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The Relationship Between Programming After Critical Incidents, Shootings, and Resilience in Police

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Abstract

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by

Michelle Vincent

MACP, Yorkville University, 2016

BS, Laurentian University, 1993

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Forensic Psychology-Crisis Response

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Abstract

The purpose of this study was to examine whether there was a relationship between resilience, posttraumatic growth, and reintegration programming after a critical incident and/or line of duty shooting through the cognitive, self-efficacy and resiliency theoretical lenses. The research aimed to determine if police officers, who participated in reintegration programming, specifically in this study, Edmonton Police's Reintegration After Critical Incident programming, produced higher scores in resiliency as measured on the Connor-Davidson Resilience Scale (CD-RISC) and posttraumatic growth, as measured on the Post Traumatic Growth Inventory scale (PTGI), with Canadian police officers compared to police officers who do not participate in this programming. A total of 68 participants were assigned to each group; one group of 34 who had participated in Reintegration After Critical Incident programming subsequent to their critical incident and one group of 34 who did not participate in Reintegration After Critical Incident programming subsequent to their critical incident. Using a comparative design, two separate One Way ANOVAs, determined that there was statistical significance in the relationship between resilience and participation in Reintegration After Critical Incident programming. This research determined there was no statistical significance between posttraumatic growth and Reintegration After Critical Incident programming. Implications for positive social change are that Reintegration After Critical Incident programming may prevent serious mental health issues through higher resilience in police officers after experiencing a critical incident and/or line of duty shooting should this programming be implemented in policing organizations.

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Dedication

I wish to dedicate this research document relating to essential mental health components, to all of the first responders and uniform personnel in the world who have served, are still serving and are inspired to serve their communities. You are our true heroes. Without you, what would our community look like?

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Chapter 1: Introduction to the Study

Police officers encounter critical incidents daily, and they are required to process their experience, predisposing them to mental health issues such as anxiety, depression, and posttraumatic stress symptoms, which, if untreated, can lead to serious mental health issues such as posttraumatic stress disorder (Arble et al., 2017). The Canadian Journal of Psychiatry statistics state that police officers have a 50.2% chance of experiencing mental health issues as a result of the critical incidents they attend compared to the general population who have a 10.1% chance (Carleton et al., 2019). Some police services provide mandatory programming after their police officers have experienced what they consider to be a critical incident, such as a line of duty shooting. In this study an officer in a line of duty shooting is any police officer involved in an incident in which a firearm was produced and/or used. The police officer does not have to be the one who produced/used the firearm and may have been in the immediate area at the time of the incident. Many police services provide resources and support; however, there might not be mandatory programming to ensure the mental wellbeing of their officers after a critical incident.

In this quantitative study, resilience was explored, as measured on the Connor-Davidson Resilience Scale (Connor & Davidson, 2003), and posttraumatic growth, as measured on the Post Traumatic Growth Inventory scale (Tedeschi & Calhoun, 2017), with police officers who are mandated to complete a specific program, Reintegration After Critical Incident, compared to police officers who do not have this mandated programming in their police service. It was anticipated the results would show that those police officers who attend Reintegration After Critical Incident programming would show greater resilience and posttraumatic growth (PTG) scores than officers who do not attend Reintegration After Critical Incident programming.

This research contributed to scholarly literature in understanding the relationship between mandatory program attendance in the Reintegration After Critical Incident program after a critical incident and/or line of duty shooting involving police officers, resiliency, and PTG. Police recruits' attendance in certain programming has been shown to increase resiliency; however, this is prior to deployment and a gap in literature exists in programming after critical incidents (McCraty et al., 2014; Shakespeare-Finch et al., 2014). Preventing serious mental health trauma such as PTSD in police officers after they have experienced a critical incident and/or a line of duty shooting is beneficial to the community, the police officer, their family, and the organization (Kelty & Gordon,2015; Kilpatrick et al., 2013; Klose & Mooney, 2018). Greater detail related to the background and literature review is discussed in Chapter 2.

Background of the Study

Police often experience traumatic or critical incidents while in the execution of their duties (Arble et al., 2017; Chopko et al., 2018). Prevalence of PTSD amongst police officers is thought to be 13% to 21% higher than in the civilian population (McCanlie et al., 2014). Serious mental health issues affect 44.5% of public safety personnel (PSP), police being considered PSP (Carleton et al., 2020). This number alone is important to consider when the debilitating effects of this mental health disorder have the potential to remove 21% of police officers from active duty to receive treatment (Chopko et al., 2018). In order to work through critical incidents as previously described in a healthy manner, Arble et al. (2017) explained the importance of programming for police officers to support the processing of these events. Researchers have found that programming supports reframing of beliefs that may come from critical incidents such as a line of duty shooting, thereby reducing the likelihood of maladaptive symptoms that contribute to serious mental health issues such as PTSD (Arble et al., 2017). Reframing

thinking, a cognitive process, along with behavioral execution and cognitive adaptation, can be one way of supporting this process, and the Reintegration After Critical Incident program purports to provide that process (Arble et al., 2017; Chopko et al., 2018; Papazoglou & Andersen, 2014; Taylor, 1983). Developing or enhancing self-efficacy is another way to promote resilience and PTG through the attendance of the Reintegration After Critical Incident program (Bandura, 1986; Klose & Mooney, 2018). Although there are preventative mental health programs implemented at the recruitment level in policing that have demonstrated success in short term studies (Arble et al., 2017; Papazoglou & Andersen, 2014; Shakespeare-Finch et al., 2014), research on the effects of mandatory programming after critical incidents in Canadian police officers related to resiliency do not appear to have taken place (McCreary et al., 2017). Since resiliency has been found to be a protective factor when studied in relation to acquiring PTSD as a result of critical incidents (McCanlies et al., 2014), a study of mandatory attendance to Reintegration After Critical Incident programming after a critical incident and/or line of duty shooting, resilience and PTG may provide an opportunity for other policing organizations to implement this program (Chopko et al., 2018).

The research objectives were to identify the value of mandatory programming, specifically the Reintegration After Critical Incident program after critical incidents in policing, that have been shown to contribute negatively to the mental health of those police officers involved (Arble et al., 2017; Carleton et al., 2018; Chopko, Palmieri, & Adams, 2018; Klose & Mooney, 2018). Identifying a relationship between Reintegration After Critical Incident programming and resilience as well as PTG may provide evidence-based research on potential resources for police officers involved in critical incidents should positive results be found or inspire future research on other potentially valuable resources for police officers. Adding to current literature and informing police organizations of the value of this resource

available to them in support of their police officers maintaining optimal mental health is key, as well as informing the value of preventative programming in this profession.

Problem Statement

Police often experience traumatic or critical incidents while in the execution of their duties (Arble et al., 2017; Chopko et al., 2018). Statistics show that 30% of police officers are likely to experience PTSD compared to 2% of the general population and 32% show mental health injury rates of 32% with major depressive disorder compared to 7% of the general population (Carleton et al., 2018). Exposure to critical incidents is often believed to be the cause of serious mental health issues amongst police officers and these statistics support this finding (Carleton et al., 2018). The definition of a critical incident for the purpose of this study is any incident perceived as an exposure to an event whereby direct or indirect experiences of actual or threatened death, serious injury, or sexual violence and/or an incident whereby police were involved in a line of duty shooting (Klose & Mooney, 2018). PTSD is defined by Kilpatrick et al. (2013) as exposure to a/or some traumatic events whereby persons experience symptoms specifically from various categories defined in the DSM V ranging from recurrent memories to irritable and aggressive behavior. Prior to being diagnosed with PTSD, the person would have experienced what would be identified as posttraumatic stress symptoms, which if not diminished after a month, might develop into significant mental health issues including PTSD (Kilpatrick et al., 2013). Although it is not known why some people who have posttraumatic stress, distress, or symptoms develop PTSD, it is believed that resilience and PTG may play a role (Galatzer-Levy et al., 2013; Papazoglou & Andersen, 2014; Sollie et al., 2017;). Various supports to lower the instance and likelihood of PTSD (Kelty & Gordon, 2015) are available to police officers who experience posttraumatic distress or symptoms; however, these supports vary from organization to organization.

Perception of what constitutes supportive and non-supportive assistance may differ among police officers (McCanlies et al., 2014). Evans et al. (2013) found that police officers were more likely to identify listening nonjudgmentally as most supportive to their experience with peers. Some organizations, specifically the Edmonton Police Service, as well as some detachments of the Royal Canadian Mounted Police Service (RCMP), have implemented a program with mandatory attendance named Reintegration After a Critical Incident after a line of duty shooting (Klose & Mooney, 2018).

How the traumatic or critical incidents and support are processed by police officers resulting in PTG and/or resiliency has been explored by Chopko et al. (2018) and Galazer-Levy et al. (2013). However, researchers have not explored whether attending programming, specifically, Reintegration After a Critical Incident affects resilience and/or PTG in police officers after experiencing a critical incident and/or a line of duty shooting, compared to police officers who do not attend such programming. The definition of resiliency as defined by Fletcher and Sarkar (2013) is the ability to experience positive adaptation after adversity. PTG is defined by Calhoun and Tedeschi (2004) as an experience of positive change or growth in one's life as a result of a traumatic incident. These authors also noted the need for future studies, including further investigation into the level of trauma and PTG as well as subsequent support available for those who experienced the trauma and its effects.

Purpose of the Study

Mandatory programming in this study refers to the Edmonton Police Services Reintegration After Critical Incident program (Klose & Mooney, 2018; Papazoglou & Andersen, 2014). The purpose of this study was to identify whether a relationship exists between attending such a program, resilience, and PTG among Canadian police officers who have been involved in a critical incident as well as any incident whereby a firearm has been involved and "used" in the line of duty. Factors such as attendance

to incidents, which may cause posttraumatic distress or symptoms (McCanlies et al., 2014), may not be avoided; however, supporting resilience and PTG through mandatory attendance in programming may be worthy of research as a gap in this area exists (Bernier, 2018; McCreary et al., 2017; Park et al., 2018).

Research Questions and Hypotheses

Research Question 1 (RQ1): Do police officers in organizations who attend the Reintegration After a Critical Incident program after a critical incident and/or line of duty shooting report higher resilience scores, as measured by the Connor-Davidson Resilience Scale CD-RISC, compared to police officers in organizations who do not administer the Reintegration After a Critical Incident program?

$H_0 1$: Police officers in organizations who attend the Reintegration After a Critical Incident program after a critical incident and/or line of duty shooting do not report higher resilience scores, as measured by the Connor-Davidson Resilience Scale, compared to police officers in organizations who do not administer the Reintegration After a Critical Incident program.

$H_a 1$: Police officers in organizations who attend the Reintegration After a Critical Incident program after a critical incident and/or line of duty shooting do report higher resilience scores, as measured by the Connor-Davidson Resilience Scale, compared to police officers in organizations who do not administer the Reintegration After a Critical Incident program.

Research Question 2 (RQ2): Do police officers in organizations who attend the Reintegration After a Critical Incident program after a critical incident and/or line of duty shooting report higher PTG scores, as measured by the Post Traumatic Growth Inventory scale, compared to police officers in organizations who do not administer the Reintegration After a Critical Incident program?

$H_0$2: Police officers in organizations who attend the Reintegration After a Critical Incident program after a critical incident and/or line of duty shooting do not report higher scores on the Post Traumatic Growth Inventory scale compared to police officers in organizations who do not administer the Reintegration After a Critical Incident program.

H_a2: Police officers in organizations who attend the Reintegration After a Critical Incident program after a critical incident and/or a line of duty shooting do report higher scores on the Post Traumatic Growth Inventory scale compared to police officers in organizations who do not administer the Reintegration After a Critical Incident program.

Theoretical Foundation/Conceptual Framework

According to Taylor's (1983) cognitive adaptation theory, when individuals are exposed to traumatic or critical events, they experience a cognitive adaptation that consists of three steps. The first step involves finding meaning in the experience, which in the case of the police officer, likely means a traumatic or critical incident line of duty shooting and finding meaning from that incident (Taylor, 1983). The second step involves the perception of regaining control or mastery of one's life experience, as when one is thrust into a traumatic or critical incident; the first issue becomes a loss of control, whether it be for the police officer or more often the people the officers are dealing with, in this case, a shooting (Taylor, 1983). The sense of establishing this control is essential in regaining grounding in one's world where it may have been perceptually lost even if for a moment (Thornton & Herndon, 2016; Taylor, 1983). The third step is to review the experience and notice where the individual was successful in order to support self-confidence and self-efficacy for possible future traumatic incidents (Bandura, 1983; Taylor, 1983). This third step includes the experience of resiliency and PTG (Taylor, 1983). Cognitive adaptation theory supports the hypothesized relationship between mandatory attendance in

Reintegration After Critical Incident programming after an in the line of duty shooting and resiliency and PTG in police officers from a cognitive adaptation processing perspective (Taylor, 1983).

Another overlapping and applicable theory is that of self-efficacy developed by Bandura (1977, 1986). Bandura (1986) explained how self-efficacy involves a process of determining through self-reflection whether one is capable or not in executing a particular task. Emotional aspects including fear, whether it be anticipatory or expectant, are related to self-efficacy in that if fear is anticipated, such as the police officer anticipates being afraid of the possibility being having to deal with a similar critical incident or of shooting their firearm, the likelihood that fear will interfere with their ability to execute their duties as a police officer in a similar instance is low when their self-efficacy is high (Bandura, 1983). Whereas when fear is expected, depending on whether the police officer perceives themselves as self-efficacious is likely to determine their ability to manage their critical incident or effectively executing a shooting incident (Bandura, 1983). Ensuring police officers who have experienced a critical incident and/or line of duty shooting return to work with a high sense of self-efficacy through a program such as Reintegration After a Critical Incident may support success in future incidents, increase resilience and PTG, and reduce the likelihood of that officer developing a serious operational stress injury as a result according to this theory (Bandura, 1986; Klose & Mooney, 2018; Sollie et al., 2017).

Nature of the Study

The nature of the study was a quantitative methodology, specifically a comparative, post-test only design. The independent variable is programming either Reintegration After a Critical Incident administered programming to Canadian police officers who have been involved in any incident whereby a firearm has been involved and deployed in the line of duty through the organization or no programming administered through the organization. The survey method will be used to collect data on

the dependent variables of resiliency and PTG as measured by the CD-RISC (Campbell-Sills & Stein, 2007) and PTGI (Arpawong et al., 2016; Campbell-Sills & Stein, 2007), respectively.

In this study, police officers having experienced a line of duty shooting were identified as having completed Reintegration After a Critical Incident programming or not having completed this programming. Each group were asked to complete both the CD-RISC and the PTGI after their critical incident whether it be recent or at some point in their past during their career as police officers through the completion of a survey sent to the police officers when their organizations grant permission. Data from these measures was used to compute and analyze to determine statistical significance in the relationship, if any, between police officers who do or do not attend Reintegration After a Critical Incident program after a critical incident, resiliency, and PTG.

Definitions

Line of duty shooting: an incident with police whereby the involvement of a firearm was used, not including the euthanizing of an animal (Klose & Mooney, 2018).

Firearm used in a line of duty: any incident whereby police attended the scene in any manner and a firearm was drawn and/or pointed by police or a community member during that incident (Klose & Mooney, 2018).

Use of a firearm: includes any incident whereby a firearm was drawn by police or a member of the community with intent to cause harm (Klose & Mooney, 2018).

Critical incident: Alternate wording is traumatic incident used interchangeably meaning an incident whereby death, sexual assault, and/or serious harm may be the result (Carleton et al., 2019).

Reintegration After Critical Incident Program: A program developed by Edmonton Police Service that has mandatory attendance for police officers who have been involved in a line of duty shooting as described above prior to returning to their posted position (Klose & Mooney, 2018).

Resiliency: the ability to experience positive adaptation after adversity (Fletcher & Sakar, 2013).

Posttraumatic growth (PTG): an experience of positive change or growth in one's life as a result of a traumatic incident (Calhoun & Tedeschi, 2004).

Posttraumatic Stress Disorder (PTSD): exposure to a traumatic event or events whereby persons experience symptoms specifically from various categories defined in the DSM V ranging from recurrent memories to irritable and aggressive behavior (Kilpatrick et al., 2013).

Mental health issue: includes PTSD, major depression, anxiety, panic disorder, or any other experience that is believed to impede normal mental functioning (Carleton et al, 2019).

Assumptions

The first assumption to be made was the police officers involved in this study were not actively experiencing PTSD prior to the critical incident and were not in crisis prior to the critical incident. The second assumption was, in order to function effectively in an instance as a frontline duty police officer, mental wellbeing is necessary (Papazoglou & Andersen, 2014).

Scope and Delimitations

Although there may be many aspects that are derived from programming, such as the Reintegration After a Critical Incident, resilience, and PTG, are those that this research will focus on as they are related to the static mental health wellbeing of police officers (Chopko et al., 2018; McCraty & Atkinson, 2012). There are various programs specifically for first responders that will not be included in this study such as similar reintegration programs that do not go into depth and are less comprehensive

than Reintegration After a Critical Incident that will not be explored as they have not been implemented in multiple Canadian policing organizations (Klose & Mooney, 2018). Theories that are relevant and were not applied were the resilience theory and constructivist grounded theory that infuse a complexity not necessary for the conceptualization of this study (Greene et al., 2004; Lauridsen & Higginbottom, 2014). Participants of the study were limited to Canadian police officers however the findings may be generalizable to those working a similar demographic internationally.

<div align="center">**Limitations**</div>

Limitations included no base level was obtained from the participants on resiliency and PTG to determine true scores of the participants of the scales being measured. The demographics of the participants from specific police organizations in the study which may have a higher instance of critical incidents/shootings and/or traumatic incidents may made it a challenge to generalize to those policing in quieter communities. Not all organizations have the financial or membership resources and/or capacity to implement not only the Reintegration After a Critical Incident program but other programs which may impact the overall wellness of the officers involved in this study.

These limitations were addressed using the assumption that regardless of the community the police officer serves and the training they receive, a line of duty shooting was considered a critical incident (Carleton et al., 2019). How the organization deals with this type of critical incident whereby death is a potential outcome, with programming Reintegration After a Critical Incident or no programming was the measure, and this may be determined without a base measure within any community. While this study may not have had any impact on current organizational limitations such as financial and/or manpower, the results may be used to inform urgency or not of such programming.

Significance of the Study

Awareness of mental health issues in police officers as a result of the traumatic or critical incidents and/or line of duty shootings they attend and must process is important from a business and organizational standpoint (Arble et al., 2017). These mental health issues include major depression, anxiety, and PTSD and may cost the family of the officer, the organization to which the officer belongs, and the community the officer serves through their potential actions making them a probable liability (Chopko et al., 2018; Galatzer-Levy et al., 2013). The potential costs as a result of absenteeism, addictions, and other serious afflictions that may occur as a result of mental health issues can be great (Chopko et al., 2018; Galatzer-Levy et al., 2013). Organizations who are viewed as supportive of their officers by the officers themselves because of their delivery of resources after experiencing a critical incident have been deemed to be a positive factor in officer mental wellness (Evans et al., 2013).

Identifying effective programming such as Reintegration After a Critical Incident that supports the mental wellbeing through the development of resiliency and PTG after a traumatic event may provide other policing organizations who do not have the Reintegration After a Critical Incident program in place, information on how they can support their officers to reintegrate in similar instances. Providing policing organizations with resources to support their officers through traumatic incidents with an effective reintegration program may reduce officer liability issues and decrease absenteeism due to mental health issues. Future studies may be derived to explore other resources and their effects on officers that may be effective as a prevention of serious mental health issues providing further options for such organizations.

Summary and Transition

It is expected that in the lifetime career of a police officer, she or he will experience numerous events for which most people would consider to be traumatic. These traumatic events may contribute to serious mental health issues if resources to deal with a healthy reintegration back to work are not implemented. In this study, the traumatic incidents that were identified as critical incidents and/or line of duty shootings and the program associated with reintegration was Reintegration After Critical Incident.

Based on cognitive adaptation theory, the purpose of this study was to compare resiliency and PTG between police officers who have attended the Reintegration After Critical Incident program after a critical incident and/or line of duty shooting versus those officers who had not attended the Reintegration After Critical Incident after a critical incident and/or line of duty shooting. The participants included were Canadian police officers from various Canadian policing organizations. The results spoke to the value of the program and perhaps programming in general related to factors that have been shown to have a positive effect on mental wellbeing. Organizational support through the delivery of such programming has been shown to have a positive effect on mental wellbeing. Although there are limitations in this study, the overall research may fill a gap of the role of Reintegration After Critical Incident programming on resiliency and PTG levels in police officers that may reduce organizational liability and absenteeism enabling police officers to serve their communities as a result of their mental wellbeing.

In Chapter 2 research literature was reviewed that explained the relationship between resiliency, PTG, and mental wellness with police officers, as well as integrated the theories of cognitive adaptation and self-efficacy.

Chapter 2: Literature Review

Introduction

Police often experience traumatic or critical incidents while in the execution of their duties (Arble et al., 2017; Chopko et al., 2018). The definition of a critical incident for the purpose of this study is defined as an exposure to an event whereby direct or indirect experiences of actual or threatened death, serious injury, or sexual violence have occurred and any incident whereby police were involved with a line of duty shooting (Carleton, 2019). PTSD, as defined by Kilpatrick et al. (2013), is exposure to a traumatic event or events whereby persons experienced symptoms specifically from various categories defined in the DSM V ranging from recurrent memories to irritable and aggressive behavior. Prior to being diagnosed with PTSD, the person would have experienced what would be identified as posttraumatic stress symptoms, which if they had not diminished after a month, might have developed into significant mental health issues including PTSD (Kilpatrick et al., 2013; Marchand et al., 2015).

Although it is not known why some people who have posttraumatic stress, distress, or symptoms do or do not develop PTSD, it is believed that resilience and/or PTG may play a role (Chopko et al., 2018; Papazoglou & Andersen, 2014). Various supports such as programming are purported to lower the instance and likelihood of PTSD (Kelty & Gordon, 2015; Nanavaty, 2015) where available to police officers who experienced posttraumatic distress or symptoms; however, these supports vary from organization to organization. Researchers have found that perceptions of what constitutes supportive and nonsupportive assistance differs among police officers (McCanlies et al., 2014). For example, Evans et al. (2013) and Nanavaty (2015) found that police officers were more likely to identify listening nonjudgmentally as most supportive to their experience with peers. Some organizations, specifically the Edmonton Police Service, as well as some detachments of the Royal Canadian Mounted Police Service

(RCMP), implement a program with mandatory attendance when available as a result of organizational resources, named Reintegration After a Critical Incident, after a critical incident and/or line of duty shooting (Klose & Mooney, 2018).

How the traumatic or critical incidents and support were processed by police officers resulting in posttraumatic growth and/or resiliency was explored by Chopko et al. (2018) and Galazer-Levy et al. (2013). However, researchers have not explored whether attending programming, specifically Reintegration After a Critical Incident, affects resilience and/or PTG in police officers after having experienced a critical incident and/or line of duty shooting. The definition of resiliency as defined by Fletcher and Sarkar (2013) was the ability to experience positive adaptation after adversity. PTG was defined by Calhoun and Tedeschi (2004) as an experience of positive change or growth in one's life as a result of a traumatic incident. These authors also noted the need for future studies, including further investigation into the level of trauma and PTG as well as subsequent support.

Police officers were and continue to be exposed to what the general population would consider to be traumatic incidents daily in the course of their duties (Carleton et al., 2019; Violanti, 2006; Weltman et al., 2014). This exposure has been shown to influence the mental health of these police officers often causing them to become a liability on the job, and to the other extreme of being off on long term disability as a result of these traumatic experiences, to suicide. (Violanti, 2006; Weltman et al, 2014). Serious mental health issues such as depression, anxiety, posttraumatic stress injury, addictions, and suicide are tragic results that may have developed as a result of the traumatic events experienced on a regular basis as a police officer (Marchand et al., 2015; Nanavaty, 2015). Some of these issues may be inherent to this line of work, however how police officers perceive and experience these traumatic incidences as a result of the actions of the organization to which they belong may have short-term and

long-term effects (Galatzer-Levy et al., 2013; Nanavaty, 2015). Resilience and PTG are known aspects that support mentally healthy outcomes of police officers when dealing with traumatic incidents (Blackie et al., 2017; Park et al., 2018). Programs that support police officers in processing these traumatic events are thought to prevent serious mental health issues such as posttraumatic stress disorder, anxiety, depression and eventually suicide (Klose & Mooney, 2018; Thornton & Herndon, 2016).

In this study the relationship between the Reintegration After a Critical Incident program implemented by the Edmonton Police Service, resilience, and PTG of police officers within the framework of cognitive mental health was examined. Effective cognitive functioning within police officers requires the ability to have received, processed and then responded to information in intense, sometimes life-threatening situations (Taylor, 1988; Violanti et al., 2018). This cognitive functioning is key in the execution of police officers' duties supporting community safety, organizational liability and the ability to function effectively as a team member in a high-pressured environment (Violanti et al., 2018). Mental health issues may impede and interfere with this cognitive functioning and trauma is a known contributing factor to increasing serious mental health issues in police officers. Munoz et al. (2017) found that perceived control and hope were key aspects from a cognitive perspective which were interchangeably related to self-efficacy in the experience of resilience and PTG. All aspects have played a role in the perception, processing and translation of the traumatic experiences these police officers were exposed to throughout their career, (Violanti, 2006; Weltman et al., 2014).

When considering the resources available to police officers involved in critical incidents which were used interchangeably with the term traumatic events, there appeared to be few that are mandatory and that supported the police officer in relation to that incident. The Edmonton Police Service (EPS)

have further developed a program called Reintegration After Critical Incident or Long-Term Leave. In this study Reintegration After Critical Incident was explored, purporting both preventative and subsequent qualities for its police officers related to mental health (Klose & Mooney, 2018). The goal of the program is to return members to work with a sense of normalcy after having experienced an impactful incident (Klose & Mooney, 2018). Prevention of anxiety, depression and posttraumatic stress injury are included in the program while granting a reintegration component to ease transition from the critical incident back into the throws of front-line policing without adding further injury (Klose & Mooney, 2018). There did not appear to be any studies that had explored the relationship between the Reintegration After Critical Incident program, resilience and PTG.

For this study, traumatic events and critical incidents were used interchangeably and included critical incidents and/or line of duty shootings, but did not include the euthanasia of animals. It was clear that traumatic events involved a multitude of experiences defined by the police officer involved in those personally defined incidents. In limiting those to critical incidents and/or line of duty shootings, this allowed me to more effectively identify two aspects. This first aspect was the main part of the study, being whether a statistically significant relationship existed between the Reintegration After Critical Incident program, resilience and PTG. The second aspect was its impact, if any on those police officers involved in the critical incident and/or line of duty shooting.

In this chapter, literature search strategy as well as theoretical frameworks used to support the research were discussed. Literature involving the impact of traumatic experiences on police officers in relation to resilience and PTG, as well as the impact of organizational culture on the processing of traumatic events were examined. The relationship mandatory programming has in the processing of those cognitive events, resilience and post traumatic growth were also reviewed.

Literature Search Strategy

This comprehensive literature search began with a thorough and complete exploration of Walden

University's library database through Thoreau and narrowed the scope to the psychological and criminal

justice, including PsycINFO, PsycARTICLES, SAGE, Criminal Justice, ProQuest, and Science Direct.

Other databases explored were Emerald Management and Taylor & Francis databases. A search of

journal articles and other data using various search engines such as Google Scholar and Google,

exploring concepts of police and PTSD/OSI, traumatic incidents, resilience, PTG, statistics and

theoretical concepts of cognitive adaptation theory, resilience theory, and social cognitive theory were

conducted. Initial parameters of the intended literature saturation consisted of the years 2013 to 2020

with the goal of obtaining current research. These parameters were then expanded to include a more

comprehensive search from 1970 to 2013 to ensure foundational and theoretical literature was explored.

An overall Thoreau search began the literature review exploration with the terms *law

enforcement* OR *police* AND *exposure therapy* AND *peers* AND *shooting* OR *line of duty* OR *life-

threatening* to encapsulate the topic in its most general terms revealing a considerable number of results,

165768, requiring it to be narrowed down through customizing the dates of 2013-2019 and peer

reviewed only. Google Scholar was explored several times however mostly with the terms *law

enforcement* OR *police* AND *exposure therapy* AND *peers* AND *shooting* OR *line of duty* OR *life-

threatening* with a customized date range of 2013-2019, peer reviewed yielding 581 results.

Terms used initially in PsycINFO were *law enforcement* OR *police* AND *PTSD* OR *resilience*

OR *PTG,* which yielded 237 results when customized with the dates 2013-2019 and peer reviewed.

Other search terms used within PsycINFO were *law enforcement* OR *police* AND *resilience* OR

resiliency yielding 114 results when customized with the dates of 2013-2020 and peer reviewed.

PsycARTICLE when searched with the terms *law enforcement* OR *police* AND *resilience* OR *PTG* within the parameters of peer reviewed and customized dates of 2013-2020 yielded only 3 articles.

Databases such as Criminal Justice and Proquest were used to conduct this literature search using multiple combinations of wording such as *law enforcement* OR *police* AND *resilience* OR *PTSD* OR *PTG*, a customized date range of 2013-2019 in order to ensure current research and peer reviewed resulting in 252 articles. Variations of key terms used were inserted in both the Criminal Justice and ProQuest databases initiating further searches with new key terms such as *predictors mental health stigma* AND *law enforcement* OR *police* with a customized date range of 2013-2019 and peer reviewed yielded 183 results

In the multitude of key terms used throughout the literature search theoretical possibilities such as *adaptation cognitive theory* in PsycINFO with a more extensive customized date range of 1970- 2019 yielded 78 results and provided another theory to consider, *social cognitive theory* that substantiated the preceding literature analysis and review. Substantial use of the terms *resilience*, *resiliency*, *PTG* AND *law enforcement* OR *police* were also used in the various databases mentioned above.

The literature acquired in this extensive search provided further theories such as resilience theory and social cognitive theory that were originally not considered in the foundation of this study. Culture within the realm of policing prompted wording such as *stigma*, *culture* AND *police* OR *law enforcement*.

Theoretical Foundation

The theoretical foundation for this study includes cognitive adaptation theory, self-efficacy theory, and resiliency theory. While there are many other valuable and completely applicable theories, the cognitive

framework was found to be most applicable as cognition is what is used to both develop and apply

posttraumatic growth and resilience.

Resiliency Theory

Resiliency theoretical framework involves three constructs which include protective, risk and

vulnerability factors each with their own definitions (Bolton et al., 2017). This theory's primary

function is to provide a foundation through which the processing of adverse circumstances can be

evaluated from an adaptive perspective (Bolton et al., 2017). The interaction of the three constructs

along with the four distinct phases within resilience theory of: (a) confrontation of risk factors (exposure

to traumatic incidents), (b) activation of protective factors (implementation of mandatory

programming/supportive working environment), (c) interaction of protective factors (effects of

mandatory programming/supportive working environment), and (d) possible outcomes (reduced

likelihood of developing PTSD) are the basis through which this research is being conducted (Bolton et

al., 2017).

Resiliency theory was applied with a complex definition involving not only the adaptability of

the police officer but the adaptability of the police officer within the socioecological culture that police

officer is functioning within (Fletcher & Sarkar, 2013) that had to be considered especially within this

potentially culturally sensitive study. Fletcher and Sarkar (2013) argued, in defining resilience, the

culture within which the term was being considered, was key. For instance, in this study, resilience is

related to the ability of police officers to work through mental health issues that ensued as a result of

traumatic incidents and their ability to negate serious outcomes of PTSD or OSI. Considering the

cultural aspects of policing whether it be occupational or organizational as previously described by

Cordner (2017) was instrumental in defining, from a theoretical perspective, resilience (Fletcher &

Sarkar, 2013). Campbell-Sills and Stein (2007) provided a definition of resilience with two constant factors with the context of their definition of positive adaptation within adversity or in this study, what would be considered traumatic circumstances and those were hardiness and persistence. In policing, hardiness and persistence were deemed necessary factors for being effective in the execution of duties as well as in cognitively processing their experience from a mentally healthy perspective (Campbell-Sills & Stein, 2007; Fletcher & Sarkar, 2013). Paton et al. (2008) developed a theory on resiliency specific to police officers based on the ability to create meaning from traumatic events/experiences into meaningful, coherent and manageable events as a result of the police officer themselves, their organizational constructs and the platoon/team they work within. This theory postulated resilience was a combination of these aspects (Paton et al., 2008). Programming such as Reintegration After Critical Incident program after a critical incident and/or line of duty shooting may have enhanced resilience by valuing police officers within the organization through the provision of this program, creating a favorable, supportive culture and providing mental health care that specialized in the cognitive processing of the event (Evans et al., 2013; Klose & Mooney, 2018; Paton et al., 2008). This theory was supported regardless of whether resilience was defined as a trait or a process (Fletcher & Sarkar, 2013; Paton et al., 2008).

Self-Efficacy Theory

The theory of self-efficacy as postulated by Bandura (1977) was found to be interlaced with theoretical approaches involving resilience (Paton et al., 2008) and cognitive adaptation (Taylor, 1983) so it will be explored in tandem. Self-efficacy is defined by Bandura (1977) as one's belief in one's ability to organize and execute ways of doing things in order to attain particular goals. While Bandura (1977) postulated being self-efficacious was derived from personal/professional accomplishments,

vicarious experiences, physiological conditions and persuasion, he also believed the cognitive

processing of those aspects was key to the outcome of high self-efficacy or low self-efficacy.

Cognitive Adaptation Theory

Taylor (1983) defined cognitive adaptation as the ability to process events that may have been

negative or traumatic into meaningful experiences which incorporated three themes that were

fundamental. Those themes included searching for meanings in the experience, the opportunity to regain

mastery over one's life, and the building of one's self-esteem through training and other bettering of

oneself (Taylor, 1983). The theory of cognitive adaptation overlaps with the theory of self-efficacy in

that each construct requires the other to sustain a positive outcome. For example, in order to have

experienced mastery over one's life and/or to self-enhance it would be plausible they would have had

higher self-efficacy, the belief they could have achieved this (Bandura, 1977).

All three theories overlap in concept and are required for each concept to be achieved.

Resilience theory, which postulates that the ability to create meaningful, coherent, and manageable

experiences from police officers' traumatic events would have required those police officers to first be

able to have had an adaptive method of cognitively processing the experiences (Paton et al., 2008;

Taylor, 1983). In order to have been successful in processing the traumatic events from a negative to a

positive through cognitive adaptation, the police officers, it is suggested, likely had higher levels of self-

efficacy throughout their processing (Bandura, 1977; Taylor, 1988). Therefore, in order to have created

an environment organizationally, team-wise and personally that induced high levels of resilience,

programming such as Reintegration After Critical Incident provides its police officers with an

environment that fosters positive cognitive adaption. It may also provide favorable circumstances of

further training in support of the enhancement of self-efficacy construct (Bandura, 1977; Paton et al,

2008; Taylor, 1983). Having encapsulated the theories of cognitive adaptation, self-efficacy, and resiliency as a foundation through which Reintegration After Critical Incident may support police officers after a critical incident and/or line of duty shooting in reframing their traumatic experience, may provide police officers the sense of being valued as members within their organization, promoting and furthering existing resilience and posttraumatic growth (Evans et al., 2013; Galatzer-Levy et al., 2014).

Literature Review

Traumatic Event Exposure

Traumatic event in this study is defined in two parts. The first part is what is generally considered a traumatic event in policing which is defined as an incident that, through the perception of the police officer is life-threatening, potentially life-threatening, and/or sexual violence according to American Psychological Association (2013). In this study, the traumatic event or critical incident uses the above definition and includes the involvement in any way of a line of duty shooting that does not include the euthanasia of an animal (Klose & Mooney, 2018). A general definition of traumatic incident was used in order to relate the mental health issues that may result through frequent exposure (Carleton et al., 2019).

There is no question, frequent exposure to critical incidents promotes the likelihood of posttraumatic symptoms in those police officers involved including the adrenalin-producing highs and lows as a result of the incidents police officers attend (Chopko et al., 2018). These exposures take a toll both physically and psychologically on them making them vulnerable to mental health issues (Chopko et al., 2018). However, after examining risk and protective factors, it was found that quality and depth of training as well as available resources supported predictions of a PTSD diagnosis according to Marchand et al. (2015). The availability of resources is another factor to be considered in the response

to traumatic event exposure experienced by police officers (Galatzer-Levy et al., 2013). Resource availability may be dependent on staffing, financial feasibility, and a number of other organizational factors however in the province of Ontario, Canada, a mandate for providing preventative mental health resources is in place for all policing organizations as the need to support mental health is recognized (Coroner's Inquest Police Suicide, 2019). This mandate is in effect as a result of the important role resources play on both preventative and reactive issues traumatic incidents have on police officers (Carleton et al., 2019).

Police sub-culture plays a significant role in the processing of traumatic events from how the officers perceive their experience to how the organization manages their members after the incident (Karaffa & Koch, 2016). Literature related to police culture was explored and discussed in further depth as its own entity as perception may be found to be key in most if not all aspects of this study however it was noted to have been a key factor in the perception of how those the traumatic incidents are managed by both the organization and the police officer (Cordner, 2017; Galatzer-Levy, 2013).

Other preventative factors that are believed might mitigate risk such as perceived social support and personal hardiness are found not to have any significant impact on the development of PTSD (Marchand et al., 2015), whereas Martin et al. (2009) did find significance in factors such as social support, personality trait of hardiness, and related coping mechanisms. Social support through peer support included in some resources for police officers can be key in providing a link from receiving and accepting available resources to minimizing cultural effects experienced in a policing environment (Van Hasselt et al., 2019). Resources delivered through peers are much more likely to be accepted and received (Van Hasselt et al., 2019). Preventative factors of developing PTSD and other mental health issues are identified as resilience, satisfaction with life, gratitude, as a result of a study done on

posttraumatic stress symptoms' scores related to those aforementioned factors by McCanlies et al.

(2014). Posttraumatic growth has not been found to have any significant relationship with posttraumatic

stress symptoms (PTSS) in this study (McCanlies et al., 2014). However, studies have found that scores

resulting from PTSD or PTSS have more in-depth complexity and are not necessarily related to the

amount of trauma experienced (McCanlies et al., 2014). Further to this, resources available after

experienced trauma may speak to the value the organization places on their police officers' traumatic

experiences and their related mental health post-experience (Carleton et al., 2019). Marchand et al.

(2015) explained the narrow scope of incidents may have had an impact on the lack of significance in

relationship with PTSS and PTG which would support results from Chopko et al. (2018) study's

findings that the type of traumatic exposure, direct or indirect would impact this relationship.

Resilience

The definition of resilience in this study by Fletcher and Sakar (2013) is the ability to bounce

back in the face of adversity. Resilience involves an ability to see the positive aspects in an experience

that normally would not be obvious to most people (Fletcher & Sakar, 2013). Resilience has been found

to play an integral part in the cognitive resolution of processing traumatic events as well as in self-

efficacy (Sollie, Kop, & Euwema, 2017). For example, researchers have found that resilience may

determine whether an individual is able to evolve from a critical incident with their mental health intact

or whether they develop an operational stress injury as a result, with emotion regulation being key to

that evolution (McCraty & Atkinson, 2012; Papazoglou & Andersen, 2014). Resilience has been found

to be a powerful coping mechanism for police officers dealing with trauma (Violanti et al., 2018).

Resources can also be part of the supportive development of resilience in police officers when resources

are available that, through a peer delivery may dissolve the stigma found in the cultural make-up in the

world of policing (Campeau, 2015; McCanlies et al., 2014; Sollie et al., 2017). While mindfulness practices were found to be a strong contributor in developing resilience in helpers, being engaged in a reintegration process that provides an opportunity to explore the experience through exposure therapeutic methods delivered by trusted peers was found to be especially effective as a protective factor related to developing serious mental health issues (Foureur et al., 2013; Klose & Mooney, 2018). Exposure to traumatic incidents, cultural stigma, pre-existing mental health issues, and resources available through the organization in which the police officer worked all may factor into the depth and opportunity for the development and application of resilience when dealing those traumatic events (Karrafa & Koch, 2016; Klose & Mooney, 2018).

Programs that support the development of resilience have been found to reduce psychological and physiological impairment in relation to health (McCanlies et al., 2014; Weltman, Lamon, Freedy & Chartrand, 2014). However, it is not clear whether it is the program that supports the development of resilience or the participants who are willing to engage in the study and therefore may have been predisposed to a positive disposition or the feeling of being valued by their organization that contributes to the development of resilience (Galatzer-Levy et al., 2014; McCanlies et al., 2014).

Implementation of such resources organizationally may be challenging according to Sollie et al., (2017) from an administrative perspective as well as from a cultural perspective related to the stigma policing organizations experience (Cordner, 2017; Karrafa & Koch, 2016; Klose & Mooney, 2018). The culture in policing, which is arguably occupational or organizational, may have an impact on the ease and acceptability of the programming. While Cordner (2017) argues culture was found to be organizational and many times positive as well as constructive, others such as Campeau (2015) found culture to be occupational and existing in all policing organizations. As a result of resistance possibly

due to cultural beliefs, few organizations are able to access such resources and if they had something similar, they often lack the full therapeutic experience of exposure therapy which render it less effective in its implementation (Klose & Moony, 2018).

Resilience is instrumental and has been found to be statistically related to sound mental health, positivity and happiness within the work and professional lives of police officers (McCanlies et al., 2014). It could be argued programming promoting resilience as an essential construct within policing organizations is not only important, it is crucial in ensuring the maintenance of police officer absenteeism, professional productivity and organizational liability. Having an understanding of the relationship between Reintegration After Critical Incident programming as an example of programming in general and resilience is an important gap to fill from a research perspective.

Posttraumatic Growth

Posttraumatic growth is defined as positive psychological growth after a perceived traumatic experience and/or stressful life event (Leppma et al., 2018). The role of posttraumatic growth in mental health comes from the ability to transform what might originally be considered negatively experienced information into positive, constructive information (Tedeschi & Calhoun, 2004). The optimal opportunity for this type of growth is through moderate stress (Leppma et al., 2018); however, Wolter et al. (2018) argued that in policing, traumatic experiences often occur in a high stress environment. Key pieces of information on how one transforms a stressful, potentially negative experience, into one of gratitude and appreciation from lessons learned, can be categorized by the body's ability to balance out the nervous system while regulating emotion, social supports available to them during and after the traumatic event, and the cognitive ability to have processed the learning experience into a life lesson (Leppma et al., 2018).

Tedeschi and Calhoun (2004) reviewed the history of what was called posttraumatic growth which included the fact this phenomenon had existed since the beginning of time with life lessons learned and a greater overall appreciation of life as a result of a traumatic experience. Although Blackie et al. (2017) reiterated the transformative effect posttraumatic growth had, they emphasized the confinement to the traits incorporated within this construct were not exclusive to posttraumatic growth. However posttraumatic growth was experienced and synonymously defined, it impacted relationships, personal strengths and the ability to identify new opportunities in life in a positive way, subsequently reducing the likelihood of developing a serious mental health disorder (Blackie et al., 2017). Chopko et al. (2018) explained how the likelihood of developing posttraumatic growth as a result of the traumatic experience producing PTSS was greater if the experience involved a threat to the self rather than to others, which in this study, are conceivably likely as critical incidents and/or line of duty shootings, are the experiences that were explored. Further, Chopko et al. (2018) stated that the role of the police officer as helper within their job description may support the evolution of posttraumatic growth as a rewarding aspect of their career. Finally, prevention of mental health issues and suicide in police personnel have been found to be the buffers of resiliency and posttraumatic growth provided (Chae & Boyle, 2013).

Effects of Police Organizational Culture

Police culture is, debatably, organizationally created or occupationally derived or is it? Regardless of the root derivative of "police culture", there is an understanding its effects on how police officers process and act on their experiences throughout their career is powerful (Campeau, 2015; Cordner, 2017). Police culture, defined by Campeau (2015) as a set of values, behaviors, and core characteristics attributed to the occupation of policing, implies the success or failure of certain

programming may have been the result of the approach of the programming's implementation.

Depending how one approaches the delivery of programming, police culture may be attributed to the

willingness of police officers to have engaged with the programming or not (Campeau, 2015; Cordner,

2017).

The debate in the literature relates to the subject of the effectiveness of programming within

police culture is, if culture is deemed to be occupationally driven or organizationally driven (Cordner,

2017). While one study explored the adaptive framework from which the culture in policing may have

been conceptualized, the other study explored the origination of its development. This is key in

understanding the relationship between who delivers programming, such as peers or mental health

providers external to the organization and the reception of the program delivered (Campeau, 2015;

Cordner, 2017). Reintegration After Critical Incident within the Edmonton Police Service is delivered

by peers, carefully selected, organizational-wide trusted, sworn members, who are trained in exposure

therapy along with their training in policing (Klose & Mooney, 2018). Depending on the culture within

the organization, the development of such a program and possibly unit, may dictate the receptiveness of

the program and therefore the opportunity for attaining increased resilience and/or PTG (Cordner, 2017).

Rose and Unnithan's (2015) study found little research had been done in relation to stressors and the

police officer's experience of being part of the culture or not. They argued as long as the police officers

perceived themselves as being part of the "group" from a cultural perspective, the culture itself had a

powerful impact on supporting mental health or not (Rose & Unnithan, 2015). Having this

understanding is important in respecting the role culture might have in the effective delivery of

programming such as Reintegration After Critical Incident and the intended results of resilience and

PTG (Rose & Unnithan, 2015). However, having an understanding of the origin of organizational culture is another key piece.

The question of, is culture derived from the organization or the occupation of policing may have an impact on the way in which programming is implemented from both positive and negative perspective (Campeau, 2015; Cordner, 2017). Campeau (2015) explained how the tendency for police officers to react from a place of personal training and experiences was the sociological way in which culture was analyzed, which supported a more current and open perspective. This view supported Cordner's (2017) perspective of how police culture is based organizationally rather than occupationally for the most part as, how the organization recruits, trains and leads their members might reflect the perceptive culture. If both suppositions are considered, Reintegration After Critical Incident programming may be effective depending on the organization's methods of implementation from the selection of those members delivering the programming to the method in which it is delivered (Campeau, 2015; Cordner, 2017; Klose & Mooney, 2018). This is important to consider as culture may have an impact on resilience and PTG scores both individually and organizationally (Campeau, 2015; Cordner, 2017). Galatzer-Levy et al. (2013) explained the impact of feeling valued by the organization in which the police officers are working for may be related to the lens through which positive or negative experiences were perceived. Cordner (2017) found in their study, most police culture was positively associated with experience and related to the adaptive framework. As a result, Campeau (2015) would suggest the effective implementation of a program such as Reintegration After Critical Incident to support police after a critical incident and/or line of duty shooting would likely have promoted both resilience and PTG (Galatzer-Levy et al., 2013; Klose & Mooney, 2018). Galatzer-Levy et al. (2013) suggested however, implementation of any programming geared towards their benefit was a

form of demonstration of the organization "valuing" their police officers. While culture appears to have had an influence on the reception of programming and the wellbeing of police officers, that wellbeing may be generalized to the concepts of resilience and PTG. It is understood culture, although still undetermined as to whether it is occupational or organizational, may have had an impact on resilience and PTG beyond available programming.

Mandatory Programming

Mandatory programming in this study is defined as programming that must be attended by police officers that fall into a certain category, in this case having been involved in a line of duty shooting, certain critical incidents and/or other organizationally defined parameters. Mandatory programming provides police officers the opportunity for support without the perceived stigma from peers that is prevalent in policing organizations (Karrafa & Koch, 2016; Klose & Mooney, 2018). There is no room for self-assessment, the typical dressing room conversation, "are you ok?" responded with "yes of course I am fine" as identified by McCraty and Atkinson (2012), as this was how tragic endings of self-harm and even suicide come about. With mandatory programming the decision to attend is taken away and ensured the care, needed or not, is provided (Klose & Mooney, 2018).

Programming implemented in policing organizations has in the very least, the goal of managing mental health through mitigating and minimizing operational stress injury as provided in the study by McCraty and Atkinson (2012) and their The Coherence Advantage Stress Resilience and Performance Enhancement Program. Carleton et al. (2018) provided an example of how programming, depending on its duration and depth of training, may or may not have increased positive mental health care amongst police officers with the Road 2 Mental Readiness Program. Each program has its objective and as such,

should be based on academic research confirming its effectiveness in fulfilling those objectives through evidence-based methods prior to be being delivered by policing organizations.

The Reintegration After Critical Incident program provides an extensive, in-depth exploration of the traumatic experience through exposure therapy as well as other applicable processes that aspires to reintegrate the police officer back into the workplace feeling confident in their ability and decision-making should they need to use their skills and/or firearm in another incident or be faced with future traumatic incidents that are similar (Klose & Mooney, 2018).

This literature began with an analysis of program components and compared them with their projected goals of prevention of PTSD and operational stress injury (OSI) as well as identified relationships between resilience and posttraumatic growth through a cognitive adaptation theory, resilience lens which incorporated aspects of social cognitive theory. This study then concluded with a section on mental health, culture, resilience and PTG within police programming Reintegration After Critical Incident.

In the beginning this study postulated that providing programming such as Reintegration After Critical Incident supported the feeling of being valued by your organization and more importantly your peers, which reduced the likelihood of developing PTSD or another OSI according to Evans, Pistrang and Billings (2013). Organizations, on the assumption there was support for their members, provided opportunities for the development of PTG and resilience (Evans, Pistrang & Billings, 2013). Social support for the mental health issues incurred on the job was another form of resiliency organizations could have offered to lessen the opportunity their members would develop PTSD or other serious OSIs (Bandura, 2001).

Mandatory programming of this type provided mental health training with a skillset the member may not have had the opportunity to learn that would last throughout their career as well as reduced the statistical risk of burnout as a result of mental health issues (Kelty & Gordon, 2015). Support from the Executive Command Team (ECT) is key in implementing effectively as the leaders of the organization showing buy-in with mandatory attendance provides that message (Smykla, Crow, Crichlow & Snyder, 2016).

Reintegration After Critical Incident provides that social support, a key piece in promoting posttraumatic growth through the normalization of emotions that may result in the critical incident and/or shooting the police officer may experience, as well as providing an underlying message of worth the member has within the organization through the delivery of this program (Klose & Mooney, 2018).

Challenges and issues of implementing programming effectively as a result of police culture and how Reintegration After Critical Incident programming supports this culture by requiring mandatory attendance after certain critical incidents and/or line of duty shootings. When delivered by carefully selected peers trained in firearms, exposure therapy and CISM, effective delivery is most likely to be received (Waters & Ussery, 2007).

Summary and Conclusions

The literature review notes key areas of research which include the effects of apparently unavoidable traumatic events had on police officers to the constructs that support sound mental health. It appears resilience and PTG are key aspects present in police officers who have good mental health, that demonstrate less likely to present with more serious mental health issues such as PTSD, major depression, anxiety and OSI. The goal of mandatory programming such as Reintegration After Critical Incident is to provide police officers with the opportunity to build resilience, transform their traumatic

experience of the line of duty shooting into a meaningful, coherent event through which further training could be administered enhancing self-efficacy through cognitive adaptation. PTG was another construct programming intended to provide.

Understanding through the theoretical lenses of resilience specified for police officers (Paton et al., 2008), Bandura's (1977) self-efficacy theory and Taylor's (1983) cognitive adaptation theory, their role in the implementation of programming such as Reintegration After Critical Incident, its value and importance in the mental health of police officers is key. Although there are a multitude of viewpoints expressed and noted in this review, the literature demonstrates the value of the implementation of such programming which may be instrumental in the results of resilience and PTG provided for police officers involved in critical incidents and/or line of duty shootings.

There is no seminary literature that was able to be located based specifically on the relationship between critical incidents and/or line of duty shootings, mandatory programming, resilience and PTG, however efforts will be made to continue to search for material that may have explored this phenomenon. Supporting police officers in attaining and maintaining wellness from a mental health perspective is shown to be key in living a quality life and reducing the likelihood of the worst-case scenario, suicide. Programming such as Reintegration After Critical Incident may play a large part in preventing serious mental health issues for those police officers who have access to Reintegration After Critical Incident compared to those police officers who do not. This gap in research compels me to explore the importance and necessity of mandatory programming for our police officers. Reducing the negative effects of the unavoidable aspects of police work by supporting police officers in furthering their resilience, self-efficacy and developing their ability to infuse meaning into their experience is key

in Reintegration After Critical Incident programming. Much research remains as there appears to be

many more gaps in the small gap this study explores.

Chapter 3: Research Method

Police officers are exposed to traumatic incidents throughout the duration of their careers and as a result they may experience mild to severe mental health issues (Chopko et al., 2018). Research have found a relationship between resilience and PTG on the processing of those traumatic events (Chopko et al., 2018), which also plays a role in maintaining sound mental health (Leppma et al., 2018). Various programming is implemented on an organizational basis and may play a role in how those traumatic events are processed and their effectiveness relevant to mental health outcomes (Klose & Mooney, 2018).

The purpose of this study was to explore the relationship between programming, namely Reintegration After Critical Incident, after critical incidents and/or a line of duty shooting and resilience and PTG in Canadian police officers. Specifically, the desired outcome of the study was to examine, through statistical analysis, whether there was a statistically significant difference in resilience and/or PTG after critical incidents and/or line of duty shootings in police officers who attended Reintegration After Critical Incident programming and police officers who did not attend Reintegration After Critical Incident programming. Although research has been conducted on the effects of attending traumatic incidents in policing, none has explored the relationship between Reintegration After Critical Incident programming relevant to resilience and PTG in police officers.

This chapter will review the research design and rationale of the study, the methodology including population, sampling and sampling procedures, recruitment participation, data collection, instrumentation, threats to validity, and the ethical procedures that were used throughout this study.

Research Design and Rationale

This study identified whether Canadian police officers who have been involved in a critical incident and/or line of duty shooting who have gone through programming, specifically Reintegration After Critical Incident, showed greater scores on the CD-RISC and separately, greater scores on the PTGI-SF than police officers who have not gone through Reintegration After Critical Incident programming. The independent variable in this study was whether police officers received Reintegration After Critical Incident programming after their critical incident and/or line of duty shooting or whether they did not receive Reintegration After Critical Incident programming after experiencing their critical incident and/or line of duty shooting. The dependent variables were the levels of resilience and PTG measured on the instrumentation selected, the CD-RISC and the PTGI-SF. The CD-RISC was used to measure resilience, which is defined as the ability to excel in adverse situations, measuring as high or low, within police officers who have been exposed to adverse/traumatic situations (Campbell-Sills & Stein, 2007). PTG was measured by the Post Traumatic Growth Inventory-Short Form (PTGI-SF) Scale (Arpawong et al., 2016; Campbell-Sills & Stein, 2007). This 10-item scale measures personal growth after traumatic incidents and/or adverse circumstances such as any critical incident and/or line of duty shooting (Cann et al., 2013).

A comparative research design was used to ascertain whether a statistical significance exists in resilience and PTG scores between police officers who have been involved in a critical incident and/or line of duty shooting who received Reintegration After Critical Incident programming and those police officers who have been involved in a critical incident and/or line of duty shooting who did not received Reintegration After Critical Incident programming. The purpose for selecting this research design was to ascertain from a statistical perspective whether there is a relationship between programming,

specifically Reintegration After Critical Incident and Canadian police officers' levels of resilience and PTG separately measured. This study may be used to inform an existing gap in how programming may affect police officers who have experienced a traumatic incident such as a critical incident and/or line of duty shooting, resilience and PTG.

Methodology

According to Statistics Canada there are 68562 active police officers in Canada as of 2018 (Conor, Robson & Ellis, 2018). Of those 68562 police officers, some work in rural, urban and suburban communities under the Royal Mounted Canadian Police, while others work in Canadian municipal, regional and provincial police services in urban, suburban and rural settings. This study sampled from this identified population, those police officers who have been involved in a critical incident and/or line of duty shooting.

Population

According to Statistics Canada there are 68562 active police officers in Canada as of 2018 (Conor et al., 2018). Of those 68562 police officers, some work in rural, urban and suburban communities under the Royal Mounted Canadian Police, while others work in Canadian municipal, regional and provincial police services in urban, suburban and rural settings. This study sampled from this identified population, those police officers who have been involved in a critical incident and/or line of duty shooting.

Sampling and Sampling Procedures

Sampling of the population included active, Canadian police officers who will be identified as having been involved in a line of duty shooting. As a result of this limited population and the necessary

parameters, participants may be a limited resource. This will include going through policing organizations known to provide Reintegration After Critical Incident programming as well as those policing organizations who do not. Each organization will be contacted through their Executive Command Team, their heads of Peer Support units and possibly their Human Resources (HR). Police officers having been involved in a critical incident and/or line of duty shooting were invited to participate through interoffice letter of invitation and/or email. The Peer Support unit or HR departments was contacted in various policing organizations in Canada that allowed participation in this study, to send out the general information gathering survey, the CD-RISC survey and the PTGI-SF survey through Survey Monkey. Nonidentifying, demographic information such as age, length of service and confirmation of involvement in a critical incident and/or line of duty shooting was collected. The definition of "line of duty shooting" for this study was provided in the survey.

A G*Power analysis was conducted and using a post-hoc power of analysis should both groups be different in size using an effect size of .5 with a power .80, the calculated minimal sample size of the population had to be 145. If both groups are equal, using a priori: compute required sample size - given a, with the same statistical parameters regarding effect size and power of .80, the calculated minimal sample size of the population had to be 128.

As a result of this analysis, the sampling procedure involved identifying police officers who had been involved in a critical incident and/or line of duty shooting anonymously, through units of an undetermined number of Canadian policing organizations known to implement Reintegration After Critical Incident programming and known not to implement Reintegration After Critical Incident programming.

Procedures for Recruitment, Participation, and Data Collection

Recruiting the population for this study required me to go through policing organizations'

Executive Command initially and then through their Peer Support Unit (PSU) and/or their HR. The

initial letter of invitation was emailed out along with the consent form to those organizations who agreed

to participate with a detailed description of the parameter of the study, along with instructions, a

description of confidentiality procedures that were to take place and their willingness, or not to

participate in this study. Those police officers who chose to participate in this study, completed an

information gathering questionnaire, providing basic, non-identifying information along with the CD-

RISC and the PTGI-SF (see Appendix A). The consent form containing the SurveyMonkey link

explained confidentiality to the participants and consent was implied when the link was chosen. The

process was explained in detail, providing the participant the option to end their participation at any time

by discontinuing in the process in any way they wished. Each participant was advised that this study

was being conducted on a volunteer basis. Consent was obtained by the participants agreeing to partake

in the study by clicking on the Survey Monkey link at the end of the consent form. When the survey was

completed, the data were returned in a security protected email with generic numbers attached through

Survey Monkey to the participating surveys in order to protect anonymity.

Instrumentation and Operationalization of Constructs

CD-RISC

The CD-RISC that was developed by Connor and Davidson is comprised of 10 questions which

measured levels of resiliency in individuals through the determination of their ability to thrive in

situations of adversity and trauma (Gonzalez et al., 2016). Components that were measured by this

measure included one's ability to cope with stress, adaptation to change, flow with life's incidents

effectively, and the ability to deal effectively with stressful emotions and not to be discouraged by instances of perceived failure (Gonzalez et al., 2015). This measure used a 5-point Likert scale with a range of not at all true (#1) to very true (#5) where participants indicated their experience of the question being asked. Example items are, "I can deal with whatever comes my way" and "I am not easily discouraged by failure" (Campbell-Sills & Stein, 2007). The participant chose their experience of how much they agreed or disagreed with the statement providing a numerical score. The scores for each question were calculated by obtaining a sum of the numbers from each question. For example, if the Questions 1-10 of the Likert-type scale yields scores of 5 throughout, the total score of the CD-RISC would be 50, a very high score showing this individual has a great tendency towards resilient processing (Gonzales et al., 2016).

The CD-RISC has been used in multiple studies using police officers as the population. McCanlies et al., (2014) used it in their study to measure resilience amongst other measures in police officers who responded to incidents involving Hurricane Katrina in order to determine if there was a relationship between resilience and mitigating factors of PTSD. van der Werff et al. (2017) used the CD-RISC in their study that explored the relationship between brain structures and resilience in Dutch police officers. Jeong et al., (2017) found validity and reliability in their study from internal consistency, convergent validity, divergent validity, correlation with the CD-RISC as well as predictive validity with their sample which was obtained through self-reporting questionnaires in Korean first responders (Jeong et al., 2017). In relation to the psychometric properties of the CD-RISC, Gonzalez et al. (2015) study found the measure to have convergent and divergent validity with a positive and moderate correlation with positive affect as well as an inverse relation to negative affect and performance anxiety. In relation to reliability, the CD-RISC was found to have a high internal

consistency (Gonzalez et al., 2015). Permission from Connor and Davidson was requested for this study, following all copyright rules.

Completion of this measure was estimated to take approximately ten minutes and yielded an overall score for resilience.

PTGI-SF

The PTGI-SF is a 10-item measure with Likert scale type responses that focuses primarily on traumatic events that may or may not have produced an experience of growth within self-reporting individuals (Tedeshi et al., 2016). The growth that may be experienced as a result of cognitive emotional processing, according to Tedeshi and Calhoun (2004), is more likely to occur when an individual has experienced trauma when coupled with forms of psychotherapy. The Reintegration After Critical Incident program uses an exposure somewhat therapeutic approach when delivering to police officers who have been involved in some critical incidences and line of duty shootings and as a result, it was anticipated scores of PTGI-SF would be higher from members who have received Reintegration After Critical Incident programming compared to members who have not received Reintegration After Critical Incident programming (Klose & Mooney, 2018). However, PTG can occur naturally as well (Weinrib et al., 2006) and may have no relation to the implementation of Reintegration After Critical Incident programming. The statistical results, if significant, would have provided further scholarly information in this area of study.

The purpose of administering the PTGI-SF was to determine whether there was statistically significant comparative difference in scores between those police officers who have been involved in a critical incident and/or line of duty shooting who have been followed up with Reintegration After Critical Incident programming and those police officers who have been involved in a critical incident

and/or line of duty shooting who have not followed up with Reintegration After Critical Incident programming.

Weinrib et al. (2006) explained the validity and reliability aspects of the PTGI-SF which have been measured for convergence and divergence have been shown to be valid with time between the traumatic event and PTGI measure. They did not show any statistically significant difference in self-reporting with PTGI scores and self-reporting as a response to the questionnaire did not show any statistically significant issue with self-presentation aspects. Criterion validity was found to be statistically representative in demonstrating PTGI through measured scores (Weinrib et al., 2006). As cognitive and emotional processing are known to be precursors to PTG, the statistically significant findings related to the constructs of this measure find validity in the PTGI-SF (Weinrib et al., 2006). The answers to this measure start at 0 with "I did not experience this change as a result of my crisis" to 6 with "I experienced this change to a great degree as a result of my crisis. This test uses a six-point Likert scale with a range of "not at all true" to "very true" where participants indicate their experience of sentences such as "I have changed my priorities about what is important in life" and "I have a greater feeling of self-reliance" (Tedeshi et al., 2016). The participant chooses their experience of how much they agreed or disagreed with the statement providing a numerical score with their choice. The scores for each question were calculated by obtaining a sum of the numbers from each question. For example, if the questions one through ten of the Likert-type scale yields scores of 6 throughout, the total score of the PTGI-SF would be 60, a very high score showing this individual has experienced great PTG (Gonzales et al., 2016).

Data Analysis Plan

The primary component to this study was whether there was a statistically significant difference between the scores in resilience and PTG, separately, in police officers who were involved in a critical incident and/or line of duty shooting and participated in the Reintegration After Critical Incident program and police officers who were involved in a critical incident and/or line of duty shooting and did not participate in the Reintegration After Critical Incident program.

1. Do police officers in organizations who attend the Reintegration After Critical Incident program after a critical incident and/or line of duty shooting report higher resilience scores, as measured by the Connor-Davidson Resilience Scale CD-RISC, compared to police officers in organizations who do not administer the Reintegration After Critical Incident program?

Null Hypothesis: Police officers in organizations who attend the Reintegration After Critical Incident program after a critical incident and/or line of duty shooting do not report higher resilience scores, as measured by the Connor-Davidson Resilience Scale, compared to police officers in organizations who do not administer the Reintegration After Critical Incident program.

Alternate Hypothesis: Police officers in organizations who attend the Reintegration After Critical Incident program after a critical incident and/or line of duty shooting do report higher resilience scores, as measured by the Connor-Davidson Resilience Scale, compared to police officers in organizations who do not administer the Reintegration After Critical Incident program.

2. Do police officers in organizations who attend the Reintegration After Critical Incident program after a critical incident and/or line of duty shooting report higher PTG scores, as measured by the

Post Traumatic Growth Inventory scale, compared to police officers in organizations who do not administer the Reintegration After Critical Incident program?

Null Hypothesis: Police officers in organizations who attend the Reintegration After Critical Incident program after a critical incident and/or line of duty shooting do not report higher scores on the Post Traumatic Growth Inventory scale compared to police officers in organizations who do not administer the Reintegration After Critical Incident program.

Alternate Hypothesis: Police officers in organizations who attend the Reintegration After Critical Incident program after a critical incident and/or line of duty shooting do report higher scores on the Post Traumatic Growth Inventory scale compared to police officers in organizations who do not administer the Reintegration After Critical Incident program.

The statistical analyses consisted of two separate One-Way ANOVAs. The One-Way ANOVA is a one-factor experiment that involves gathering complete data with the two population samples of police officers who did attend the Reintegration After Critical Incident program after a critical incident and/or line of duty shooting and those police officers did not attend the Reintegration After Critical Incident program after a critical incident and/or line of duty shooting. Each population completed the CD-RISC and using the One-Way ANOVA analysis, results were calculated and the PTGI-SF using another separate One-Way ANOVA analysis to see if, these populations showed a statistically significant difference in results.

The two separate One-Way ANOVA analyses involved data collected from the surveys of the Information Gathering Questionnaire, CD-RISC and PTGI-SF through Survey Monkey and were input into SPSS software to compute the results in preparation for statistical analysis.

Threats to Validity

The greatest and most significant threat to validity were that there is no control over who has been involved in a critical incident and/or line of duty shooting in the policing population. This aspect coupled with the number of critical incidents each police officer has attended may affect their answers on each survey therefore having an impact on their scores whether they received Reintegration After Critical Incident programming or not.

The demographics that were accessible were limited to the organizations who allowed the study to be conducted within their institutions. While some organizations may be interested in this study others may not be interested or may have already been saturated with prior studies making particulars organizations unwilling to participate. Understanding the criteria of a critical incident and/or being "involved in a line of duty shooting", which, while it was described in as much detail as possible, may have eliminated possible police officers' participation as they may not have believed they fit the criteria.

Other factors such as personal history and current life circumstances which are not within my control to include may be present and therefore affect scores accordingly.

While both the CD-RISC and the PTGI-SF provide strong internal validity as described in studies conducted with this population by Jeong et al., (2017) for the CD-RISC and Weinrib et al., (2006) for the PTGI-SF, replicating either study in relation to sample procuring is not occurring. As a result, this may have altered internal validity.

Ethical Procedures

Necessary precautions were taken following the American Psychological Association's Ethical Principles of Psychologists and Code of Conduct (APA, 2002) in order to ensure the anonymity of the

police officers involved in the study were protected as well as IRB standards and protocol. Permission from IRB and then through the involved organizations was obtained prior to any data gathering.

The police officers volunteered to participate in the study and were required to consent through revising a consent form with full disclosure of the intent as well as the procedure this study followed. There was no form of compensation given to those who choose to participate nor was there any repercussion should any participant have chosen to disengage at any point of the study. Participants were advised they were free to withdraw their consent at any point in time throughout the course of the study.

This study ensured that no physical or mental harm was done to the participants and the assessments were reviewed by a trained psychologist to ensure their use was ethical. The Independent Review Board (IRB) reviewed and ensured this study conformed to all ethical aspects.

The assessments that were completed by the participants and the data obtained from these assessments was used exclusively for the purpose of this study. A summary of the overall results as well as the dissertation, upon its completion were shared with the organization and were available to the participants of the study.

As well as maintaining complete anonymity of the participants and the raw data associated to them, the data was stored in password secured file on a password secured computer and the data will be destroyed five years after the completion of this dissertation. Benefit of the study may occur for the organization and the participant with the hopes of information encouraging police officers to look into beneficial programming that might increase resilience, PTG and other factors potentially protecting mental health overall.

Summary

This chapter provided a discussion on research design and rationale of the study, quantitative methodology used, population to be accessed for the study, sampling and sampling procedures on how and what is necessary to ensure the study provides statistically significant results, my procedures for recruitment of the population, data analysis, threats to validity, both external and internal as well as the ethical process of this study. Police officers having been involved in a critical incident and/or line of duty shooting were invited to complete three surveys. The first was the collection of generic, demographic, non-identifying information, then the CD-RISC and finally the PTGI-SF, with no threat to any repercussion should they choose to discontinue at any time and were provided access to mental health resources should they be required as a result of the completion of the surveys. Discussion on the strict, ethical approach on the administration of this study was discussed as well as various threats of validity that will be considered once data is collected, submitted into SPSS and analyzed.

Chapter 4: Results

The purpose of this study was to examine the effects of reintegration programming, specifically Edmonton Police Service's Reintegration After Critical Incident programming on resilience scores and post traumatic growth inventory scores of police officers who have been involved in a critical incident and/or line of duty shooting. The participants completed an information gathering questionnaire, the CD-RISC and the PTGI. The participants were divided into two groups; participants who participated in Reintegration After Critical Incident programming after their critical incident and/or line of duty shooting, "Yes" and participants who did not participate in Reintegration After Critical Incident programming, "No". In this chapter, results generated from the statistical analysis conducted will be presented relative to the research questions posed.

This quantitative study was designed to answer each of the following research questions:

RQ1: Do police officers in organizations who attend the Reintegration After Critical Incident program after a critical incident and/or line of duty shooting report higher resilience scores, as measured by the Connor-Davidson Resilience Scale CD-RISC, compared to police officers in organizations who do not administer the Reintegration After Critical Incident program?

$H_0 1$: Police officers in organizations who attend the Reintegration After Critical Incident program after a critical incident and/or line of duty shooting do not report higher resilience scores, as measured by the Connor-Davidson Resilience Scale, compared to police officers in organizations who do not administer the Reintegration After Critical Incident program.

$H_a 1$: Police officers in organizations who attend the Reintegration After Critical Incident program after a critical incident and/or line of duty shooting do report higher resilience scores, as

measured by the Connor-Davidson Resilience Scale, compared to police officers in organizations who do not administer the Reintegration After Critical Incident program.

RQ2: Do police officers in organizations who attend the Reintegration After Critical Incident program after a critical incident and/or line of duty shooting report higher PTG scores, as measured by the Post Traumatic Growth Inventory scale, compared to police officers in organizations who do not administer the Reintegration After Critical Incident program?

$H_0 2$: Police officers in organizations who attend the Reintegration After Critical Incident program after a critical incident and/or line of duty shooting do not report higher scores on the Post Traumatic Growth Inventory scale compared to police officers in organizations who do not administer the Reintegration After Critical Incident program.

$H_a 2$: Police officers in organizations who attend the Reintegration After Critical Incident program after a critical incident and/or line of duty shooting do report higher scores on the Post Traumatic Growth Inventory scale compared to police officers in organizations who do not administer the Reintegration After Critical Incident program.

Data Collection

Data collection began with permission granted to use Survey Monkey to collect the participants responses for the study. Instrumentation in this study included an information gathering questionnaire, the CD-RISC questionnaire and the PTGI questionnaire presented in English. After receiving IRB approval (06-05-20-0746695) various Canadian policing organizations were contacted via email and invited to have their members participate in this study. Six policing organizations agreed to participate and disseminated the invitation to participate and consent forms via inter-office posting to their sworn members to ensure anonymity was maintained. Those police officers choosing to participate were

invited to complete the survey which was comprised of 66 questions. This data collection process took four months and a total of 12 policing organizations were contacted. Of those 12, six policing organizations agreed to participate.

From the six policing organizations, 280 participants responded and of those 280 participants, 252 participants completed the questionnaire in its entirety. There were 28 participants who did not complete the survey and these results were eliminated from the analysis. The minimum number of participants needed was 128 if the samples were equal and 144 if the samples were not equal. Equality in samples refers to the dependent variable of whether the participants received Reintegration After Critical Incident programming or not. Out of the 252 participants, 35 answered they participated in Reintegration After Critical Incident programming, one of which did not experience a critical and/or traumatic incident, leaving the "Yes" sample with 34. There were 213 who answered they did not participate in Reintegration After Critical Incident programming. The sample that did not participate in Reintegration After Critical Incident programming ("No" group) was further reduced to those involved in a line of duty shooting as most of the "Yes" group had been involved in a line of duty shooting. This sample was reduced to 67 of which a random sample of 34 was created, making both "Yes" and "No" sample groups equal in size. Each survey contained an information gathering questionnaire, the CD-RISC and the PTGI and the link to the survey after reviewing consent. The accessed link was deemed to be consent.

Sample

Although 252 participants participated and completed the survey out of the six participating organizations, only two of those organizations have the Reintegration After Critical Incident program and one of those two organizations implemented the program one year ago. This limits not only the

opportunity to gather data from those who have experienced this program, it also limits any opportunity of reaching the number of participants to satisfy the G Power for a balanced study. The large sample of participants who did not have the Reintegration After Critical Incident program administered after their critical incident and/or line of duty shooting where reduced by criteria that were similar to those few (34) who did have the Reintegration After Critical Incident program administered after their critical incident and/or line of duty shooting. There were 11 who were involved directly and deemed themselves as the shooter in the incident. One of the criteria that was filtered in was the line of duty shooting, directly involved (67) where the participants deemed themselves the shooter (29). All but four of the 35 who answered yes were involved in a line of duty shooting. Therefore, the critical incident only component was eliminated from the "No" data sample used in the analysis. Those participants who answered "No" to whether their experience was traumatic were also removed as 29 out of the 35 "Yes" participants stated their experience was traumatic with one that did not identify their incident as a critical incident, removed from the "Yes" sample as this aspect was a main criterion for this study.

Study Results

Some policing organizations have begun to offer Reintegration After Critical Incident programming to their members after a line of duty shooting and/or critical incident. This study's aim was to determine whether a statistically significant difference in CD-RISC scores and PTGI scores, separately, existed between those who received the programming after their critical incident and those who did not receive the programming after their critical incident. In the samples used for this comparative analysis, 56 males, 11 females and one participant who preferred not to select gender were included.

Two separate One-Way between-subjects ANOVA comparative analyses were executed using CD-RISC scores and PTGI scores as the independent variables for each research question and Reintegration After Critical Incident programming used as the dependent variable. Confidence intervals criteria were set at 95%. The mean score for the CD-RISC was 77.47 for the "Yes" group and 72.26 for the "No" group. The output from the analysis produced a significant score for the CD-RISC of .020 suggesting there is statistical significance in the relationship between resilience scores and Reintegration After Critical Incident programming after a critical incident/line of duty shooting. The mean score for the PTGI was 28.26 for the "Yes" group and 20.44 for the "No" group. The output analysis produced a lack of statistical significance score for the PTGI of .134 suggesting there is no significantly statistical relationship between PTG and Reintegration After Critical Incident programming after a critical incident/line of duty shooting. While most of the CD-RISC part of the surveys were completed, the PTGI part of the surveys were either incomplete or no to very little PTG was experienced by the participant.

Research Question 1

Do police officers in organizations who attend the Reintegration After Critical Incident program after a critical incident and/or line of duty shooting report higher resilience scores, as measured by the Connor-Davidson Resilience Scale CD-RISC, compared to police officers in organizations who do not administer the Reintegration After Critical Incident program? The method of data analysis determined was the One-Way ANOVA. A test of Homogeneity of Variances found equality across comparison groups. The independent variable of CD-RISC scores of those participants who had received Reintegration After Critical Incident programming after their incident were found to be statistically significant in comparison to those participants' CD-RISC scores who did not receive Reintegration After

Critical Incident programming after their incident as analyzed via the One-Way ANOVA, ($F(1,66) =$

5.67, $p = .020$, $\eta^2 = .0791$). The eta-square was determined to be a medium effect size.

Research Question 2

Do police officers in organizations who attend the Reintegration After

Critical Incident program after a critical incident and/or line of duty shooting report higher PTG

composite scores, as measured by the Post Traumatic Growth Inventory scale, compared to police

officers in organizations who do not administer the Reintegration After Critical Incident program?

The method of data analysis determined was the One-Way ANOVA. A test of homogeneity of

variances found the significance value to be .448, not statistically significant adhering to the requirement

that the variance for both groups is equal. The independent variable of PTG scores of those participants

who had received Reintegration After Critical Incident programming after their incident were not found

to be statistically significant in comparison to those participants' PTG composite scores who did not

receive Reintegration After Critical Incident programming after their incident as measured through the

One-Way ANOVA, ($F(1,66) = 2.298$, $p = 1.34$).

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this quantitative study was to determine whether a statistically significant relationship existed between the Reintegration After Critical Incident program, resilience and PTG. The second aspect was its impact, if any on those police officers involved in the critical incident and/or line of duty shooting. The reintegrative component to mental health resources in policing organizations is lacking and this resource has been shown to contribute to the prevention of serious mental issues, including PTSD. Identifying whether resilience and PTG scores are a statistically significant component in relation to the Reintegration After Critical Incident programming to this literature is key in speaking to how organizations can support the reduction and prevention of serious mental health issues. Since its inception in 2009, the Reintegration After Critical Incident programming, has evolved gradually to various policing organizations in Canada. Very few have had the program in use for longer than two years of those few who have adopted it in its entirety.

This study may have benefitted from further questions being asked, for example, inquiring if the participant's organization had the Reintegration After Critical Incident programming in place. Since existing resources for police officers have been found to support the feeling of being valued, although Police Officers who did not complete the programming itself may have scored high on the CD-RISC, feeling valued as a result of available resources may have played a part. Including the Stress Workplace Survey scale may have supported the outcome of the results in relation to personal growth. The study itself could be more involved and include a longitudinal collection of data to inform how time impacts resilience and PTG scores alongside the Reintegration After Critical Incident programming. Finally, there may be a variety of reintegration programming available in policing organizations that may fill the gap in reintegrative resources specifically for Police Officers that may be just as effective as the

Reintegration After Critical Incident programming. This particular program was the only one of its kind implemented in multiple organizations and available for study. It is more the effectiveness of reintegrative programming that could use further, in-depth study.

Police officers are and continue to be exposed to what the general population would consider to be traumatic incidents on a daily basis in the course of their duties and this exposure continues to have an effect on their mental health, often causing them to be a liability on the job and/or being off on long-term disability, to suicide (Carleton et al., 2019; Violanti, 2006; Weltman et al., 2014). Programs that support Police Officers in processing these traumatic events may prevent serious mental health issues such as PTSD, anxiety, depression and eventually suicide (Klose & Mooney, 2018; Thornton & Herndon, 2016). The goal of the study was to gain a better understanding of the statistical relationship between the Reintegration After Critical Incident programming, resilience and PTG composite scores.

Interpretation of Findings

Police officers were given a survey that included an information gathering questionnaire, resilience and PTG scales to complete. The CD-RISC and PTGI scales were designed to measure resilience and PTG in those participating. The information gathering questionnaire informed the study on some basic demographics, what programming/training they may have received, mental health resources as well as the police officer's degree of experience of their critical incident and mental health resources utilized.

The results were found to be statistically significant in the One-Way ANOVA comparison with the Connor Davidson-Resilience Inventory Scale (CD-RISC) in the comparative groups and no statistical significance was found in the PTGI scores comparison. Although there was no statistical significance in the analysis of the scores obtained in the PTGI research question and significance was

found in the group of scores obtained on the CD-RISC, the group of Police Officers who participated in the Reintegration After Critical Incident programming was small compared to the group who did not receive Reintegration After Critical Incident programming. Most of those in the "received Reintegration After Critical Incident programming," (31 out of 35) that responded were involved in a line of duty shooting incident. There were 21 out of the 35 who participated in the Reintegration After Critical Incident programming that were mandated by the organization to do so and 14 who were not mandated. There is a debate as to whether this type of programming should be mandated to ensure the police officer obtains the mental health care they may need rather than allowing the police officers themselves to decide whether they need this resource. As police officers encounter many barriers such as the stigma of needing mental health care and the understanding that their exposure to these critical incidents can cause serious mental health issues leading to PTSD, mandated attendance ensures this resource is administered. Resilience plays an integral role in mental health and the self-efficacy of the police officer in both their role as a Police Officer and in the processing of their critical/traumatic incidents. The statistical significance of this research question may support the importance of a reintegration program such as Reintegration After Critical Incident program for members of policing organizations. PTGI scores had a large degree of variance amongst the respondents and was perhaps not the most applicable tool for measuring an important mental health component or perhaps should have been amended to the culture of the policing population that was included in the study.

Limitations of the Study

There were several limitations to the study. Although the number of participants exceeded the requirements for a strong study, the two groups being compared were very unbalanced, creating challenges in the data analysis. Furthermore, the group who received Reintegration After Critical

Incident programming were limited as the program has only been implemented in a few policing organizations in Canada. Those organizations who have implemented the program have been operational with this program for under two years. One of the participating organizations expressed a concern for survey "burnout" and advised the participant pool may be limited. The participants were Canadian and therefore may not be generalizable to an international population however there may be some strong similarities. There may be a variety of reintegration programming available in policing organizations that may fill the gap in reintegrative resources specifically for police officers that may be just as effective as the Reintegration After Critical Incident programming. This particular program was the only one of its kind implemented in multiple organizations and available for study.

Recommendations

Police officers are exposed to critical and potentially traumatic incidents on a regular basis throughout their career. Although the statistical findings were not significant in the area of PTG, statistical significance in the area of resilience that were statistically significant may warrant further research in greater depth in relation to reintegration programming. The Reintegration After Critical Incident programming has been shown to be effective in other studies and understanding what components support that significance such as resilience, may impact policing organizations in their decision-making process as to what resources are key to supporting the mental health of their members. Researchers could examine whether the organizations have Reintegration After Critical Incident programming available to them and whether they feel valued by their organization. Feeling valued may be a component worth examining in relation to this resource.

Using larger, with more balanced sample groups is recommended in order to truly examine the scores of these measures. Replacing the PTGI with the Stress Workplace Survey may be more

appropriate for this group as the questions in the PTGI were specific to the incident in question and may not reflect accurately the PTG that occurs with the overall of critical incidents experienced. Finally, a longitudinal study may be considered for those Police Officers who choose to participate in future studies.

Implications

The results of the two, One-Way ANOVAs was statistical significance in the relationship between Reintegration After Critical Incident programming and resilience, and no statistical significance with PTG. Results provided information about the contribution Reintegration After Critical Incident programming may deliver in relation to resilience, a key component to mental health wellness. The lack of Reintegration After Critical Incident programming being delivered/available to police officers and implemented in general in policing organizations were one of the challenges of this study as only two policing organizations found with this programming participated in this study. The PTGI may have not been the most applicable measure in determining the key components delivered by this reintegration programming. Resilience and PTG are contributors to sound mental health in police officers as are other factors. While no statistical significance was found in the relationship between Reintegration After Critical Incident programming and PTG, resilience was found to be statistically significant related to Reintegration After Critical Incident programming. Resilience is a key component to mental health wellness in police officers. Other interesting results were garnered from this research. For instance, there were some questions that were not asked that may have contributed to the higher scores of those who have not participated in Reintegration After Critical Incident programming. As research has shown, available resources are key in feeling valued as a police officer and Reintegration After Critical Incident programming is one of those resources. It is important police officers receive the mental health

resources they need to prevent serious mental health issues as a result of their exposure to critical/traumatic incidents and the culture in which they are immersed in.

Conclusion

Police officers will always be exposed to traumatic and/or critical incidents in their line of work and it will continue to impact their mental health. One program, Reintegration After Critical Incident programming, has been shown to play a part in the prevention of PTSD and other serious mental health issues. Understanding resilience, PTG levels and their relationship in the delivery of this reintegration programming may be key, as they are also factors to be considered in the prevention of PTSD and other serious mental health issues. Statistical significance was found in the relationship between Reintegration After Critical Incident programming and resilience using the One-Way ANOVA. Although there was no statistical significance found in Reintegration After Critical Incident programming and PTG, this study has brought forth other important factors in examining the effectiveness and relationship between this programming and other related components that have been found to be effective in the prevention and reduction of PTSD and mental health issues.

Mental health issues are a major contributor to workplace absenteeism as well as they may contribute to the police officer becoming a liability in their actions as they execute their duties. The intention of mental health resources and especially that of the Reintegration After Critical Incident programming is to minimize the severity of mental health issues and to ensure police officers return to their position within their organization so they can serve their community. Further research is recommended in the area of the particular resource of reintegration, to support and grow those resources

that may be most effective in the prevention and development of serious mental health issues in police

officers.

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