Engineering</i> (Vol. 79, Issue 9–B(E)).	yes

	Year	Design	Sample Population	Sample Size	Reference	Research Question 1
9	2018	Empirical, Quantitative	Police Officers	17	Guerrero, A. (2018). Post-traumatic growth and coping style in law enforcement officers [ProQuest Information & Learning]. In <i>Dissertation Abstracts International: Section B: The Sciences and Engineering</i> (Vol. 79, Issue 3–B(E)).	yes

## APPENDIX B

## PRISMA Flow Diagram



*Note.* From “The prisma 2020 statement: An updated guideline for reporting systematic reviews,” by M. J. Page, J. E. McKenzie, P. M. Bossuyt, I. Boutron, T. C. Hoffmann, C. D. Mulrow, L. Shamseer, J. M. Tetzlaff, E. A. Akl, S. E. Brennan, R. Chou, J. Glanville, J. M. Grimshaw, A. Hróbjartsson, M. M. Lalu, T. Li, E. W. Loder, E. Mayo-Wilson, S. McDonald, L. A. McGuinness, L. A. Stewart, J. Thomas, A. C. Tricco, V. Welch, P. Whiting, & D Whiting. *Journal of Clinical Epidemiology*, 134, pp. 178–189. (<https://doi.org/10.1016/j.jclinepi.2021.03.001>). Copyright 2020 by The PRISMA Statement



## APPENDIX C

## Sample Quality Appraisal Form

### Individual Study Quality Assessment

**Author(s) and Year:** \_\_\_\_\_ **Study ID#** \_\_\_\_\_

**Methodology:**                      Quantitative                      Qualitative                      Mixed Methods

**Specific Design/Inquiry Approach:** \_\_\_\_\_

**RATING SCALE:** Strong=3    Good/Adequate=2    Weak=1    Missing=0    N/A

1. **Strength of Literature Foundation and Rationale for Study:** \_\_\_\_\_  
(CONSIDERATIONS: current and relevant references, background literature sufficiently comprehensive, Need/Rationale for study clearly stated)
2. **Clarity and specificity of Research Aims/Objectives/Questions:** \_\_\_\_\_
3. **Quality of research design or methodological approach:** \_\_\_\_\_  
(CONSIDERATIONS: provides rationale for design chosen, appropriateness for research questions, clear description of design and methodological approach, strength/quality of design characteristics utilized (e.g., randomization, blinding, triangulation, etc.), potential confounds identified and addressed in some way, consideration of internal, external, and ecological validity in design, reliability, specific design-based criteria that explains how bias is accounted for)
4. **Appropriateness of the Recruitment Strategy:** \_\_\_\_\_  
(CONSIDERATIONS: explanation of how the participants were selected, appropriateness of the selected population to provide access to the type of knowledge sought by the study)
5. **Sample Selection and Characteristics:** \_\_\_\_\_  
(CONSIDERATIONS: adequacy of sample size in context of design, detailed description of sample characteristics, adequacy of sample characteristics and representativeness in the context of research aims, detailed description of recruitment and selection of participants, extent of selection or sample bias)
6. **Measures / Data Collection Tools:** \_\_\_\_\_  
(CONSIDERATIONS: rationale for selection, appropriateness for assessing variables, development of new tool/measure/questions clearly described if relevant, psychometric properties (reliability, validity, utility) described, appropriateness of qualitative data collection tool/measure, adequacy of psychometric properties, sufficiently comprehensive)
7. **Data Collection:** \_\_\_\_\_  
(CONSIDERATIONS: data collection procedures clearly described, intervention strategies and implementation described in detail, quality of data collected, attrition)
8. **Analysis of Data:** \_\_\_\_\_  
(CONSIDERATIONS: appropriateness of analysis for research questions and type of data, power and effect size presented for mixed methods, results presented clearly and comprehensively)
9. **Discussion of Study Limitations:** \_\_\_\_\_  
(CONSIDERATIONS: identifies and discusses limitations in the context of design/strategy utilized (e.g., various forms of bias, internal validity, external validity (generalizability), ecological validity, reliability, transferability, credibility, transparency), comprehensiveness of limitations identified)
10. **Consideration of culture and diversity:** \_\_\_\_\_

(CONSIDERATIONS: attention to diversity within sample, includes culturally appropriate methods and tools, avoids biased language, uses appropriate terminology, etc.)

11. **OVERALL RATING MEAN:** \_\_\_\_\_

12. <b>OVERALL RATING:</b>	EXEMPLARY (all “3”s)	STRONG (mostly “3”s)	GOOD/ADEQUATE (mostly “2”s)	WEAK (mostly “1”s)
----------------------------	-------------------------	-------------------------	--------------------------------	-----------------------

## APPENDIX D

### IRB Non-Human Subjects Approval

June 16, 2020

Protocol #: **061620**

Project Title: A Systematic Review of the Literature on Post-Traumatic Growth in Police Officers after Exposure to Potentially Traumatic Events

Dear Michael:

Thank you for submitting a “GPS IRB Non-Human Subjects Notification Form” for ***A Systematic Review of the Literature on Post-Traumatic Growth in Police Officers after Exposure to Potentially Traumatic Events*** project to Pepperdine University’s Institutional Review Board (IRB) for review. The IRB has reviewed your submitted form and all ancillary materials. Upon review, the IRB has determined that the above titled project meets the requirements for *non-human subject research* under the federal regulations 45 CFR 46.101 that govern the protection of human subjects.

Your research must be conducted according to the form that was submitted to the IRB. If changes to the approved project occur, you will be required to submit *either* a new “GPS IRB Non-Human Subjects Notification Form” or an IRB application via the eProtocol system (<http://irb.pepperdine.edu>) to the Institutional Review Board.

A goal of the IRB is to prevent negative occurrences during any research study. However, despite our best intent, unforeseen circumstances or events may arise during the research. If an unexpected situation or adverse event happens during your investigation, please notify the IRB as soon as possible. We will ask for a complete explanation of the event and your response. Other actions also may be required depending on the nature of the event. Details regarding the timeframe in which adverse events must be reported to the IRB and documenting the adverse event can be found in the *Pepperdine University Protection of Human Participants in Research: Policies and Procedures Manual* at <https://community.pepperdine.edu/irb/policies/>.

Please refer to the protocol number denoted above in all further communication or correspondence related to this approval.

On behalf of the IRB, we wish you success in this scholarly pursuit.

Sincerely,

Institutional Review Board (IRB)  
Pepperdine University

cc: Mrs. Katy Carr, Assistant Provost for Research  
Dr. Judy Ho, Graduate School of Education and Psychology IRB Chair