

PSYCHOLOGICAL RESPONSE TO CRITICAL INCIDENTS OF POLICE OFFICERS  
FROM THE NEW RIVER VALLEY

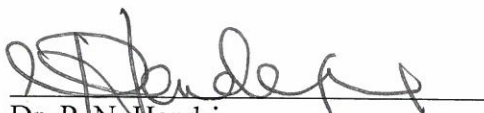
by

Eric S. Snow


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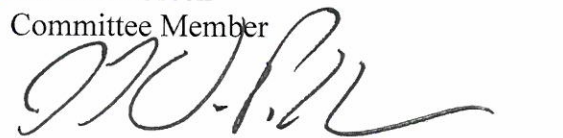
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\_\_\_\_\_  
Dr. P. N. Hendrix  
Thesis Advisor

12/4/2013  
Date

  
\_\_\_\_\_  
Dr. E. K. Green  
Committee Member

12/4/2013  
Date

  
\_\_\_\_\_  
Dr. I. T. Van Patten  
Committee Member

04 Dec 2013  
Date

## **Abstract**

Law enforcement officers are faced with critical incidents and stressful situations during their careers. During the past twenty years, officers from the New River Valley area of Virginia have endured four line of duty deaths, two school shootings, and numerous other extreme situations. Using survey data from members of five law enforcement agencies within the New River Valley, this study analyzed the psychological impact of various critical events as well as coping strategies utilized by participants. The results indicated nearly 26% of the sample (28 of 109 responses) met criteria for PTSD, PTSDI, or PTSDII. Of these people, only four of them were female (14%), which differed from most PTSD research that indicates females are twice as likely as males to meet PTSD criteria. Fifty percent of respondents (50 responses) reported that a line of duty death was their most critical incident. Recommendations for law enforcement administrators and for future researchers are included.

Eric S. Snow, M.A.  
Department of Criminal Justice, 2013  
Radford University

## **Dedication**

To my wife, Sara Snow, for supporting and encouraging me in everything I do and for the many times she felt like a single parent while I was in class or doing homework. I am thankful to have you standing with me. Your prayers and understanding made this journey possible.

To my children, Jake and Ally, for supporting and encouraging me as well as being understanding when schoolwork took over our evenings and weekends.

To my parents, Ed and Sue Snow, my grandparents, Dick and Betty Ruth Culbertson, and my In-laws, Mike and Bernice Callahan, for supporting and encouraging me as well as instilling values of hard-work and dedication.

I am truly grateful to everyone who has supported me in this project and throughout my lifetime.

“The education of a man is never completed until he dies”

– General. Robert E. Lee

“The function of education is to teach one to think intensively and to think critically. Intelligence plus character - that is the goal of true education”

– Martin Luther King Jr.

## Acknowledgements

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Lastly, I would like to thank my co-workers in the CID of the Sheriff’s Office for their willingness to cover my on-call time or pick up the slack when I was in class or working on school work.

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## **Chapter 1: Introduction**

Law enforcement is a profession filled with danger, exposure to trauma, and negative situations, yet it can be a fulfilling and productive career as well. Police officers spend the majority of their time responding to conflict or calls where an individual is experiencing a crisis. Additionally, law enforcement officers are trained to quickly assess any given situation for danger and must be prepared to react swiftly in order to prevent harm. Over the past ten years, 535 law enforcement officers have been feloniously killed and in 2012, 52,901 officers were assaulted in the line of duty (USDOJ, 2013). Marine Corps General James N. Mattis' quote, "Be polite, be professional, but have a plan to kill everybody you meet" applies nearly as much to law enforcement officials as the Marines serving in Iraq to whom he made the statement and provides insight into the necessary mentality of many police officers (Ingersoll & Szoldra, 2013).

The current study proposed an examination of the pattern and extent of posttraumatic stress disorder (PTSD) among law enforcement officials from the New River Valley, Virginia as well as the means by which they cope with critical incidents. The study evaluated how individual characteristics, critical incident situations, and aftercare relate to PTSD rates of law enforcement personnel. It examined how individuals are affected by different types of critical incidents and what differences exist based on their role during the incident. Lastly, this study evaluated which resources were utilized by participants after critical incidents and determine any interactions between the resources and the rates of PTSD among participants.

Participants of this study were asked to provide individual characteristics for use during the study. These characteristics, age, gender, race, years of law enforcement



experience, current job positions, and relationship status, were considered individually as well as grouped to determine which characteristics are most common in individuals with and without PTSD symptoms. These characteristics were also analyzed in relation to types of critical incidents individuals are involved with and how their roles in each incident influenced them psychologically. Finally, individual characteristics were evaluated in relation to resources, such as counseling or spiritual guidance, utilized by participants after the event.

This study examined the types and numbers of critical incidents participants encountered during their careers. The events could have been directed toward the participant, such as an officer involved shooting, a severe accidental injury to them, or a severe intentional violent injury to them by a suspect; or to another officer or co-worker, such as a line of duty death, severe accidental injury to a co-worker, or severe intentional violent injury to a co-worker by a suspect; or to a citizen, such as school or workplace violence, sexual assault of a child or adult, death or serious injury to a child, handling a fatal motor vehicle crash, or handling a severe domestic violence situation. In addition to comparing event types to individual characteristics, this study evaluated event types and resources utilized by participants after the event to determine if a pattern exists.

This study utilized the non-military, civilian version of the Posttraumatic Stress Disorder Checklist (PCL-C) for evaluation of PTSD among law enforcement officers. The PCL-C has seventeen questions that are each answered using a Likert five point scale that allows for wide variation in overall scores by participants. Each question relates to a PTSD symptom as outlined in the clinical definition in the Fourth Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). Questions answered

with a three or higher are considered significant for the purpose of determining PTSD (Glück, Tran, & Lueger-Schuster, 2012; Gravely, Cutting, Nugent, Grill, Carlson, & Spooont, 2011; Weathers, Litz, Huska, & Keane, 1994).

Finally, this study evaluated resources, such as debriefings, Post Critical Incident Seminars, chaplains, counselors, or communication with significant others, other family members, co-workers, or friends outside of law enforcement, to determine which were utilized and the effectiveness of each. Multivariate analysis was conducted to determine if a particular group of individuals with a common characteristic is more likely to participate in a certain resource and how effective the resource was for them. Further analysis evaluated which after action resources were most utilized by individuals involved in certain event types.

Participants for this study were solicited from a sample of law enforcement employees, both sworn and civilian, from the Blacksburg Police Department, the Christiansburg Police Department, the Montgomery County Sheriff's Office, and the Virginia Tech Police Department. Anonymous surveys were distributed via department issued email addresses for all employees of these agencies. The total number of individuals employed by the five agencies was 450 and the goal for responses was 50%, or 225 responses. Responses were received from 110 individuals with 109 (24%) of them agreeing to participation in the study. Prior studies utilizing similar populations have achieved response rates ranging from 52% to 72% (Collins & Gibbs, 2003; Stephens, Long, & Miller, 1997). Additionally, studies ranged in the number of participants from 43 to over 1000 with several having fewer than 150 (Collins & Gibbs,

2003; Fullerton et al., 2001; Heinrichs et al., 2005; Melhem et al., 2004; Van Patten & Burke, 2001).

## **Chapter 2: Literature Review**

Police officers who are exposed to critical incidents or repeated negative incidents may be dramatically influenced by them. These officers may become cynical and paranoid or experience problems in their personal relationships due to emotional withdrawal. Officers' physical health can be affected by high levels of job related stress, rotating schedules, and poor eating habits developed during shift work. More extreme results include alcohol abuse and domestic violence acts committed by officers (Collins & Gibbs, 2003; Oehme, Donnelly, & Martin, 2012) One of the more significant results of exposure to critical incidents by law enforcement officers is development of Post-Traumatic Stress Disorder and this concept is addressed at length within this study.

This study examined the psychological response to critical incidents by sworn and civilian law enforcement officers from the New River Valley area of Virginia. Specifically, each participant answered questions about various critical incidents in which they have been involved and completed a PTSD self-assessment. Additionally, participants provided information about programs in which they were involved with after the event in order to evaluate the effectiveness of the programs and the potential impact they have for reducing PTSD.

Post-Traumatic Stress Disorder (PTSD) is a concept that has gained much attention in recent years as a result of long-term military missions in the Middle East and elsewhere, but full understanding of the disorder has not been reached by society as a whole. In fact, full understanding of the disorder has not been reached by the medical and academic communities as much must still be learned about the causes, symptoms, diagnosis, and treatment of PTSD. As more is known about the disorder it becomes

apparent it does not impact only a small number of soldiers returning from combat, but also affects their family, friends, and community members as well as others who suffer from PTSD as a result of trauma completely unrelated to war. According to the United States Department of Veterans Affairs' National Center for PTSD Research (2013), approximately eight percent of the United States' population will have PTSD during their lifetime with females being twice as likely as males to experience it. Additionally, approximately 5.2 million American adults have PTSD during a given year and approximately 60% of Americans experience trauma during their lifetimes. The National Center for PTSD separates types of PTSD trauma into four categories: war, terrorism, violence & abuse, and disasters. It is estimated that 10% to 18% of soldiers returning from deployment in Operation Enduring Freedom/Operation Iraqi Freedom will have PTSD (USDVA, 2013).

Survivors of terrorist attacks have lived through trauma that may have injured or killed family members or friends and where they themselves may have been injured. Violence and abuse found to be related to PTSD includes physical abuse, such as intimate partner violence (IPV) or a violent stranger attack as well as child or adult sexual assault (Steven Betts, Williams, Najman, and Alati, 2013). Natural disasters, such as tornados, hurricanes and earthquakes, can traumatize the survivors because of the severe damage and risk to their personal safety (USDVA, 2013). According to the PTSD Alliance, an organization of professionals and PTSD advocacy groups, the rate individuals experience PTSD after surviving a non-war related trauma varies based on the trauma. According to this organization, the PTSD rate for each trauma is: rape (49 percent), severe beating or physical assault (31.9 percent), other sexual assault (23.7 percent), serious accident or

injury (16.8 percent), shooting or stabbing (15.4 percent), sudden, unexpected death of family member or friend (14.3 percent), child's life-threatening illness (10.4 percent), witness to killing or serious injury (7.3 percent), and natural disaster (3.8 percent) (Mesa, 2013). As a result of this research, it appears events where an individual is specifically targeted or is the victim of a violent act are more likely to cause PTSD than events that happen to a friend or family member.

The study of the relationship of gender and occurrence of PTSD has produced mixed results. In some studies, females report higher levels of PTSD and also report more physical ailments, but other studies report virtually no difference between genders (Kroenke & Spitzer, 1998; Tolin & Foa, 2006). It appears the type of trauma experienced and surrounding factors may impact gender results of PTSD. For example, physical violence has been shown to impact females more significantly relating to PTSD even though they are less likely to be victims of physical violence than males. Betts, Williams, Najman, and Alati (2013, p. 90) found "women were at a much greater risk of partial and full PTSD after experiencing physical assault when compared with males, and this gender-specific risk is greater at higher levels of PTSD". Essentially, women may be more likely to experience PTSD after a physical confrontation and likelier to have a high PTSD score as a result. They found no other gender differences related to other types of trauma (Steven Betts, Williams, Najman, and Alati, 2013). Glück, Tran, and Lueger-Schuster (2012) conducted research on elderly citizens of Austria who experienced the trauma of residing there during World War II. The results indicated life-time traumatization rates and rates of PTSD, PTSD I and PTSD II were equal among males and females (Glück, Tran, & Lueger-Schuster, 2012). The one area where males may be

more prone to PTSD than females is natural disasters. Yan, Yongshun, Jin, Xiaohui, Jieyun, Miaorui, and Chunhua, Guiying & Junying (2013) found male college students were more prone to PTSD than female college students following a natural disaster.

Military veterans have been found to be at a greater risk of developing PTSD than the civilian population because they are exposed to violent trauma. Also, they are more likely to develop physical problems associated with PTSD (Hoge et al., 2007; Agha, Lofgren, VanRuiswyk, & Layde, 2000). Female soldiers who were the victim of sexual assaults related to the military were nine times more likely to develop PTSD than non-victims. Much of the concern for military related sexual assaults stems from the military lifestyle. Soldiers live and work closely with each other so a victim may be constantly in contact with her rapist. Also, a victim may risk retaliation or banishment from the abuser or peers if the sexual assault is reported (Surís, Link-Malcolm, Chard, Ahn, & North, 2013).

Posttraumatic stress disorder can be developed through a variety of traumas. Although combat and other intentional trauma are often related to PTSD other non-intentional trauma can be factors. College students who survived an 8.0 Richter scale earthquake in the Sichuan province on May 12, 2008 that killed 69,227 people and injured 374,000 people were surveyed to determine the level of PTSD associated with the event. Researchers found 14.1% of the 2987 college students met the criteria for PTSD. Additionally, “the students who were injured in the earthquake, those who lost a first degree relative, and those confronted with dead bodies were more likely to express PTSD” (Yan, Yongshun, Jin, Xiaohui, Jieyun, Miaorui, and Chunhua, Guiying & Junying, 2013, p. 3). As a result of this research, it appears events where an individual

has a direct tie to an event or first-hand exposure are more likely to cause PTSD than events that happen to a friend or family member. When related to the current study, the study by Yan et al. (2013) may indicate officers who were injured or experienced trauma first-hand are likely to meet PTSD criteria.

Researchers have also studied a possible link between cancer and PTSD. Being diagnosed with cancer can be a very stressful event for a person, but the question was raised as to whether it was sufficient enough to produce PTSD. PTSD-related cancer studies typically revolve around a single type of cancer which produces a problem of generalization of the research. Breast cancer being the most prevalent cancer type studied. In a study conducted with Hodgkin's lymphoma survivors, researchers determined they were no more likely to have PTSD than a control group of siblings who did not have the disease. The use of a sibling control group was very effective and proper because it helped control outside factors, such as traumas during childhood, which may influence the results (Varela, Ng, Mauch, & Recklitis, 2013).

Several studies have addressed PTSD in individuals involved in vehicle crashes. Results of studies on PTSD and automobile crashes have found results lower than 1% and as high as 39% (Blanchard, Hickling, Taylor, & Loos, 1995; Koren, Arnon, & Klein, 1999; Schnyder, Moergeli, Klaghofer, & Buddeberg, 2001; Ursano, Fullerton, Epstein, Crowley, Kao, Vance, Craig, Dougall, & Baum, 1999). Variations in the results could be related to research methods and sample make-up. The study that resulted in an extremely low rate utilized clinical interviews rather than a questionnaire to determine if participants met PTSD criteria. Furthermore, one of the studies with higher results included a sample comprised of 68% women and prior research has documented that



women are roughly twice as likely to be diagnosed with PTSD as men (Betts, Williams, Najman, and Alati, 2013; Blanchard, Hickling, Taylor, & Loos, 1995). Regardless of the specific rate of PTSD resulting from automobile crashes it is important to note that this type of trauma is significant enough to produce PTSD.

Children present a particular difficulty in regard to PTSD. As previously described many of the methods for evaluating PTSD are questionnaires that present difficulty to children and even adolescents. Scheeringa, Wright, Hunt, and Zeanah (2006) evaluated the current PTSD criteria in diagnosing children with PTSD by conducting interviews with children who were inpatients in a Level I trauma hospital following significant injuries and their parents or caregivers. The average age of the participants was 10 years old. They concluded the requirement of three items in the avoidance/numbing category is not appropriate for pre-school aged children due to their developmental stage and lack of ability to articulate. They further found analysis of both child and parent interview answers produced an almost doubled rate of PTSD when compared to only the child's interview or parent's interview. The implication of this finding is that many cases of PTSD in children could be underreported or misdiagnosed if based solely on just the child's or just the parent's responses (Meiser-Stedman, Smith, Glucksman, Yule, & Dalgleish, 2008; Scheeringa, Wright, Hunt, & Zeanah, 2006).

Much like adult studies, studies into the primary causes of PTSD in children have produced mixed results. Although traumas such as physical violence, sexual assault, and motor vehicle crashes have the potential to induce PTSD in adults and children, children may also be affected by situations that would produce indifference in adults. For example, witnessing a caregiver being threatened, police arrest of a caretaker, multiple

changes in caretaker, funeral ceremonies and witnessing violence on television were each found to be significant enough of a trauma to produce PTSD in children (Kousha & Tehrani, 2013; Loeb, Stettler, Gavila, Stein, & Chinitz, 2011; Meiser-Stedman, Smith, Glucksman, Yule, & Dalgleish, 2008; Scheeringa, Wright, Hunt, & Zeanah, 2006).

Some individuals, such as first responders, are diagnosed with PTSD after witnessing or responding to a trauma with rates ranging from 5% to 32% (Epstein, Fullerton, & Ursano, 1998; Fullerton, Ursano, & Wang, 2004; Guo, Chen, Lu, Tan, Lee, & Wang, 2004; North, Tivis, McMillen, Pfefferbaum, Spitznagel, Cox, Nixon, Bunch, & Smith, 2002; Ozen & Aytakin, 2004, Ursano, Fullerton, Epstein, Crowley, Kao, Vance, Craig, Dougall, & Baum, 1999). A study of rescue and recovery workers from the September 11, 2001 terrorist attack on the World Trade Center found volunteers, construction workers, and sanitation workers who responded to assist the rescue and recovery efforts on the day of the attack or within the following nine months were found to have the highest rates of PTSD when compared to firefighters, rescue workers, or police. Police were found to be half as likely as firefighters or rescue workers to have PTSD when interviewed by researchers. Possible explanations include psychological screening procedures used in police hiring process that may result in resilient employees, underreporting of PTSD by police because they carry firearms as part of their job and might fear department backlash, or the scene security role of police rather than direct victim recovery role of rescue workers that occurred in the months after the attack (Perrin, DiGrande, Wheeler, Thorpe, Farfel, Brackbill, 2007).

Stephens, Long, and Miller (1997) surveyed five hundred twenty-seven officers from the New Zealand Police Department with questions relating to the impact or trauma

and social support on PTSD among the officers. They included the following critical incidents or traumatic stressors: robbery, physical assault, sexual assault, tragic death, motor vehicle crash, combat, fire, natural disaster, other hazard, deliberate killing by police officer, deliberate or accidental death of a police officer, accidental death or injury of a member of the public by a police officer, work with victims of disturbing homicides, attendance at severe accidents, and disaster victim identification work. These stressors were utilized for the study because they were included on the traumatic stress schedule as developed by Norris (1990) or they were events that required mandatory debriefing according to New Zealand Police policy. Social support was measured using the following categories: emotional support from peers, supervisors, and non-work sources, content of communication with supervisors and peers, the ease of talking about trauma at work, and attitudes about expressing emotion at work. The study found support for their prediction that “PTSD symptoms would be positively correlated with the number of traumatic experiences” or the more critical incidents an individual is involved with the more likely he/she is to display PTSD symptoms (Stephens, Long, and Miller, 1997, p. 311). They also found their “second prediction that PTSD symptoms would be negatively related to social support was supported, for social support from peers, social support from supervisors, and for social support from outside work” (Stephens, Long, and Miller, 1997, p. 311). Stephens, Long, and Miller (1997) identified several issues relevant to the proposed study during their research. They had a response rate of 52% for survey responses with feedback stating the “low rate was attributed primarily to police officers’ resistance to additional paperwork, distrust of the police organization, and cynicism regarding the adverse effects of traumatic experiences” (Stephens, Long, and

Miller, 1997, p. 306). Additionally, they found strong support for peer support programs in which fellow law enforcement officers provide assistance to officers involved in critical incidents. (Stephens, Long, and Miller, 1997) Although their study was conducted in a separate country and culture it remains relevant to the current proposed study because of the nature of law enforcement and the involvement of officers in traumatic events since the job of law enforcement is to respond to traumatic or extreme situations to offer assistance regardless of the nation in which it occurs.

A similar study completed by Collins and Gibbs (2003) found similar results. They used the General Health Questionnaire (GHQ12) for analysis of mental health and determined 41% of the 873 constables and sergeants they studied scored high on the evaluation, called 'Cases' in the study, and were considered to have "a statistically significant probability of psychological morbidity" (Collins and Gibbs, 2003, p. 258). Collins and Gibbs' (2003) study focused on officer stress rather than PTSD, but they found 'Cases' were slightly more likely to be older and were significantly more likely to be female and divorced or separated.

In a study of gender and police stress, He, Zhao, and Archbold (2002) found female officers had "statistically significant higher levels of somatization and depression compared to their male counterparts", but did not find any significant difference relating to anxiety (p. 698). They found differences in positive coping strategies used by males and females. Females were more likely to utilize spiritual guidance, consulting with spouse, consulting with other family members, or consulting with friends when handling stress (He, Zhao, & Archbold, 2002).

Oehme, Donnelly, and Martin (2012) examined the relationships between alcohol abuse, PTSD, and domestic violence among law enforcement officers. They utilized the PTSD Checklist (PCL-M), which is a version of the tools that will be utilized in this study, as a screening tool for PTSD. Self-reported alcohol use and domestic violence was used for the analysis. Their results obtained utilizing data from 853 participants indicated a 17.7% rate of PTSD among the officers, higher than average drinking rates, and 28.6% reported being physically violent with a family or household member. Additionally, the results indicated a significant relationship between PTSD and physical violence with PTSD officers being four times more likely to commit domestic violence than non-PTSD officers. The combination of PTSD and alcohol use indicated an even higher level of domestic violence occurrences (Oehme, Donnelly, and Martin, 2012).

Since posttraumatic stress disorder is a psychological disorder it stands to reason that many of the symptoms are related to mental health. Individuals with PTSD often experience difficulty sleeping, nightmares, uncontrollable thoughts, feeling estranged from others, depression, anxiety, or aggression (Skotnicka, 2012; Yan, Yongshun, Jin, Xiaohui, Jieyun, Miaorui, and Chunhua, Guiying & Junying, 2013). In a survey of soldiers post-deployment in Iraq and found depression and anxiety levels were only slightly higher for the study group of soldiers returning from combat than the control group of soldiers who had not been deployed. However, the study group showed much higher rates of aggression than the control group (Skotnicka, 2012). This indicates a potentially significant issue for society after a long-term military campaign. An influx of soldiers who have experienced trauma and are more aggressive as a result could lead to physical altercations among strangers, domestic partners, or with law enforcement.

Individuals who are trained and conditioned to react swiftly and violently to a perceived threat and then spend an extended period of time in a heightened state of awareness and danger may have lasting effects. Therefore, proper diagnosis and treatment for PTSD as well as education for law enforcement and the community at large is important.

In addition to the psychological impact of Post-Traumatic Stress Disorder, a number of other effects are also possible. These effects include physical ailments such as nausea, constipation, angina, shortness of breath, dizziness, fatigue, headache, backache, asthma, irritable bowel syndrome, heart disease, and fibromyalgia among others. Pacella, Hruska and Delahanty (2013) studied physical health outcomes from general health, health-related quality of life, cardio-respiratory health, greater musculoskeletal pain, and gastrointestinal health among PTSD patients. They found that “victims of intentional trauma (i.e., combat exposure) display higher risk of developing PTSD than victims of unintentional trauma” (Pacella, Hruska, & Delahanty, 2013, p. 42). Additionally the study indicated all of the health categories studied were significantly related to a PTSD or PTSS diagnosis with general health symptoms having the highest correlation followed by medical conditions, health-related quality of life, gastrointestinal health, and cardio-respiratory health. It is not surprising that the general health category was most related to PTSD/PTSS because the category is broad in what it covers. Patients in a hyperaware or anxious state may be more aware or bothered by health concerns (Pacella, Hruska, & Delahanty, 2013). Increased blood pressure and heart rate are often associated with PTSD and are likely related to the hyper-arousal criterion, but the exact cause is unknown. Research found higher resting blood pressure and heart rates among younger

male veterans with combat related PTSD when compared with younger male veterans without PTSD (Paulus, Argo, & Egge, 2013).

Another potential health risk associated with PTSD is cigarette smoking. Studies indicate individuals who suffer from PTSD are more likely to be smokers and are more likely to consume more than 25 cigarettes per day and take larger puffs (Beckham, Kirby, Feldman, 1997; McClernon, Beckham, Mozley, Feldman, Vrana, & Rose, 2005). A possible reason for the high level of smoking among PTSD sufferers is the effect on the body of the nicotine within the cigarettes as it relates to their emotional states. One study found PTSD smokers “reported greater levels of [negative affective] immediately prior to smoking and greater decreases in [negative affective] following smoking” (Froeliger, Beckham, Dennis, Kozink, & McClernon, 2012, p. 5). The researchers found nicotine-deprived smokers with PTSD reacted stronger to emotional cues than those not nicotine-deprived. Negative affective is essentially an overall low emotional state. The effect of the nicotine on each participant could indicate why PTSD sufferers often begin smoking. The participant’s survey responses were confirmed using brain scan images during the survey process (Froeliger, Beckham, Dennis, Kozink, & McClernon, 2012).

Another PTSD-related concern is suicide and mortality. A few of the studies conducted on combat veterans found the individuals with PTSD had shorter life spans than those without. The manner of death for these individuals included homicide, suicide, accidental poisoning, motor vehicle crashes, accidental deaths, and internal causes (Agha, Lofgren, VanRuiswyk, & Layde, 2000; Boehmer, Flanders, McGeehin, et al., 2004; Boscarino, 2004; Boscarino, 1997; Boscarino, 2006a; Boscarino, 2006b; Crawford, Drescher, & Rosen, 2009; Flood, Boyle, Calhoun et al., 2010). Furthermore,

younger veterans with PTSD and depression are at a higher risk to die by their own hand than older veterans who do or do not have PTSD (Zivin, K., Kim, H. M., McCarthy, J. F., et al., 2007). Boscarino (2006b) found that early death by study participants did not appear to be related to the level of combat to which they were exposed, but the likelihood of acquiring PTSD was directly related to the level of combat experienced. Kimbrell et al. (2011) studied mortality rates of veterans who had received the Purple Heart for being wounded in combat, veterans with PTSD, and veterans with or without a combination of these. They found veterans with a Purple Heart and PTSD as well as Purple Heart recipients without PTSD had a much lower mortality rate than those without a Purple Heart who either did or did not have PTSD. Veterans with PTSD, but without a Purple Heart had a 10% higher risk of mortality than veterans without PTSD or a Purple Heart (Kimbrell et al, 2011).

According to the clinical definition in the Fourth Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), posttraumatic stress disorder is diagnosed when an individual has been exposed to a trauma, commonly referred to as a stressor, with specific characteristics and displays certain symptoms in each of the following three categories: intrusive recollections, avoidant/numbing symptoms, and hyper-arousal symptoms (Pacella, Hruska, & Delahanty, 2013; USDVA, 2013). A stressor occurs when an individual has “experienced, witnessed, or been confronted with an event or events that involve actual or threatened death or serious injury, or a threat to the physical integrity of oneself or others” and “the person's response involved intense fear, helplessness, or horror” (USDVA, 2013).



The second criteria of intrusive recollections are met when the individual experiences one of more of the following:

Recurrent and intrusive distressing recollections of the event, including images, thoughts, or perceptions; Recurrent distressing dreams of the event; Acting or feeling as if the traumatic event were recurring (includes a sense of reliving the experience, illusions, hallucinations, and dissociative flashback episodes, including those that occur upon awakening or when intoxicated); Intense psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event; or Physiologic reactivity upon exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event. (USDVA, 2013)

The third criterion of avoidance/numbing is described as avoiding thoughts, conversations, or situations related to the trauma. This criterion is satisfied when three or more of the following are present:

Efforts to avoid thoughts, feelings, or conversations associated with the trauma; Efforts to avoid activities, places, or people that arouse recollections of the trauma; Inability to recall an important aspect of the trauma; Markedly diminished interest or participation in significant activities; Feeling of detachment or estrangement from others; Restricted range of affect (e.g., unable to have loving feelings); or Sense of foreshortened future (e.g., does not expect to have a career, marriage, children, or a normal life span). (USDVA, 2013)

The fourth criterion of hyper-arousal is met when two or more of the following symptoms are present: “Difficulty falling or staying asleep; Irritability or outbursts of

anger; Difficulty concentrating; Hyper-vigilance; or Exaggerated startle response” (USDVA, 2013). The fifth criterion is that the listed symptoms must not have been present before the trauma and must last for at least a month. The final criterion is that the disorder must significantly impact an individual on either a social, professional, or other important level. PTSD is considered to be acute if the symptoms last at least one month, but less than three months and chronic if they last longer than three months. Additionally, symptoms may not occur immediately after a trauma, but instead may take a while to manifest. Delayed onset PTSD is diagnosed when the symptoms occur six or more months after the traumatic event (USDVA, 2013).

An additional level of diagnosis is present in many academic journals relating to PTSD that is utilized when an individual’s symptoms do not reach the full criteria for PTSD, but are more significant than the average person’s ailments. An individual affected by PTSD Symptoms (PTSS or PTSD I or PTSD II) often suffers nearly as much as an individual with clinically diagnosed PTSD and deals with similar symptoms such as poor mental health and distress. Utilization of PTSS, PTSD I, and PTSD II designations as well as PTSD designation when conducting research produces a fuller picture of the impact of trauma as well as the lasting effects (Pacella, Hruska, & Delahanty, 2013; Glück, Tran, & Lueger-Schuster, 2012).

Diagnosis of posttraumatic stress disorder can be achieved by several means. The Posttraumatic Stress Disorder Checklist (PCL) has several different versions varying by subject. The civilian version of the test (PCL-C) is intended for the general public while the military version (PCL-M) is intended for veterans. In addition to different wording utilized between the PCL-C and PCL-M, the military version asks

respondents about stressful military experiences (U.S. Department of Veterans Affairs, 2013). The PCL-C consists of seventeen questions that correspond to the DSM-IV diagnosis criterion and rate each symptom on a five point scale with 1 being “none” and 5 being “very”. Each score of three or higher is considered significant and a full diagnosis of PTSD requires at least one significant response in the reexperiencing category, three significant responses in the avoidance category, and two significant responses in the arousal category (Weathers, Litz, Huska, & Keane, 1994). A probable diagnosis of PTSD I requires at least one significant response in the reexperiencing category and either three significant responses in the avoidance category or two significant responses in the arousal category. A probable diagnosis of PTSD II requires at least one significant response in each of the three categories (Glück, Tran, & Lueger-Schuster, 2012; Gravelly, Cutting, Nugent, Grill, Carlson, & Spont, 2011).

Betts, Williams, Najman, and Alati (2013) used the CIDI Auto, which is a computerized instrument administered by trained interviewers. This tool may be difficult for some research given the need for trained interviewers to administer it. The researcher found the instrument to be considered to have strong validity and reliability. In their use of the test, the researchers had survey participants select all traumatic experiences they had experienced from a list of ten events: exposure to combat or war, a life-threatening accident, a natural disaster, witness to death or injury, rape, sexual molestation, physical assault, threat with a weapon or kidnap, torture or terrorism, other, and disclosure of a friend’s trauma. Participants were asked to select the single event that most affected them if more than one event was selected and assert that they felt terrified or helpless during the event. In order to reach a diagnosis of PTSD for the study, participants had to

display at least one criteria in the reexperiencing category, such as recurrent and intrusive distressing recollections of the event, recurrent distressing dreams of the event or acting or feeling as if the traumatic event were recurring, among other possible similar criteria. Participants were also required to display at least two criteria in the hyper-arousal category, such as difficulty falling or staying asleep or irritability/outbursts of anger, and at least three criteria in the avoidance/numbing category, such as efforts to avoid thoughts, feelings, or conversations associated with the trauma or efforts to avoid activities, places, or people that arouse recollections of the trauma. Lastly, the symptoms were required to occur for at least a month. A diagnosis of partial PTSD was achieved if at least one symptom was experienced from each of the three categories (Steven Betts, Williams, Najman, and Alati, 2013).

The Posttraumatic Diagnostic Scale (PDS) can be used to assess PTSD and PTSS. The PDS uses a self-reporting format where participants indicate the type of trauma exposure and select the most troubling if more than one has occurred. The test includes questions relating to the subject's reactions immediately after the event and the time passed since the event. Participants are asked to answer questions relating to the 17 PTSD categories previously described using a four point scale and answer questions relating to symptom's interference with daily life during the previous month (Varela, Ng, Mauch, & Recklitis, 2013).

### **Chapter 3: Methodology & Design**

The current study evaluated individual psychological response to critical incidents by sworn and civilian employees of law enforcement agencies within the New River Valley area of Virginia. Officers are exposed to severe traumatic events, sometimes repeatedly, during their careers. As a result, these individuals may develop a coping strategy, either positive or negative, to handle each situation. This study will examine events in which they may be exposed, including the death of a co-worker, severe injury to themselves, a co-worker, or a citizen, officer involved shootings, severe motor vehicle crashes, sexual assaults, or crimes involving child victims.

Posttraumatic stress disorder is a psychological diagnosis that may occur when an individual has been exposed to a traumatic experience and experiences negative effects as a result that last for longer than a month. Other health concerns, such as physical ailments, alcohol abuse, depression, and suicide, are often reported by individuals diagnosed with PTSD, but were not addressed by the current study. While these topics are certainly important to the field of PTSD research, they are typically byproducts of the disorder and the current study is examining potential PTSD causes.

The primary objective of this study was to determine the PTSD rates among law enforcement employees of the New River Valley area of Virginia. Prior research has estimated PTSD rates among the general population of the United States around 3% to 8% and rates for PTSD in law enforcement officers ranging from 5% to 32% (Epstein, Fullerton, & Ursano, 1998; Fullerton, Ursano, & Wang, 2004; Guo, Chen, Lu, Tan, Lee, & Wang, 2004; North, Tivis, McMillen, Pfefferbaum, Spitznagel, Cox, Nixon, Bunch, & Smith, 2002; Ozen & Aytakin, 2004, Ursano, Fullerton, Epstein, Crowley, Kao, Vance,

Craig, Dougall, & Baum, 1999). Based on the variety of severe traumatic events that occurred in the New River Valley area of Virginia it was predicted that the psychological effects of these events will be felt by officers. It was also likely that officers have been involved in more than one severe traumatic event.

Three hypotheses were evaluated by the study:

1. Participants who report having been the victim of violence will indicate higher scores on the PTSD scale.
2. A relationship will exist between the number of coping strategies utilized after events by participants and their results on the PTSD scale.
3. Female respondents will have higher results on the PTSD scale than their male counterparts.

As previously stated, many critical incidents have occurred in the New River Valley area of Virginia during the past three decades. Some of the incidents include violence directed toward a member of law enforcement rather than a citizen. Prior studies have noted higher rates of PTSD among individuals who were the victims of violence, such as rape or physical assault, than individuals involved in other types of trauma such as natural disasters (Hoge et al., 2007; Agha, Lofgren, VanRuiswyk, & Layde, 2000; Yan, Yongshun, Jin, Xiaohui, Jieyun, Miaorui, and Chunhua, Guiying & Junying, 2013). This is likely due to the fact the aggression was oriented toward the participant rather than a random, natural act. Additionally, the victim may incur physical injuries that can be lasting reminders of the event.

Although much research has been conducted on PTSD additional research is needed, including this study, to evaluate why some individuals develop PTSD symptoms

and others do not. Previous research has investigated the relationship between talking through incidents after they occur and PTSD rates with positive results indicated for those who communicate with others (He, Zhao, & Archbold, 2002; Stephens, Long, and Miller, 1997). Several reasons exist why individuals, especially police officers, do not wish to discuss events after they occur. One of the symptoms of PTSD is avoidance in which an individual desires to forget the event and believes discussing it will make him/her relieve it. Additionally, police officers, especially males, may view showing their emotions as a weakness (He, Zhao, & Archbold, 2002; Stephens, Long, and Miller, 1997). They are required to hold themselves composed and react during extreme situations where the citizens around them are looking to them for guidance and assistance. Police officers may also have a distrust of individuals, especially mental health workers, outside of law enforcement and believe any emotions shared will be used against them (He, Zhao, & Archbold, 2002; Stephens, Long, and Miller, 1997). Programs such as debriefings, peer support, and Post Critical Incident Seminars are based on the premise that talking through a critical incident helps an individual cope with the event. Prior research has been mixed on the effectiveness of these programs. Several studies found support for coping programs, such as debriefings, where participant's mental health improved (He, Zhao, & Archbold, 2002; Stephens, Long, and Miller, 1997). However, additional studies have found debriefing programs to be no more effective than simply doing nothing while other studies have found debriefings may actually improve an individual's chances of developing PTSD (Carlier, Lamberts, Van Uchelen, & Bersons, 1998; Carlier, Voerman, & Gersons, 2000; van Emmerik,

Kamphuis, Hulsbosch, & Emmelkamp, 2002; Harris, Baloglu, & Stacks, 2002; Rose, Brewin, Andrews, & Kirk, 1999).

Prior research has identified a link between gender and PTSD rates. Typically, female participants report higher levels of PTSD rates than males in the general population as well as among police officers. One rationale for the difference is that female participants may be more willing to accurately report PTSD symptoms than males for the reasons discussed previously (Collins and Gibbs, 2003). One contradiction noted by He, Zhao, and Archbold (2002) was female participants in their study were more likely to report depression and somatization, but they were also more likely to report they had communicated with family members or friends about stressful situations.

### **Sample**

The sample was unique due to the events that have occurred in the area and the potential for participants to have been involved in multiple severely traumatic events. The New River Valley area of Virginia is considered rural and does not typically encounter “routine” violent crimes that are more typical of larger urban areas. During the past 20 years, four law enforcement officers have been killed in Montgomery County, Virginia. Additionally, two school shootings, including the Virginia Tech Massacre, numerous violent crimes, and several officer involved shootings occurred during this time. Officer Terry Griffith of the Christiansburg Police Department was killed by a shoplifting suspect with his own weapon on September 18, 1994. The suspect stole two vehicles, including a police vehicle, and fired at several law enforcement officers before being killed by Montgomery County Sheriff’s deputies. Officer Scott Hylton of the Christiansburg Police Department was also killed by a shoplifting suspect with his own



weapon on May 9, 2003. The suspect exchanged fire with Christiansburg Police Officers and Montgomery County Sheriff's deputies, one of whom was wounded, before being killed. On August 21, 2006, Corporal Eric Sutphin of the Montgomery County Sheriff's Office, who was the deputy previously injured in the shootout with Officer Hylton's killer, was killed during a manhunt for an escaped inmate. The inmate escaped from a hospital the previous day after severely beating another deputy and murdering a hospital security guard. The escapee was captured alive after the murders by members of the Blacksburg Police Department. Officer Derek Crouse of the Virginia Tech Police Department, who had formerly worked as a Corrections Deputy for the Montgomery County Sheriff's Office, was murdered during a traffic stop on December 8, 2011 by an individual unrelated to the stop. The suspect committed suicide a short time later as he was being approached by a Montgomery County Sheriff's Office Deputy (ODMP, 2013).

On April 16, 2007, a Virginia Tech student murdered two individuals in a dormitory on the campus of Virginia Tech. A short time later, the suspect murdered 30 people in an academic building after barricading the doors. He committed suicide as law enforcement officers attempted to gain entry into the building. Members of the Blacksburg Police Department, the Christiansburg Police Department, the Montgomery County Sheriff's Office, and the Radford City Police Department assisted the Virginia Tech Police Department with securing and processing the gruesome scene (Giduck & Bail, 2011). On April 12, 2013, a New River Community College student used a shotgun to fire numerous shots and wound two women at a satellite building for the college located at a shopping mall in the Town of Christiansburg. The suspect was apprehended by a Christiansburg Police Officer and an off duty mall security guard. Members of the

Blacksburg Police Department, the Montgomery County Sheriff's Office, the Radford City Police Department, and the Virginia Tech Police Department responded to assist the Christiansburg Police Department (Powell & Moxley, 2013).

In December of 2008, a mother and daughter were stabbed to death in their home in the Town of Christiansburg. The gory crime scene of the brutal attacks was discovered during a welfare check of the women. The suspect was located and charged, but committed suicide in his jail cell a short time later. Members of the Montgomery County Sheriff's Office assisted the Christiansburg Police Department with the crime scene investigation and handled the investigation of the suicide (Christiansburg murder suspect dead, 2008). In January of 2010, a male Virginia Tech student murdered a female Virginia Tech student by decapitating her in a campus food court while students and employees observed. The suspect was holding the head of the deceased in his hand when confronted by a Virginia Tech Police Department officer and was taken into custody (Roberts, 2009). On August 27, 2009, the bodies of two Virginia Tech students, who each lived off campus, but within the town limits of Blacksburg, were discovered in a National Forest recreational area. The students, one male and one female, were fatally shot in the parking lot of the area. Members of the Virginia Tech Police Department responded immediately to assist with identifying the deceased and investigation of the crime, which included notification of the decedent's roommates and close friends. A task force comprised of members from the Blacksburg Police Department, the Christiansburg Police Department, the Montgomery County Sheriff's Office, the Virginia Tech Police Department, and various state and federal authorities was established (Morrison, 2009).

Montgomery County, Virginia is approximately 400 square miles and encompasses the towns of Blacksburg and Christiansburg as well as the campus of Virginia Polytechnic Institute and State University (Virginia Tech). It is bordered to the west by the City of Radford which houses Radford University. Montgomery County, Virginia has a population of approximately 95,000 and the City of Radford adds an additional 16,000 residents to the area (US Census, 2013).

Four law enforcement agencies are based and operate primarily within Montgomery County, Virginia: the Blacksburg Police Department, the Christiansburg Police Department, the Montgomery County Sheriff's Office, and the Virginia Tech Police Department. Law enforcement duties within the City of Radford are handled primarily by the Radford City Police Department. Each of these five departments are full service law enforcement agencies comprised of Administration/Command Staff, Civilian Staff, Field Operations (Patrol) Division, Investigations Division, and Support Services Division including Crime Prevention. Additionally, the Montgomery County Sheriff's Office includes Corrections and Warrants/Civil/Courthouse Security Divisions.

The City of Radford has approximately ten square miles that the police department is responsible for patrolling. Members of the Blacksburg Police Department patrol and investigate crimes within the 20 square miles of the town in the northwestern part of the county while members of the Christiansburg Police Department operate within the 14 square miles of the town limits in the center of the county (US Census, 2013). Members of the Virginia Tech Police Department handle any offenses occurring on campus which resides within the geographic borders of the Town of Blacksburg. Montgomery County Sheriff's Office Deputies primarily patrol and investigate offenses

occurring inside the county that fall outside the borders of the towns and campus, but have jurisdiction within the entire county. Additionally, the Montgomery County Sheriff's Office maintains a jail within the county, provides security for the county's courthouse, and serves civil paperwork, such as subpoenas and levies, for all civil and criminal cases in the county.

Members of the Blacksburg Police Department, the Christiansburg Police Department, the Montgomery County Sheriff's Office, the Radford City Police Department, and the Virginia Tech Police Department work and train alongside one another routinely. Criminals do not adhere to jurisdictional boundaries so information must be shared between agencies for any of the departments to be fully effective. Also, members from within these agencies respond to major incidents within the jurisdiction of each other as needed. The departments maintain a mutual aid agreement between them authorizing officers from an outside agency to enter the jurisdiction of another agency to assist. For example, members of the Christiansburg Police Department can be requested to assist within the Town of Blacksburg if necessary.

Sworn law enforcement personnel from the Blacksburg Police Department, the Christiansburg Police Department, the Montgomery County Sheriff's Office, the Radford City Police Department, and the Virginia Tech Police Department each responded to most of the major incidents described previously. Members within each agency were often comingled with members of other agencies on entry or tactical teams as well as paired for investigations. Although many of the traumatic events have occurred within the Town of Blacksburg, members from all of the departments were highly involved and

deeply affected. Additionally, employees have moved from one of the agencies to a different agency within Montgomery County or the City of Radford.

### **Research Methodology**

Research can be conducted in several different manners depending on the amount of time, money, and other resources available to researchers. Additionally, the research question and the level or depth of data sought by the researcher helps determine which method is most appropriate. Certain research methods require little or no interaction with participants and other methods require confidence and rapport be gained by the researcher (Maxfield & Babbie, 2009).

Using a survey allows a researcher to distribute a large number of data collection instruments without excessive cost or exertion. The cost for surveys distributed by mail includes printing and postage. A survey distributed electronically and completed online saves the researcher these costs, but are more technical to create and maintain. Surveys administered in person still allow anonymity for the participant, but give researchers immediate results. The benefits of using surveys include anonymity for the participant, the potential for a large sample size which allows for powerful statistical analysis, and they are less time consuming for the researcher to administer. The limitations of surveys are the potential for low response rates, potential response bias by the participant, and the researcher does not view the participant in his/her natural setting (Maxfield & Babbie, 2009; Thistlewaite & Wooldredge, 2010).

This current research was conducted as a self-reported online survey of law enforcement employees from the Blacksburg, Christiansburg, Radford City, and Virginia Tech Police Departments as well as the Montgomery County Sheriff's Office. Permission

to distribute an online survey to all employees using their department issued email was obtained from the Chiefs of each police department and the Sheriff. Each department provided email addresses. These five departments employ approximately 450 employees and surveys were distributed to each of these employees. Due to the descriptive nature of this study, no control group was utilized for this study.

Research was conducted by distribution of online consent forms and surveys. The survey was intended to determine the participants' involvement in various critical incidents as a law enforcement professional and the effect of these incidents on each individual. Self-reporting surveys are an excellent tool for obtaining this information because they are brief and anonymous. Additionally, these can be easily distributed and completed. Individual interviews with each participant would be much more time consuming and result in less data. Surveys are limited by the questions they contain and the lack of follow-up questioning that interviews allow. Furthermore, surveys rely on the participant's honesty, but the use of anonymous surveys likely helps increase the reliability.

The benefits of this study relate directly to the overall welfare of individual officers, which then affects their families and the community at large. Better understanding of the types of events that produce disturbances for officers will allow better assessment and treatment. For example, psychological evaluations are typically only conducted locally prior to employment, but members of FBI task forces investigating child exploitation offenses are evaluated annually. Furthermore, debriefings are typically conducted locally only after major incidents, but the research may indicate a need for additional debriefings for other "minor" offenses that are not

traditionally thought of as traumatic to officers. Another benefit of the study will be to identify the need of services of individual departments. Potentially, the results could be used to justify mental health or training grants by each department.

The survey began with participants identifying their gender, race, age, and relationship status. Since gender has been identified in previous studies as a possible predictor of PTSD after certain traumas, this study examined this aspect directly. The study also examined race and age as possible predictors although previous studies have not directly tied these factors to PTSD. The only exception to age relating to PTSD involves children and that is irrelevant for this study since no children were surveyed. Relationship status was divided into five categories: committed relationship, but not married; divorced; married; separated; single; and widowed. Divorce rates among law enforcement officers have previously been examined and the information obtained in this research further examines that topic as well as determine if any link between PTSD and relationship status exist (McCoy & Aamodt, 2009).

Current job description for each participant was selected from the following list: Administration/Command Staff, Civilian Employee (Not Dispatch), Corrections, Dispatch, Field Operations (Patrol), Investigations, Support Services (Crime Prevention, School Resource Officer, etc.), and Warrants/Civil/Courthouse Security. Examining the relationship between the levels of PTSD among different job types may identify which roles are more conducive to PTSD. Additionally, the length of time each participant has been employed was also be evaluated. This aided in determining any possible correlations between years of service and PTSD. For example, an employee with many years of service who has encountered numerous minor incidents may display as many

PTSD characteristics as a newer employee who has been involved in a serious critical incident.

The survey evaluated each participant's involvement in numerous critical incident types including: line of duty death of a co-worker, officer involved shootings, school or workplace violence, severe accidental injury to a co-worker, severe violent injury to a co-worker, severe accidental injury to themselves, severe violent injury to themselves by a suspect, working a fatal motor vehicle crash, working a death or serious injury to a child, working a sexual offense involving a child victim, working a sexual offense involving an adult victim, or working a physical domestic assault (non-sexual assault). Participants were also able to identify incidents that troubled them which were not among the list. Each participant identified the number of each event type in which he/she was involved or that have dramatically affected them. Categories for this question included: one event, two events, three events, four events, five or more events, and N/A. Given the thirteen different categories it was entirely possible for a participant to indicate he/she was involved in or affected by as few as none or more than 65 events.

Participants were asked to identify their involvement in each particular event in which they indicated they were directly involved or affected by. Participants were not restricted to a single selection, but instead were asked to select each role they had during the event. Categories for line of duty death involvement included: dealt with suspect, provided medical aid to victim, notified or involved with victim's family (during or after event), responded to scene after event was over (scene security, investigation, etc), supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff), identify or sympathize with victim ("It could have been me/my family."), loss of friend/co-worker,



and any other role in which they will be asked to describe. Categories for officer involved shootings included: fired at suspect, provided medical aid to suspect, provided medical aid to someone other than suspect, notified or involved with suspect's family (during or after event), responded to scene after event was over (scene security, investigation, etc), supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff), identify or sympathize with officers involved ("It could have been me/my family."), and any other role in which he/she was asked to describe. Similar categories were listed for each of the other critical incident types except accidental injury to self and violent injury to self by a suspect. These categories were different from the others in that they involved a severe injury to the participant which would likely limit their additional roles in the event and several of the other categories would not apply.

Participants were asked to identify the one single critical incident and the specific role that most bothered or affected them at the time of the survey. The selection was made from all of the choices previously mentioned relating to critical incidents. It was important for one specific event and role to be identified by each participant in order to be assessed using the PTSD scale. Each individual was also asked to identify the length of time since the offense. This factor was important when evaluating the level of PTSD. For example, many people experience symptoms immediately after the event, but notice the symptoms fade after a short period of time. PTSD is diagnosed when an officer who experienced trauma several years prior has significant long term symptoms.

Participants were administered the PCL-C questionnaire. This questionnaire was a self-reported instrument designed to evaluate PTSD in participants. This tool has been used extensively for PTSD identification and research. It is considered reliable and

validated in determining symptoms of PTSD in users (Glück, Tran, & Lueger-Schuster, 2012; Oehme, Donnelly, & Martin, 2012; Wilkins, Lang, & Norman, 2011). Participants were asked to answer based solely on the single event and role they identified previously as being the most bothersome to them. The PCL-C questionnaire used a Likert scale with rankings of: not at all, a little bit, moderately, quite a bit, and extremely. Participants were asked to answer questions about how often they experience various symptoms that correspond with the symptoms listed in the PTSD diagnosis. These symptoms included: repeated, disturbing memories, thoughts, or images of a stressful experience from the past; repeated, disturbing dreams of a stressful experience from the past; suddenly acting or feeling as if a stressful experience were happening again (as if you were reliving it); feeling very upset when something reminded you of a stressful experience from the past; having physical reactions (e.g., heart pounding, trouble breathing, or sweating) when something reminded you of a stressful experience from the past; avoid thinking about or talking about a stressful experience from the past or avoid having feelings related to it; avoid activities or situations because they remind you of a stressful experience from the past; trouble remembering important parts of a stressful experience from the past; loss of interest in things that you used to enjoy; feeling distant or cut off from other people; feeling emotionally numb or being unable to have loving feelings for those close to you; feeling as if your future will somehow be cut short; trouble falling or staying asleep; feeling irritable or having angry outbursts; having difficulty concentrating; being “super alert” or watchful on guard; and feeling jumpy or easily startled (Weathers, Litz, Huska, & Keane, 1994).

Participants were asked to describe their involvement in debriefings, Post Critical Incident Seminars, counseling, meeting with a Chaplain, communicating with a spouse or significant other, communicating with other family members, communicating with co-workers, and communicating with friends outside of law enforcement. Debriefings are conducted immediately after critical incidents and allow those involved to describe their involvement in the event and discuss how it impacted them as well as hearing from others involved about their involvement. They allow employees to express feelings and emotions in a safe environment with fellow officers. The model of debriefing currently used in the New River Valley is the Critical Incident Stress Management or Critical Incident Stress Debrief developed by Mitchell and Everly (1996). Debriefings under this model are led by a mental health professional and trained peer support members, typically law enforcement officers with specialized training. The model is broken into seven phases: introduction, fact, thought, reaction, symptoms, teaching, and reentry (Mitchell & Everly, 1996). Post Critical Incident Seminars are similar to debriefings, but are typically attended several months or years after the incident. These seminars are longer than debriefings, are typically more in-depth, and are coordinated by a mental health professional. Chaplains are members of clergy who serve with law enforcement officers. They may be sworn or civilian and provide services to officers including counseling and spiritual guidance.

Each participant was asked to indicate if he/she was involved with the first four categories listed above after the event that bothers them the most. If they indicated they were involved, they indicated if the involvement was their choice or if they were instructed to attend and they indicated how helpful it was to them after the event using a

Likert scale of: none, very little, neutral, moderately, and a lot. Participants who indicated they did not attend were asked to select the reason from the following categories: it was not offered; it was offered, but they chose not to attend; it was offered, but they could not attend because of scheduling; it was offered, but they were not notified; and it was offered, but they were not allowed to attend. For each question relating to communication with others, the participants were asked to indicate if they did or did not discuss the event with each group or individual. If they indicated they discussed it they were asked to indicate how helpful it was using the same Likert scale listed above. If participants indicated they did not communicate with each specific group or individual they were asked to select their reason from the following choices: I did not want to discuss or relive the event; I wanted to protect them from the event; or Other (and they will be asked to explain further).

Lastly, participants were asked to identify which department they were employed by. This question, much like all of the other questions, was optional. Participants may have decided after answering the sensitive questions in the survey that they may be more likely to be identified if they list their department even though the survey was intended to be completely anonymous. This category was used to determine the makeup of the sample size to ensure it accurately represented all five departments rather than only a single department.

### **Analytical Plan**

Participants of this study were asked to provide individual characteristics, age, gender, race, years of law enforcement experience, current job positions, and relationship status, for use during the study. Univariate analysis was conducted on these

characteristics in order to evaluate the composition of the sample including frequencies, measures of central tendency and measures of statistical dispersion. Determining the frequency of a variable involves establishing how many of each answer exist in the sample and the percentage of each response that comprise the sample. For example, the frequency of gender was divided between male and female respondents while answers to coping situations will include multiple response categories. Measures of central tendency are mean, median, and mode. Responses for gender were coded 0 for female participants and 1 for males. Mean is the average of all responses after they have been coded while median is the exact middle of the sample size. Mode is the most frequently occurring response. Measures of statistical dispersion include range, variance, and standard deviation. Range of a variable indicates the distance between the highest and lowest results. Variance indicates the sum of the squared deviations divided by the number of cases in the population, or by the number of cases minus one in the sample and standard deviation is the square root of variance. The frequency and distribution of critical incidents, roles in critical incidents, and coping situations in which participants have been involved was calculated as well as evaluating scores on the PCL-C to determine PTSD rates. Cross-tabulation analysis was used to further evaluate the population composition. This type of analysis allows two or more variables to be compared. For example, the population of the proposed study was evaluated by race and gender or gender and current job assignment (see table 1 and table 2). Additional bivariate analysis was conducted using Pearson's  $r$ , which determines if a correlation exists between variables. Correlation exists when a change in one variable causes a change in another variable.

Ordinary least squares regression analysis of multivariates was utilized to compare PTSD scores with individual's characteristics, types of critical incidents, roles in these incidents, and coping situations. Ordinary least squares regression is utilized when evaluating relationships between "two or more predictor variables and a single dependent variable" (Urdan, 2010, p. 145). This information is useful in determining if two characteristics, such as gender or age, or situations, such as being involved in an officer involved shooting or handling a fatal motor vehicle crash, alters PTSD rates. Ordinary least squares regression and logistic regression was also utilized to compare multiple independent variables, such as age, gender, type of event, or coping resources utilized, to the dependent variable of PTSD rates. This analysis assisted in determining what factors and interactions alter PTSD rates.

All three hypotheses: that participants who reported having been the victim of violence indicated higher results on the PTSD scale; that a relationship existed between the number of coping strategies utilized after events by participants and their results on the PTSD scale; and that female respondents had higher results on the PTSD scale than their male counterparts, were specifically addressed using bivariate linear regression analysis.

## **Chapter 4: Analysis**

Surveys were distributed to members of five law enforcement agencies within the New River Valley in Virginia. Nearly 450 total surveys were distributed with one employee's email being returned undeliverable each time and one survey being sent to the researcher who is also an employee. Of the 450 possible participants solicited for inclusion, responses were received from 110 employees (24% response rate). Surveys were distributed via email and collected for two weeks with two additional email solicitations sent during the period. Of the 110 responses, 109 individuals agreed to participate with one individual declining. Respondents' characteristics are summarized in

Table 1. The sample was comprised of 79 males (72%) with two missing/unknown responses. Race was initially divided into four categories, African American, Caucasian, Hispanic, and Other, but was combined into Caucasian and Non-Caucasian for analysis due to the low number of Non-Caucasian responses. The sample was comprised of 103 Caucasians (94%) and four Non-Caucasians (3%) with three missing/unknown responses. Similarly, relationship status was combined into Committed and Non-Committed relationships. The Committed category included participants who stated they were married or in a committed relationship while the Non-Committed category included single, divorced, separated, and widowed responses. The sample was comprised of 98 (89%) individuals in a committed relationship with two missing/unknown responses.

Other variables were also evaluated to determine the make-up of the sample. The largest Division category of respondents was the Field Division (Patrol) with 41 responses (37%) followed by Administration/Command Staff with 20 responses (18%) and Investigations with 17 responses (15%). All other categories had single digit responses with two missing/unknown answers. The sample was comprised of 78% Non-Veterans (86 responses) with two missing/unknown responses. Respondents' ages ranged from 23 to 60 with a mean of 39.12. The number of years in law enforcement ranged from one to 37 with a mean of 14.35.



Table 1: Sample composition by individual characteristics

n=109		Amount	
		Count	%
Gender	Male	79	72
	Female	29	26
	Missing/Unknown	2	2
Race	Caucasian	103	94
	Non-Caucasian	4	3
	Missing/Unknown	3	3
Relationship Status	Committed relationship/Married	98	89
	Divorced/Separated/Single	10	9
	Missing/Unknown	2	2
Division	Administration/Command Staff	20	18
	Civilian employee (Not Dispatch)	6	6
	Corrections	5	5
	Dispatch	7	6
	Field Operations (Patrol)	41	37
	Investigations	17	15
	Support Service	8	7
	Warrants/Civil/Courthouse Security	4	4
Missing/Unknown	2	2	
Veteran Status	Veteran	22	20
	Non-Veteran	86	78
	Missing/Unknown	2	2

Participants were asked to select the number of occurrences, ranging from one to five or more, of critical incidents that dramatically affected them from the following list: line of duty death of a co-worker, officer involved shootings, school or workplace violence, severe accidental injury to a co-worker, severe violent injury to a co-worker, severe accidental injury to themselves, severe violent injury to themselves by a suspect, working a fatal motor vehicle crash, working a death or serious injury to a child, working a sexual offense involving a child victim, working a sexual offense involving an adult victim, working a physical domestic assault (non-sexual assault), or other. Eighty-two participants indicated they had been involved or affected by at least one line of duty death of a co-worker with a mean of 2.20 occurrences while 62 participants indicated they had been involved or affected by at least one event involving school or workplace violence with a mean of 1.55. Four other categories, death or serious injury to a child, physical domestic violence, working a fatal motor vehicle crash, and officer involved shooting, had total responses ranging from 52 to 60 for each category.

The 109 participants had 1388 responses for critical incident involvement which indicates a mean of 12.6 critical events for each participant. The range of critical incident involvement was 0 to 40. Participants were asked to indicate their involvement or role in each event with multiple answers possible. The results, summarized in Table 2, indicated the 109 participants reported 2543 different roles they had taken for the 1388 different events. The range of critical incident roles was 0 to 102 with a mean of 23.1.

Participants were asked to indicate which single event type and role were most bothersome to them at the time of the survey (see Table 3). Ninety individuals answered the question and 50 indicated a role associated with a line of duty death was most

troubling (56%). Of those 50 respondents, half indicated they were most bothered by the loss of a friend/co-worker. The second highest most impactful event was a school or workplace violence event with 13 respondents listing this as most troubling (14%). The next highest category was death or serious injury to a child (9%) followed by officer involved shootings (8%). The length of time since the most significant critical event ranged from 0.08 years to 21 years with a mean of 5.6 years.

Table 2: Responses for Most Impactful Role for Line of Duty Death Events

Most Impactful Role for Line of Duty Death Events	Response	
	Count	%
Line of Duty Death - Dealt with suspect	4	8%
Line of Duty Death - Provided medical aid to victim	3	6%
Line of Duty Death - Notified or involved with victim's family	2	4%
Line of Duty Death - Responded to scene after event was over (Scene security, investigation, etc)	5	10%
Line of Duty Death - Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)	3	6%
Line of Duty Death - Identify or sympathize with victim ("It could have been me/my family.")	4	8%
Line of Duty Death - Loss of friend/co-worker	25	50%
Line of Duty Death - Other	4	8%
Total	50	100%

Table 3: Critical Incident Involvement by Number of Occurrences

Question n=1388	Number of occurrences					Total Responses	Mean	Responses for Most Impactful Event
	One occurrence	Two occurrences	Three occurrences	Four occurrences	Five or more occurrences			
Line of duty death	29	24	17	8	4	82	2.20	50
Officer involved shooting	20	15	11	3	3	52	2.12	7
Severe violent injury to co-worker	19	9	4	2	2	36	1.86	0
Severe accidental injury to co-worker	17	6	3	2	1	29	1.76	0
Severe intentional violent injury to you by a suspect	6	0	1	0	0	7	1.29	0
Severe accidental injury to you	12	1	0	0	1	14	1.36	0
Working a fatal motor vehicle crash	15	7	7	6	19	54	3.13	3
Death or serious injury to a child	23	14	9	2	12	60	2.43	8
Sexual offense involving child victim	13	10	4	6	16	49	3.04	3
Sexual offense involving adult victim	10	5	8	2	23	48	3.48	0
School or workplace violence	41	12	7	0	2	62	1.55	13
Physical domestic violence	10	7	5	0	34	56	3.73	2
Other	6	0	0	0	2	8	2.00	4

This study utilized the civilian version of the Posttraumatic Stress Disorder Checklist (PCL-C) for evaluation of PTSD among law enforcement officers. The PCL-C was utilized to evaluate psychological impact of the critical incidents to participants. Each individual was asked to answer based solely on the single event and role they identified previously as being the most bothersome to them. The PCL-C questionnaire uses a Likert scale with rankings of: not at all, a little bit, moderately, quite a bit, and extremely. Participants were asked to answer questions about how often they experience various symptoms that correspond with the symptoms listed in the PTSD diagnosis. If all questions are answered, the possible scores for the PCL-C were 17 to 85. The results (shown in Figure 1 and Table 4) indicated a range of 0 to 61 with a mean of 26.92 due to some participants only partially answering the questions. The first five questions on the PCL-C correspond to the reexperiencing category. Thirty-nine of the 99 participants (39%) who answered the questions related to reexperiencing indicated they experienced at least one of the symptoms moderately, quite a bit, or extremely. Question numbers six through twelve on the PCL-C correspond to the avoidance category. Thirty-nine of the 99 participants (39%) who answered the questions related to avoidance also indicated they experienced at least one of the symptoms moderately, quite a bit, or extremely. The final five questions on the PCL-C correspond to the arousal category. Fifty-four of the 99 participants (54%) who answered the questions related to arousal indicated they experienced at least one of the symptoms moderately, quite a bit, or extremely.

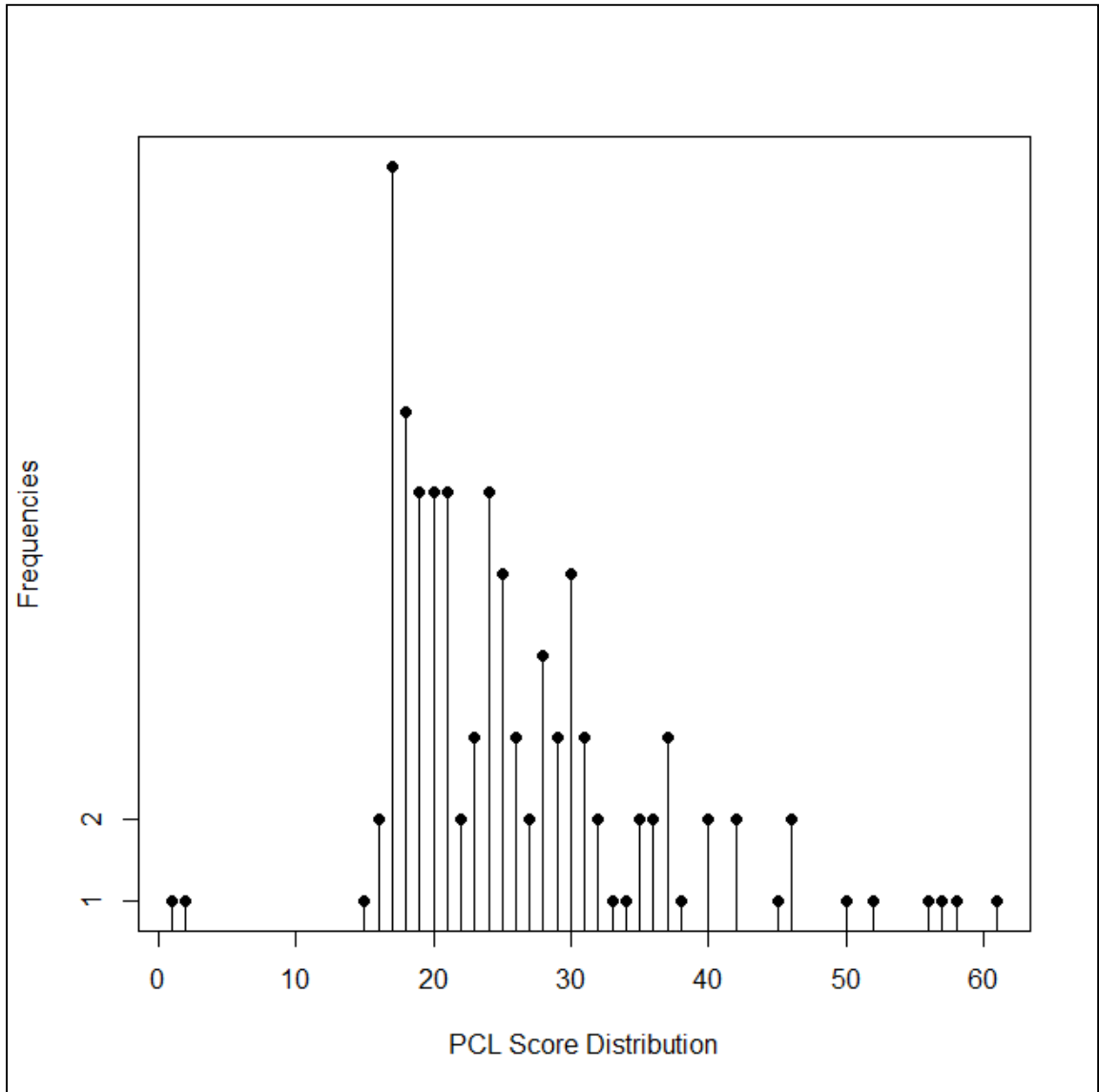


Figure 1: Distribution of PCL Scores

Table 4: Post-Traumatic Stress Disorder Score by Variable

PTSD Score		Minimum	Median	Mean	Maximum
Entire Sample		1	24	26.92	61
Gender	Male	1	26	28.09	61
	Female	15	21	23.7	46
Race	Caucasian	1	24.5	26.86	61
	Non-Caucasian	19	19.5	25	42
Relationship Status	Committed	1	24	26.55	61
	Non-Committed	17	28	30.30	50
Veteran Status	Veteran	16	23.5	30.25	37
	Non-Veteran	1	25	27.35	61
Division	Administration	15	22	26.89	56
	Civilian Employee	18	20.50	23	36
	Corrections	17	21	21	24
	Dispatch	17	25	26.71	50
	Field Operations	1	26	28.38	61
	Investigations	18	25	27.5	57
	Support Services	19	26	26.75	38
	Warrants/Civil/Courthouse Security	17	23.5	25.25	37



In order to evaluate the PTSD rate of the sample the responses were scored and categorized (see Table 5). Each score of three or higher was considered significant and a full diagnosis of PTSD requires at least one significant response in the reexperiencing category, three significant responses in the avoidance category, and two significant responses in the arousal category (Weathers, Litz, Huska, & Keane, 1994). A probable diagnosis of PTSD I requires at least one significant response in the reexperiencing category and either three significant responses in the avoidance category or two significant responses in the arousal category. A probable diagnosis of PTSD II requires at least one significant response in each of the three categories (Glück, Tran, & Lueger-Schuster, 2012; Gravelly, Cutting, Nugent, Grill, Carlson, & Spont, 2011). Based on the analysis, nine individuals met the criteria for PTSD (8%), eleven met the criteria for PTSD I (9%), and eight met the criteria for PTSD II (7%). Therefore, 24% of the sample displayed PTSD, PTSD I, or PTSD II symptoms.

Table 5: Participant's PTSD Status by Variable

PTSD Status n=109		PTSD	PTSD I	PTSD II	None	Total
Total		9 (11.4%)	11 (10%)	8 (7.3%)	82	110
Gender	Male	9 (11.4%)	9 (11.4%)	6 (7.6%)	55	79
	Female	0	2 (6.9%)	2 (6.9%)	25	29
	Unknown	0	0	0	2	2
Race	Caucasian	8 (7.8%)	11 (10.7%)	8 (7.8%)	76	103
	Non-Caucasian	1 (25%)	0	0	3	4
	Unknown	0	0	0	3	3
Relationship Status	Committed	8 (8.2%)	9 (9.2%)	7 (7.1%)	74	98
	Non-Committed	1 (10%)	2 (20%)	1 (10%)	6	10
	Unknown	0	0	0	2	2
Veteran	Veteran	0	4 (18.2%)	2 (9.1%)	16	22
	Non-Veteran	9 (10.5%)	7 (8.1%)	6 (7%)	64	86
	Unknown	0	0	0	2	2
Division	Command Staff	3 (13.6%)	1 (4.5%)	2 (9.1%)	16	22
	Civilian	0	0	0	6	6
	Corrections	0	0	0	5	5
	Dispatch	1 (14.3%)	0	0	6	7
	Field Operations	4 (9.8%)	7 (17.1%)	2 (4.9%)	28	41
	Investigations	1(5.9%)	1 (5.9%)	2 (12%)	13	17
	Support Services	0	1 (12.5%)	1 (13%)	6	8
	Warrants	0	1 (25%)	1 (25%)	2	4

Participants were asked to describe their involvement in several coping strategies after the event (see Table 6): debriefings, Post Critical Incident Seminar, counseling, and services of a Chaplain. Sixty individuals (60%) indicated they attended a debriefing after the event with 20 of them (33%) stating they attended by choice. Twenty-four (40%) participants indicated the debriefing helped them moderately or a lot. Of the individuals who stated they did not attend a debriefing, 53% (21 responses) said a debriefing was not offered for their event. Thirty-two individuals (32%) indicated they attended a Post Critical Incident Seminar after the event with 15 of them (42%) stating they attended by choice. Twenty-two (69%) participants indicated the Post Critical Incident Seminar helped them moderately or a lot. Of the individuals who stated they did not attend a Post Critical Incident Seminar, 49% (33 responses) said a PCIS was not offered for their event. Sixteen individuals (16%) indicated they attended counseling after the event with 12 of them (71%) stating they attended by choice. Nine (53%) participants indicated counseling helped them moderately or a lot. Of the individuals who stated they did not attend counseling, 40% (34 responses) said counseling was not offered for their event. Thirty-one individuals (31%) indicated they met with a Chaplain after the event with 29 of them (94%) stating they attended by choice. Twenty-seven (87%) participants indicated meeting with a Chaplain helped them moderately or a lot. Of the individuals who stated they did not meet with a Chaplain, 48% (33 responses) said a meeting with a Chaplain was not offered for their event.

Respondents were also asked to indicate whom they communicated with after the event: significant other or spouse, other family members, co-workers, and friend outside law enforcement. Seventy-seven individuals (76%) indicated they discussed the event

with a spouse or significant other after the event. Forty-eight (63%) participants indicated discussing the event with a spouse or significant other helped them moderately or a lot. Of the individuals who stated they did not discuss the event with a spouse or significant other, 12 people (50%) stated they wanted to protect their family member from the event. Forty-seven individuals (47%) indicated they discussed the event with other family members after the event. Twenty-seven (58%) participants indicated discussing the event with other family members helped them moderately or a lot. Of the individuals who stated they did not discuss the event with other family members, 28 people (52%) stated they wanted to protect their family members from the event. Eighty-nine individuals (89%) indicated they discussed the event with a co-worker after the event. Sixty-four (71%) participants indicated discussing the event with a co-worker helped them moderately or a lot. Of the individuals who stated they did not discuss the event with a co-worker, only two people (18%) stated they wanted to protect them from the event. Only 28 individuals (28%) indicated they discussed the event with friends outside law enforcement after the event. Ten (36%) participants indicated discussing the event with friends outside law enforcement helped them moderately or a lot. Of the individuals who stated they did not discuss the event with friends outside law enforcement, 21 people (29%) stated they wanted to protect them from the event.

Table 6: Involvement with Coping & Communication Strategies

Coping/ Communication Strategy	Attendance				Reason for not attending				Helpfulness of strategy					
	Yes	Went by Choice	Ordered to go	No	Not offered	Offered, chose not to attend	Offered, unable to attend	Offered, not notified	Offered, not allowed to attend	None	Very little	Neutral	Moderately	A lot
Debriefing	60	20	40	40	21	10	6	1	2	7	7	22	16	8
PCIS	32	15	17	69	33	22	8	4	1	1	3	6	8	14
Counselor	16	12	5	84	34	46	3	0	1	4	2	2	7	2
Chaplain	31	29	2	70	33	35	1	0	0	0	0	4	15	12
Significant other	77			24						0	7	22	19	29
Other family	47			54						1	6	13	20	7
Co-workers	89			11						2	5	19	28	36
Friends outside Law Enforcement	28			73						3	7	8	8	2

Logistic regression and ordinary least squares regression were utilized during analysis to evaluate significance rates among selected independent variable, such as race, gender, and age, on the dependent variable of whether or not an individual has PTSD (see Table 7). For logistic regression analysis, all three of the subgroups, PTSD, PTSDI, and PTSDII, were combined into a single group. Participants who's scores on the PCL-C graded into one of the listed categories were coded as 1 while participants whose scores were outside of the categories were coded as 0. For ordinary least squares regression, participants' overall scores on the PCL-C were utilized.

The first model examined using logistic regression utilized seven independent variables: race, gender, age, veteran status, relationship status, the number of incidents an individual has been involved, and whether or not the most significant event was a line of duty death. The descriptive variables were utilized to evaluate any potential differences among participants based on individual characteristics. The final category was included since nearly half of the participants indicated their most stressful incident involved the line of duty death of another officer. The results of the logistic regression, using a generalized linear model, for the first model indicated the number of critical incidents involved was marginally significant ( $p=.0507$ ) while none of the other variables were significant. Akaike Information Criterion (AIC) is a measurement of the quality of a statistical model that evaluates the fit of the model and the complexity of the model. Lower AICs and fewer missing responses indicate better models. This model had an AIC score of 110.17 and 24 observations removed due to missing responses in the data.

Table 7: Logistic Regression of model 1

n=109	Wald X <sup>2</sup>	p	Odds Ratio
Age	0.00023	0.2384	-0.04066
Gender	3.8	0.1320	0.99974
Line of Duty Death	2.3	0.9560	-0.02922
Number of Incidents Involved	1.4	0.0507	0.05648
Race	0.003	0.8054	-0.32254
Relationship Status	0.061	0.3609	-0.78609
Veteran	0.83	0.6721	0.28694

The second model examined using logistic regression (see Table 8) also utilized five independent variables: whether or not the individual attended a debriefing, if the debriefing attendance was by choice, relationship status, gender, and the number of incidents an individual has been involved as independent variables. Debriefings are most often utilized after major significant events, such as a line of duty death or officer involved shooting, but they may be helpful after events that would typically be considered minor, such as a severe vehicle crash or suicide. Also, attendance at a debriefing does not guarantee participation or benefit. An individual who was ordered to attend may be less likely to fully utilize the program and reap the benefits. The results of the logistic regression, using a generalized linear model, for the second model indicated the number of critical incidents involved was marginally significant ( $p=.0948$ ) while none of the other variables were significant and the debriefing attendance category returned an error. Akaike Information Criterion (AIC) is a measurement of the quality of a statistical model that evaluates the fit of the model and the complexity of the model. Lower AICs and fewer missing responses indicate better models. This model had an AIC score of 82.05. This model also had fifty observations removed due to missing responses in the data. The missing responses were likely in the category involving debriefing attendance by choice or not because individuals who indicated they did not attend a debriefing were not given the option to answer the question relating to voluntary attendance because it did not apply. The model was altered with the category for debriefing attendance by choice removed and received an AIC score of 119.25, which indicates it is not as reliable a model as the previous. None of the variables were considered significant in the modified version of the second model (

Table 9).

Table 8: Logistic Regression of model 2

	n=109	Wald $X^2$	p	Odds Ratio
Age		0.00023	0.2384	-0.04066
Gender		3.8	0.1320	0.99974
Line of Duty Death		2.3	0.9560	-0.02922
Number of Incidents Involved		1.4	0.0507	0.05648
Race		0.003	0.8054	-0.32254
Relationship Status		0.061	0.3609	-0.78609
Veteran		0.83	0.6721	0.28694



Table 9: Logistic Regression of model 2a

n=109	Wald X <sup>2</sup>	p	Odds Ratio
Age	0.00023	0.2384	-0.04066
Gender	3.8	0.1320	0.99974
Line of Duty Death	2.3	0.9560	-0.02922
Number of Incidents Involved	1.4	0.0507	0.05648
Race	0.003	0.8054	-0.32254
Relationship Status	0.061	0.3609	-0.78609
Veteran	0.83	0.6721	0.28694

The third model examined using logistic regression (see Table 10) also utilized five independent variables: whether or not the individual met with a Chaplain, whether the meeting was voluntary or not, relationship status, gender, and the number of incidents an individual has been involved as independent variables. Involvement with a Chaplain is different from a debriefing because the meetings are typically conducted one on one rather than in a group setting. Much like simple attendance of a debriefing does not guarantee participation or benefit, simply meeting with a Chaplain does not guarantee success. An individual who was ordered to attend may be less likely to fully utilize the program and reap the benefits. The independent variables in this model were selected so they could be compared to the previous model to determine if one may be more beneficial because they are significantly different in their approaches to healing. Debriefings utilize a group setting and 67% of participants (40 people) reported they were required to attend while meeting with a Chaplain is typically conducted one-on-one and only two people (6%) reported they were ordered to comply. The results of the logistic regression, using a generalized linear model, for the third model none of the variables were significant and the Chaplain meeting category returned an error. Akaike Information Criterion (AIC) is a measurement of the quality of a statistical model that evaluates the fit of the model and the complexity of the model. Lower AICs and fewer missing responses indicate better models. This model had an AIC score of 48.285. This model also had 79 observations removed due to missing responses in the data. The missing responses were likely in the category involving meeting with a Chaplain by choice or not because individuals who indicated they did not meet with a Chaplain were not given the option to answer the question relating to voluntary attendance because it did

not apply. The model was altered with the category for Chaplain meeting by choice removed and received an AIC score of 121.03, which indicates it is not as reliable a model as the previous. Only gender was marginally significant ( $p=.0908$ ) in the modified version of the second model where only nine cases were removed due to missing data (see Table 11).

Table 10: Logistic Regression of model 3

n=109	Wald X <sup>2</sup>	p	Odds Ratio
Age	0.00023	0.2384	-0.04066
Gender	3.8	0.1320	0.99974
Line of Duty Death	2.3	0.9560	-0.02922
Number of Incidents Involved	1.4	0.0507	0.05648
Race	0.003	0.8054	-0.32254
Relationship Status	0.061	0.3609	-0.78609
Veteran	0.83	0.6721	0.28694

Table 11: Logistic Regression of model 3a

n=109	Wald X <sup>2</sup>	p	Odds Ratio
Age	0.00023	0.2384	-0.04066
Gender	3.8	0.1320	0.99974
Line of Duty Death	2.3	0.9560	-0.02922
Number of Incidents Involved	1.4	0.0507	0.05648
Race	0.003	0.8054	-0.32254
Relationship Status	0.061	0.3609	-0.78609
Veteran	0.83	0.6721	0.28694

The fourth model, which was also examined using logistic regression (Table 12), utilized six independent variables: how many coping strategies (debriefing, PCIS, counselor, or Chaplain) were utilized, how many communication strategies (significant other, other family, co-worker, friends outside law enforcement) were utilized, how many coping and communication strategies were utilized, relationship status, gender, and the number of incidents an individual has been involved as independent variables. The results for the coping and communication strategies were determined based on the number of strategies each participant utilized. For example, an individual who attended a debriefing, but did not utilize any other coping assistance was coded as a one. Results for these categories ranged from zero to four. The coping/communication strategies variable combined the results of these groups with possible results ranging from zero to eight. The results of the logistic regression, using a generalized linear model, for the fourth model indicated the number of critical incidents involved was marginally significant ( $p=.08913$ ), gender was marginally significant ( $p=.09936$ ) and the number of coping strategies utilized after an event was significant ( $p=.00846$ ) while none of the other variables were significant. Akaike Information Criterion (AIC) is a measurement of the quality of a statistical model that evaluates the fit of the model and the complexity of the model. Lower AICs and fewer missing responses indicate better models. This model had an AIC score of 118.84 and only two observations removed due to missing responses in the data, but the category for the total number of coping/communication strategies utilized returned results only of "NA". Two revised models were created in order to achieve full results. The first revised model included independent variables for how many coping strategies were utilized, how many coping and communication strategies were utilized, relationship status, gender, and the number of incidents an individual had been involved. The result of the logistic regression using a generalized linear model for this revised fourth model indicated the number of critical incidents involved was marginally significant ( $p=.08913$ ), gender was marginally significant ( $p=.09936$ ) and the number of coping strategies utilized after an event was significant ( $p=.0278$ ) while none of the other variables were significant (see

Table 13). These results were identical for incidents involved in and gender, but slightly higher p value for coping strategies utilized. This model had an AIC score of 118.84 and only two observations removed due to missing responses in the data which was also identical to the original fourth model. The second revised model included independent variables of: how many communication strategies were utilized, how many coping and communication strategies were utilized, relationship status, gender, and the number of incidents an individual has been involved as independent variables.

The result of the logistic regression using a generalized linear model for the second revision of the fourth model indicated the number of critical incidents involved was marginally significant ( $p=.08913$ ), gender was marginally significant ( $p=.09936$ ), the number of communication strategies utilized after an event was significant ( $p=.02775$ ) and the number of coping/communication strategies utilized after an event was also significant ( $p=.00846$ ) while relationship status was not significant. This model had an AIC score of 118.84 and only two observations removed due to missing responses in the data which was also identical to the original fourth model (see Table 14).

Table 12: Logistic Regression of model 4

n=109	Wald X <sup>2</sup>	p	Odds Ratio
Age	0.00023	0.2384	-0.04066
Gender	3.8	0.1320	0.99974
Line of Duty Death	2.3	0.9560	-0.02922
Number of Incidents Involved	1.4	0.0507	0.05648
Race	0.003	0.8054	-0.32254
Relationship Status	0.061	0.3609	-0.78609
Veteran	0.83	0.6721	0.28694

Table 13: Logistic Regression of model 4a

n=109	Wald X <sup>2</sup>	p	Odds Ratio
Age	0.00023	0.2384	-0.04066
Gender	3.8	0.1320	0.99974
Line of Duty Death	2.3	0.9560	-0.02922
Number of Incidents Involved	1.4	0.0507	0.05648
Race	0.003	0.8054	-0.32254
Relationship Status	0.061	0.3609	-0.78609
Veteran	0.83	0.6721	0.28694

Table 14: Logistic Regression of model 4b

n=109	Wald X <sup>2</sup>	p	Odds Ratio
Age	0.00023	0.2384	-0.04066
Gender	3.8	0.1320	0.99974
Line of Duty Death	2.3	0.9560	-0.02922
Number of Incidents Involved	1.4	0.0507	0.05648
Race	0.003	0.8054	-0.32254
Relationship Status	0.061	0.3609	-0.78609
Veteran	0.83	0.6721	0.28694



The fifth model examined using logistic regression utilized four independent variables: whether or not the individual communicated with a spouse/significant other, relationship status, gender, and the number of incidents an individual has been involved as independent variables (see

Table 15). Seventy-seven respondents (77%) reported they communicated with a spouse/significant about the event that most affected them while forty-seven (47%) reported they communicated with other family members after the event. The results of the logistic regression, using a generalized linear model, for the fifth model indicated the number of critical incidents involved was marginally significant ( $p=.0803$ ) while none of the other variables were significant. Akaike Information Criterion (AIC) is a measurement of the quality of a statistical model that evaluates the fit of the model and the complexity of the model. Lower AICs and fewer missing responses indicate better models. This model had an AIC score of 121.26 and nine observations removed due to missing responses in the data.

Table 15: Logistic Regression of model 5

n=109	Wald X <sup>2</sup>	p	Odds Ratio
Age	0.00023	0.2384	-0.04066
Gender	3.8	0.1320	0.99974
Line of Duty Death	2.3	0.9560	-0.02922
Number of Incidents Involved	1.4	0.0507	0.05648
Race	0.003	0.8054	-0.32254
Relationship Status	0.061	0.3609	-0.78609
Veteran	0.83	0.6721	0.28694

The sixth model examined using logistic regression utilized four independent variables: whether or not the individual communicated with a co-worker, relationship status, gender, and the number of incidents an individual has been involved as independent variables (see

Table 16). Eighty-nine respondents (89%) reported they communicated with a co-worker about the event that most affected them while twenty-eight (28%) reported they communicated with friends outside law enforcement after the event. The results of the logistic regression, using a generalized linear model, for the sixth model indicated the number of critical incidents involved was marginally significant ( $p=.0544$ ) and communication with a co-worker was significant ( $p=.0472$ ) while none of the other variables were significant. Akaike Information Criterion (AIC) is a measurement of the quality of a statistical model that evaluates the fit of the model and the complexity of the model. Lower AICs and fewer missing responses indicate better models. This model had an AIC score of 117.31 and ten observations removed due to missing responses in the data.

Table 16: Logistic Regression of model 6

	Wald $X^2$	p	Odds Ratio
Age	0.00023	0.2384	-0.04066
Gender	3.8	0.1320	0.99974
Line of Duty Death	2.3	0.9560	-0.02922
Number of Incidents Involved	1.4	0.0507	0.05648
Race	0.003	0.8054	-0.32254
Relationship Status	0.061	0.3609	-0.78609
Veteran	0.83	0.6721	0.28694

Each independent variable was checked for significance using logistic regression and the results for whether a participant met criteria for PTSD or not. The results indicated eight variables returned results of significance or marginal significance. The number of incident involved ( $p=0.0175$ ,  $AIC=123.01$ ), the length of time since the event ( $p=0.0242$ ,  $AIC=110.79$ ), whether counseling was attended ( $p=0.0384$ ,  $AIC=118.39$ ), the number of coping strategies utilized after the event ( $p=0.0046$ ,  $AIC=120.27$ ), and whether or not the event was discussed with co-workers ( $p=0.0473$ ,  $AIC=118.7$ ) were all considered significant. The number of coping/communication strategies utilized ( $p=0.0677$ ,  $AIC=125.29$ ), whether or not the participant attended PCIS ( $p=0.0517$ ,  $AIC=119.48$ ), and gender ( $p=0.0898$ ,  $AIC=124.29$ ) were considered marginally significant.

The same six models were utilized for ordinary least squares regression with respondent's overall score on the PCL-C as the dependent variable. The first model used race, gender, age, veteran status, relationship status, the number of incidents an individual has been involved, and whether or not the most significant event was a line of duty death as independent variables. When evaluating the first model using linear regression the number of incidents involved were significant ( $p=.00533$ ), but entire model was considered non-significant,  $F(7,78)=1.91$ ,  $p=.07913$ . Twenty four observations were removed due to missing data (see Table 17).

Table 17: Regression Results for Model 1

Variance Explained					
	R	R Square	Adjusted R Square	Std. Error of the Estimate	
	.3825	.1463	.07	10.6141	
ANOVA Results					
	Sum of Squares	Df	Mean Square	F-value	p-value
Regression	1660.3	7	1660.33	1.91	0.07913
Residual	9688.7	78	124.21		
Total	11349	85			
Regression Coefficients					
	Unstandardized Coefficients	Standardized Coefficients		t-value	p-value
	$\beta$	Std. Error			
Intercept	29.19113	9.55711		3.054	0.00309
Age	-0.15483	0.15523		-0.997	0.32163
Gender	4.67035	2.87058		1.627	0.10778
Race	-0.09446	6.79151		-0.014	0.98894
Veteran	-1.81117	3.40094		-0.533	0.59586
Relationship Status	-4.80138	4.27254		-1.124	0.26455
Number of Critical Events Involved	.038227	0.13335		2.867	0.00533
LODD	0.35950	2.51507		0.143	0.88671



The second model used whether or not the individual attended a debriefing, if the debriefing attendance was by choice, relationship status, gender, and the number of incidents an individual has been involved as independent variables. When evaluating the second model using linear regression the number of incidents involved category was marginally significant ( $p=.0908$ ), but entire model was considered non-significant,  $F(4,55)=1.425, p=.02381$ . Fifty observations were removed due to missing data. The second model was re-evaluated with the category for debriefing attendance choice removed. The results on the linear regression showed the number of incidents involved category was significant ( $p=.0579$ ) and the entire model was considered significant,  $F(4,95)=3.579, p=.009189$ . The multiple R-squared result of 0.1309 indicated the number of incidents an individual was involved with contributed to 13% of their PCL-C score for PTSD. Only ten observations were removed from the revised second model due to missing data (see Table 18).

Table 18: Regression Results for Model 2a

Variance Explained					
	R	R Square	Adjusted R Square	Std. Error of the Estimate	
	0.3618	0.1309	0.09435	10.22228	
ANOVA Results					
	Sum of Squares	Df	Mean Square	F-value	p-value
Regression	1574.5	4	1574.48	3.579	0.009189
Residual	10449.5	95	109.99		
Total	12024	99			
Regression Coefficients					
	Unstandardized Coefficients		Standardized Coefficients		
	$\beta$	Std. Error		t-value	p-value
Intercept	23.5988	3.9053		6.043	<.001
Gender	3.4812	2.4041		1.448	0.15090
Relationship Status	-5.4618	3.6339		-1.503	0.13615
Number of Critical Events Involved	0.2977	0.1054		2.823	0.00579
Attended Debriefing	2.7138	2.2389		1.212	0.22847

The third model used whether or not the individual met with a Chaplain, whether meeting with a Chaplain was by choice, relationship status, gender, and the number of incidents an individual has been involved as independent variables. When evaluating the third model using linear regression none of the variables were significant and the entire model was considered non-significant,  $F(4,26)=0.2754$ ,  $p=.08911$ . Seventy-nine observations were removed due to missing data. The third model was re-evaluated with the category for meeting with a Chaplain by choice or not removed. The results on the linear regression showed the number of incidents involved category was significant ( $p=.00886$ ), gender was marginally significant ( $p=.09983$ ) and the entire model was considered significant,  $F(4,96)=3.574$ ,  $p=.009227$ . The multiple R-squared result of 0.1296 indicated the number of incidents an individual was involved with and their gender contributed to 13% of their PCL-C score for PTSD. Only nine observations were removed from the revised second model due to missing data (see Table 19) .

Table 19: Regression Results for Model 3

Variance Explained					
	R	R Square	Adjusted R Square	Std. Error of the Estimate	
	0.36	0.1296	0.09333	10.22141	
ANOVA Results					
	Sum of Squares	Df	Mean Square	F-value	p-value
Regression	1571.2	4	1571.2	3.574	0.009227
Residual	10552.2	96	109.92		
Total	12123.4	100			
Regression Coefficients					
	Unstandardized Coefficients		Standardized Coefficients		
	$\beta$	Std. Error		t-value	p-value
Intercept	23.5429	3.8858		6.059	<.001
Gender	3.9643	2.3857		1.662	0.09983
Relationship Status	-4.5099	3.5054		-1.287	0.20134
Number of Critical Events Involved	0.2894	0.1083		2.672	0.00886
Met with Chaplain	1.8241	2.3667		0.771	0.44276

The fourth model used how many coping strategies (debriefing, PCIS, counselor, or Chaplain) were utilized, how many communication strategies (significant other, other family, co-worker, friends outside law enforcement) were utilized, how many coping and communication strategies were utilized, relationship status, gender, and the number of incidents an individual had been involved as independent variables. When evaluating the fourth model using linear regression the number of incidents involved with was significant ( $p=.0106$ ), the number of coping strategies utilized was significant ( $p=.0198$ ), and the entire model was considered significant,  $F(5,95)=4.139$ ,  $p=.001913$ . Nine observations were removed due to missing data. The multiple R-squared result of 0.1789 indicated the number of incidents an individual was involved with and the number of coping strategies utilized contributed to nearly 18% of their PCL-C score for PTSD. Like the linear regression fourth model, the category for the total number of coping/communication strategies utilized returned results only of “NA” (see Table 20).

Table 20: Regression Results for Model 4a

Variance Explained					
	R	R Square	Adjusted R Square	Std. Error of the Estimate	
	0.423	0.1789	0.1357	9.927908	
ANOVA Results					
	Sum of Squares	Df	Mean Square	F-value	p-value
Regression	2168.5	5	2168.5	4.139	0.001913
Residual	9954.9	95	104.79		
Total	12123.4	100			
Regression Coefficients					
	Unstandardized Coefficients	Std. Error	Standardized Coefficients	t-value	p-value
Intercept	24.1934	4.1704		5.801	<.001
Gender	3.7564	2.3177		1.621	0.1084
Coping	3.0107	1.3497		2.231	0.0281
Coping/Communication	-0.9982	0.9895		-1.009	0.3156
Total					
Relationship Status	-4.5613	3.5171		-1.297	0.1978
Number of Critical Events Involved	0.2690	0.1032		2.606	0.0106

Two revised models were created in order to achieve full results. The first revised model included independent variables for how many coping strategies were utilized, how many coping and communication strategies were utilized, relationship status, gender, and the number of incidents an individual had been involved. The results of the linear regression showed the number of incidents involved category was significant ( $p=.0106$ ), coping strategies was significant ( $p=.0281$ ) and the entire model was considered significant,  $F(5,95)=4.139, p=.001913$ . The multiple R-squared result of 0.1789 indicated the number of incidents an individual was involved with and the number of coping strategies contributed to nearly 18% of their PCL-C score for PTSD. Only nine observations were removed from the revised second model due to missing data. The results of the first revised model were virtually identical to the original model. The second revised model included independent variables of: how many communication strategies were utilized, how many coping and communication strategies were utilized, relationship status, gender, and the number of incidents an individual has been involved as independent variables. The results of the linear regression showed the number of incidents involved category was significant ( $p=.0106$ ), communication strategies was significant ( $p=.0281$ ), coping/communication strategies was significant ( $p=.0198$ ) and the entire model was considered significant,  $F(5,95)=4.139, p=.001913$ . The multiple R-squared result of 0.1789 indicated the number of incidents an individual was involved with, the number of coping strategies, and the number of coping/communication strategies contributed to nearly 18% of their PCL-C score for PTSD. Only nine observations were removed from this revised model due to missing data. The results of the revised model were virtually identical to the original model, except the

coping/communication strategies category was considered significant in this model (see Table 21).



Table 21: Regression Results for Model 4b

Variance Explained					
	R	R Square	Adjusted R Square	Std. Error of the Estimate	
	0.423	0.1789	0.1357	9.927908	
ANOVA Results					
	Sum of Squares	Df	Mean Square	F-value	p-value
Regression	2168.5	5	2168.5	4.139	0.001913
Residual	9954.9	95	104.79		
Total	12123.4	100			
Regression Coefficients					
	Unstandardized Coefficients	Standardized Coefficients	t-value	p-value	
	$\beta$	Std. Error			
Intercept	24.1934	4.1704	5.801	<.001	
Gender	3.7564	2.3177	1.621	0.1084	
Communication	-3.0107	1.3497	-2.231	0.0281	
Coping/Communication	2.0125	0.8490	2.370	0.0198	
Total					
Relationship Status	-4.5613	3.5171	-1.297	0.1978	
Number of Critical Events Involved	0.2690	0.1032	2.606	0.0106	

The fifth model used whether or not the individual communicated with a spouse/significant other, relationship status, gender, and the number of incidents an individual has been involved as independent variables. When evaluating the fifth model using linear regression the number of incidents involved was significant ( $p=.0033$ ) and the entire model was considered significant,  $F(4,96)=4.165$ ,  $p=.003735$ . Nine observations were removed due to missing data. The multiple R-squared result of 0.1479 indicated the number of incidents an individual was involved with contributed to nearly 15% of their PCL-C score for PTSD (see Table 22).

Table 22: Regression Results for Model 5

Variance Explained					
	R	R Square	Adjusted R Square	Std. Error of the Estimate	
	0.3846	0.1479	0.1124	10.11347	
ANOVA Results					
	Sum of Squares	Df	Mean Square	F-value	p-value
Regression	1792.9	4	1792.9	4.165	0.003735
Residual	10330.5	96	107.61		
Total	12123.4	100			
Regression Coefficients					
	Unstandardized Coefficients	Standardized Coefficients		t-value	p-value
	$\beta$	Std. Error			
Intercept	25.6728	4.0063		6.408	<.001
Gender	3.4304	2.3528		1.458	0.1481
Communication with Significant Other	-4.1434	2.5371		-1.633	0.1057
Relationship Status	-2.6369	3.6093		-0.731	0.4668
Number of Critical Events Involved	0.3107	0.1031		3.013	0.0033

The sixth model used whether or not the individual communicated with a co-worker, relationship status, gender, and the number of incidents an individual has been involved as independent variables. When evaluating the sixth model using linear regression the number of incidents involved was significant ( $p=.00319$ ) and the entire model was considered significant,  $F(4,95)=3.498$ ,  $p=.01039$ . Ten observations were removed due to missing data. The multiple R-squared result of 0.1284 indicated the number of incidents an individual was involved with contributed to nearly 13% of their PCL-C score for PTSD (see Table 23).

Table 23: Regression Results for Model 6

Variance Explained					
	R	R Square	Adjusted R Square	Std. Error of the Estimate	
	0.3583	0.1284	0.09168	10.27774	
ANOVA Results					
	Sum of Squares	Df	Mean Square	F-value	p-value
Regression	1555.9	4	1555.82	3.498	0.01039
Residual	10563.2	95	111.19		
Total	12119.1				
Regression Coefficients					
	Unstandardized Coefficients	Standardized Coefficients		t-value	p-value
	$\beta$	Std. Error			
Intercept	25.6541	4.7718		5.376	<.001
Gender	3.5968	2.3954		1.502	0.13654
Communication with Coworker	-2.3115	3.4058		-0.679	0.49897
Relationship Status	-4.1085	3.5344		-1.162	0.24798
Number of Critical Events Involved	0.3182	0.1051		3.026	0.00319

The next analysis conducted on the data was to determine the exponents of the logistic regression coefficients in order to determine what likely effect was present based on the number of critical incidents involved with. Based on the results of the analysis, for every increase of one critical incident an individual experiences their PCL-C score likely increases 1.05 points. This determination is significant since the lowest possible score on the PCL-C is 17 and the average of number of critical incidents involved with for the sample was 12. Combining these scores results in a likely PCL-C score of 29 and a score of 30 or higher on the PCL-C is considered sufficient for a diagnosis of PTSD by some sources (Norris & Hamblen, 2003).

Each independent variable was checked for significance using linear regression and the results on the PCL-C. The results indicated six variables returned results of significance or marginal significance. The number of incident involved ( $p=0.00254$ , R squared= .08838), whether counseling was attended ( $p=0.021$ , R squared=.0531), the number of coping strategies utilized after the event ( $p=0.0145$ , R squared=.05886), and whether or not the participant attended PCIS ( $p=0.0481$ , R squared=.0389) were all considered significant. Gender ( $p=0.076$ , R squared=.03146) and communication with a significant other ( $p=.0531$ , R squared= .0375) were considered marginally significant.

Most of the descriptive makeup of the sample was not surprising for research conducted on law enforcement professionals. A majority of the sample was male (72%), Caucasian (94%), and non-Veteran (78%). However, several of the descriptive results were unexpected. Most of the sample (89%) identified they were married or in a committed relationship, which conflicts somewhat with a long held belief that police officers' relationships often end in divorce although that fact has not been supported in

other research either (McCoy & Aamodt, 2010). Respondent's ages ranged from 23 to 60 with an average of just over 39 years of age. The number of years in law enforcement ranged from one to 37 with an average of just over 14 years of service.

Each of the possible critical incidents listed in the survey, line of duty death, officer involved shooting, school/workplace violence, intention injury to self or co-worker by a suspect, accidental injury to self or co-worker, motor vehicle fatality, death or injury to a child, sexual assault of a child, sexual assault of an adult, and severe physical violence, was selected at least once by a participant with line of duty death (82 responses) and school/workplace violence (62 responses) being the most prevalent. Severe intentional injury to self by a suspect (7 responses) and severe accidental injury to self (14 responses) were the least reported categories. The category for Other included eight responses. Text descriptions for the Other category submitted by respondents included: "Was on SWAT team that responded to a mass killing which involved the death of 4 of my family members I coordinated intel and operations for the first 16 hours"; "Victim police officer and friend was under work duress and died of apparent stroke"; and "Pursing car which wrecked killing driver who was intoxicated"; "Suspect committed suicide w a rifle that had 3 rounds in it". Other relevant comments offered by participants for critical incidents included: "Plane crash with multiple victims. No real medical aid to be given. Everyone was DOA. The scene still lives with me today and the look one of the victims had on his face was terror."; "Victim expired while rendering first aid"; "dispatch fatal car accident child"; "provided aid to parents over the phone. child was choking and near death"; "mother smothered child in bed"; "10 month old victim. SIDS. My son was around that age as well when it happened"; "Gave CPR to child

victim”; “dispatch 2 month old child not breathing”; “child died in crib”; “child killed in car wreck”; “dispatch 4yo abused by a mentally challenged adult”; “[Internet Crimes Against Children] Cases for all these events”; “dispatch 15 yo raped by adult”; and “small child abused by father/broken leg other bones”.

Participants were asked to select the critical incident and their role within the incident that most affected them at the time of the survey. Fifty participants (46%) indicated the critical event that most affected them was a line of duty death. Of those fifty respondents, half of them (25 responses) indicated the role most bothersome to them was the loss of a co-worker/friend. Thirteen individuals reported an event involving school/workplace violence most affected them with three of them indicating dealing with the suspect was their most bothersome role and four responding with Other. The descriptions given for other included: “VT shooting provided medical care and carried students out of building had one student die while i along with another officer were trying to provide aid to her gunshot wound to the neck”; “Dealing with Co-workers”; “1st on scene 4/16”; “create timeline from radio/telephone, manage records, dispatch in the days following”; “Assigned officers to respond and had to deal with sending them into that environment (VT) and seeing them struggle with it afterward”; “First Responder in off duty capacity / Scene Security / evacuation procedures”; and numerous responses for dispatch or responded to the scene. Eight individuals report the most affecting incident was the death or serious injury of a child, with three reporting involvement with the victim or victim’s family was their affecting role. Seven participants reported an officer involved shooting was their most bothersome critical incident, with four indicating their affecting role was firing at the suspect and two stating they identify or sympathize with



the victim. Responses for the Other category relating to officer involved shootings included: “Internal Affairs Investigator”; “hostage negotiator before suspect was shot by police”; and numerous responses for dispatch and responded to the scene. No one identified the severe violent injury to themselves or a co-worker, accidental injury to themselves or a co-worker, or sexual assault of an adult categories were their most impactful critical incident.

This study utilized the civilian version of the Posttraumatic Stress Disorder Checklist (PCL-C) for evaluation of PTSD among law enforcement officers. The PCL-C was utilized to evaluate psychological impact of the critical incidents to participants. Each individual was asked to answer based solely on the single event and role they identified previously as being the most bothersome to them. The PCL-C questionnaire uses a Likert scale with rankings of: not at all, a little bit, moderately, quite a bit, and extremely. Participants were asked to answer questions about how often they experience various symptoms that correspond with the symptoms listed in the PTSD diagnosis. If all questions are answered, the possible scores for the PCL-C were 17 to 85. The results indicated a range of 0 to 61 with a mean of 24.72 due to some participants only partially answering the questions. The first five questions on the PCL-C correspond to the reexperiencing category. Thirty-nine of the 99 participants (39%) who answered the questions related to reexperiencing indicated they experienced at least one of the symptoms moderately, quite a bit, or extremely. Question numbers six through twelve on the PCL-C correspond to the avoidance category. Thirty-nine of the 99 participants (39%) who answered the questions related to avoidance also indicated they experienced at least one of the symptoms moderately, quite a bit, or extremely. The final five

questions on the PCL-C correspond to the arousal category. Fifty-four of the 99 participants (54%) who answered the questions related to arousal indicated they experienced at least one of the symptoms moderately, quite a bit, or extremely.

In order to evaluate the PTSD rate of the sample the responses were scored and categorized. Each score of three or higher was considered significant and a full diagnosis of PTSD requires at least one significant response in the reexperiencing category, three significant responses in the avoidance category, and two significant responses in the arousal category (Weathers, Litz, Huska, & Keane, 1994). A probable diagnosis of PTSD I requires at least one significant response in the reexperiencing category and either three significant responses in the avoidance category or two significant responses in the arousal category. A probable diagnosis of PTSD II requires at least one significant response in each of the three categories (Glück, Tran, & Lueger-Schuster, 2012; Gravely, Cutting, Nugent, Grill, Carlson, & Spont, 2011). Based on the analysis, nine individuals met the criteria for PTSD (8%), eleven met the criteria for PTSD I (9%), and eight met the criteria for PTSD II (7%). Therefore, 24% of the sample displayed PTSD, PTSD I, or PTSD II symptoms.

Participants were asked to describe their involvement in several coping strategies after the event: debriefings, Post Critical Incident Seminar, counseling, and services of a Chaplain. Sixty individuals (60%) indicated they attended a debriefing after the event with 20 of them (33%) stating they attended by choice. Twenty-four (40%) participants indicated the debriefing helped them moderately or a lot. Of the individuals who stated they did not attend a debriefing, 53% (21 responses) said a debriefing was not offered for their event. Thirty-two individuals (32%) indicated they attended a Post Critical Incident

Seminar after the event with 15 of them (42%) stating they attended by choice. Twenty-two (69%) participants indicated the Post Critical Incident Seminar helped them moderately or a lot. Of the individuals who stated they did not attend a Post Critical Incident Seminar, 49% (33 responses) said a PCIS was not offered for their event. Sixteen individuals (16%) indicated they attended counseling after the event with 12 of them (71%) stating they attended by choice. Nine (53%) participants indicated counseling helped them moderately or a lot. Of the individuals who stated they did not attend counseling, 40% (34 responses) said counseling was not offered for their event. Thirty-one individuals (31%) indicated they met with a Chaplain after the event with 29 of them (94%) stating they attended by choice. Twenty-seven (87%) participants indicated meeting with a Chaplain helped them moderately or a lot. Of the individuals who stated they did not meet with a Chaplain, 48% (33 responses) said a meeting with a Chaplain was not offered for their event.

Respondents were also asked to indicate whom they communicated with after the event: significant other or spouse, other family members, co-workers, and friend outside law enforcement. Seventy-seven individuals (76%) indicated they discussed the event with a spouse or significant other after the event. Forty-eight (63%) participants indicated discussing the event with a spouse or significant other helped them moderately or a lot. Of the individuals who stated they did not discuss the event with a spouse or significant other, 12 people (50%) stated they wanted to protect their family member from the event. Comments offered by participants for not discussing the event with a significant other included: "Department Policy"; did not have anyone"; They do not want to know"; I don't remember why"; and "Spouse refused to listen. Couldn't cope with it".

Forty-seven individuals (47%) indicated they discussed the event with other family members after the event. Twenty-seven (58%) participants indicated discussing the event with other family members helped them moderately or a lot. Of the individuals who stated they did not discuss the event with other family members, 28 people (52%) stated they wanted to protect their family members from the event. Responses for why participants did not communicate with other family members included: “Would not understand”; “Department Policy”; “didn't feel as they needed details”; “From my personal perspective, when events occur on the job, they stay within the job. My "first responder" role was a call taker and while having to visualize what took place, I was never directly impacted by "sight". For high impact calls, my role was not only call taker/dispatcher but also as an intercessor with prayer. With that, all cares, emotions, responses to and involvement with any of the numerous incidences that I have participated in over a 15 year span are dealt with through prayer and helping others. This should not lead the surveyor to believe that this perception and action is one of denial etc... but the purposes of the involvement are clearly understood and ability to detach emotionally so no lingering effects remain, are solely due to concentrated prayer.”; “I did not feel they would understand”; “DID NOT WANT TO BE ASKED A LOT OF QUESTIONS”; “They shouldn't have to know what that is like and did not want them to worry about me seeing those types of events”; “FELT SHARING WITH SPOUSE WAS ENOUGH SINCE THAT IS WHO I LIVE WITH. PARENTS DO NOT LIKE TO HEAR THE STORIES OF JOB BECAUSE I COULD BE IN HARMS WAY WHILE PERFORMING MY DUTIES AND MAKES THEM VERY UNCOMFORTABLE”; and “Didn't want them worrying about the effects of work on me”.

Eighty-nine individuals (89%) indicated they discussed the event with a co-worker after the event. Sixty-four (71%) participants indicated discussing the event with a co-worker helped them moderately or a lot. Of the individuals who stated they did not discuss the event with a co-worker, only two people (18%) stated they wanted to protect them from the event. Comments regarding why events were not discussed with co-workers included: “Didn't want to talk to them”; “what did I have to add, I wasn't there when it happened and I couldn't help him or them”; and “No one has ever asked about it”.

Only 28 individuals (28%) indicated they discussed the event with friends outside law enforcement after the event. Ten (36%) participants indicated discussing the event with friends outside law enforcement helped them moderately or a lot. Of the individuals who stated they did not discuss the event with friends outside law enforcement, 21 people (29%) stated they wanted to protect them from the event. Written comments by participants when asked about communicating with people outside of law enforcement included: “Friends outside law enforcement? What is that?”; “Did not trust anyone outside of the law enforcement other than family”; “details may have shocked them, or weren't for public knowledge. they wouldn't have perspective”; “Same as my family, they did not need to know what I had seen”; “I do not discuss work related calls with those not in law enforcement” and “Because others find your involvement interesting....There is nothing intriguing or glorious about it”.

Participants were asked for any additional responses at the conclusion of the survey and offered the following comments: “The most troubling event was not listed as an option. It may be beneficial to know attending PCIS and counseling occurred over 10 years after the event”; “Great survey, however I found it limiting for my role (previous)

as the "first responder". While I found throughout the past 20 years in the NRV that many debriefings were made available to comms personnel, often attendance was not afforded due to staffing. With the resources available in the NRV, communications personnel should be afforded the same "after care" as "on scene" first responders regardless of staffing issues at the time debriefing/counseling is made available. While speaking for what I have observed in my agency, it may well be the same in the surrounding jurisdictions. While I see the title is for "police officers", perhaps you can use this information from the communications side as well as the psychological effects of visualization can be as traumatic as real sight and equal care should be given for each employee involved in any critical incident which requires a debrief"; "many of the above incidents have been experienced by me, I do not feel that any have resulted in any post-traumatic stress or other such illnesses. I honestly feel that some people are better equipped to handle these situations. That does not make them better or worse, just different"; "I'd finished reading "On Combat" from Dave Grossman a couple months prior to my event. Reading that prior to my event helped me cope immediately after the event and long term. Highly recommended reading for anyone in this line of work prior to a critical incident even taking place"; I believe the PCIS and Counseling was done too soon after the event. I believe that time is needed to cope before aid is given. Officers who deal with serious trauma should have aid rendered throughout the first year, not within 2 months and nothing after. Spouses should be able to attend PCIS with the officer if requested."; "Traumatic events in the past were treated as you just needed to "suck it up" and go on. Critical incident counseling has been a fairly recent event"; and "PCIS SEMINAR TRAINING SHOULD BE MANDATORY". It was also noteworthy that

several participants indicated they were employed by a different agency, both within and outside of the survey population, when some of the incidents occurred.

Pearson's product-moment correlations were conducted for each of the independent variables to determine potential correlation with the other independent variables (see Table 24 and Table 25). The results for age indicated significant correlation with the variables for division ( $p=.017$ ,  $-.23$ ), veteran status ( $p=.0075$ ,  $.26$ ), years in law enforcement ( $p<.001$ ,  $.84$ ), years since the event ( $p<.001$ ,  $.47$ ), and the number of critical incidents involved ( $p=.002$ ,  $.298$ ). The results for gender indicated significant correlation with the variables for division ( $p=.039$ ,  $.199$ ) and veteran status ( $p=.001$ ,  $.31$ ). The results for relationship status indicated significant correlation with the variables for attending a debriefing ( $p=.006$ ,  $.27$ ) and communication with spouse/significant other after the event ( $p=.004$ ,  $.28$ ). The results for division indicated significant correlation with the variables for line of duty death as most significant event ( $p=.014$ ,  $-.26$ ) and the number of critical incidents involved ( $p=.021$ ,  $-.22$ ). The results for years in law enforcement indicated significant correlation with the variables for years since the most critical event ( $p<.001$ ,  $.536$ ) and the number of critical incidents involved ( $p<.001$ ,  $.39$ ).

The results for the number of critical incidents involved indicated significant correlation with the variables for met with a Chaplain ( $p=.0076$ ,  $.26$ ) and communicated with other family members after the event ( $p=.025$ ,  $.22$ ). The results for line of duty death as the most significant event indicated significant correlation with the met with a Chaplain variable ( $p=.026$ ,  $.234$ ). The results for attended debriefing indicated significant correlation with the variables for attended PCIS ( $p<.001$ ,  $.385$ ), attended counseling

( $p=.016, .242$ ), met with a Chaplain ( $p=.017, .238$ ), number of coping strategies used ( $p<.001, .71$ ), and number of coping/communication strategies used ( $p<.001, .629$ ).

The results for attended PCIS indicated significant correlation with the variables for attended counseling ( $p<.001, .344$ ), met with a Chaplain ( $p<.001, .377$ ), number of coping strategies used ( $p<.001, .781$ ), and number of coping/communication strategies used ( $p<.001, .587$ ). The results for attended counseling indicated significant correlation with the variables for communicated with spouse/significant other ( $p=.044, -.2$ ), number of coping strategies used ( $p<.001, .574$ ), and number of coping/communication strategies used ( $p=.002, .30$ ). The results for met with Chaplain indicated significant correlation with the variables number of coping strategies used ( $p<.001, .654$ ), and number of coping/communication strategies used ( $p<.001, .564$ ).

The results for communicated with spouse/significant other indicated significant correlation with the variables communicated with other family members ( $p=.015, .241$ ), communicated with co-workers ( $p<.001, .339$ ), number of communication strategies used ( $p<.001, .707$ ), and number of coping/communication strategies used ( $p<.001, .472$ ). The results for communicated with other family members indicated significant correlation with the variables for number of communication strategies used ( $p<.001, .633$ ), and number of coping/communication strategies used ( $p<.001, .437$ ). The results for communicated with co-workers indicated significant correlation with the variables for number of communication strategies used ( $p<.001, .495$ ), and number of coping/communication strategies used ( $p=.002, .31$ ). The results for communicated with friends outside law enforcement indicated significant correlation with the variables for number of communication strategies used ( $p<.001, .629$ ), and number of



coping/communication strategies used ( $p < .001$ , .48). The results for coping strategies after the event indicated significant correlation with the variables for number of communication strategies used ( $p = .014$ , .234), and number of coping/communication strategies used ( $p < .001$ , .79). The results for communication strategies after the event indicated significant correlation with the variable for number of coping/communication strategies used ( $p < .001$ , .781).

Table 24: Correlation Matrix of Independent Variables- Part I

Independent Variables	Independent Variables										
	Age	Gender	Race	Relationship	Department	Division	Veteran	Years in Law Enforcement	Years since Event	Number of Incidents Involved	LODD as Most Significant Event
Age	1.00										
Gender	.0153	1.00									
Race	-.08	-.12	1.00								
Relationship	.046	.023	.106	1.00							
Department	-.07	.047	.147	-.1	1.00						
Division	-.23**	.199*	-.06	-.12	.078	1.00					
Veteran	.26**	.31**	.144	.08	-.1	.014	1.00				
Years in Law Enforcement	.84**	.17	-.03	.056	-.06	-.18	.084	1.00			
Years since Event	.47**	.142	-.01	-.1	.00	.023	.536**	1.00			
Number of Incidents Involved	.298**	.095	.082	.011	-.003	-.22*	.39**	.197	1.00		
LODD as Most Significant Event	.102	-.11	-.04	.035	-.17	-.26*	-.05	-.04	.194	1.00	

\*\*p<0.01 & \*p<0.05

Table 25: Correlation Matrix of Independent Variables – Part II

Independent Variables	Independent Variables										
	Attended Debriefing	Attended PCIS	Attended Counseling	Met with Chaplain	Communicated with Spouse	Communicated with Family	Communicated with Co-Worker	Communicated with Friends	Coping	Communication	Coping/Communication
Age	.042	-.08	-.006	.038	-.05	-.10	.047	.008	-.007	-.04	-.03
Gender	.074	.027	.081	-.08	-.07	.07	-.07	.174	.039	.048	.056
Race	.045	.031	-.19	.026	.131	.09	.091	.014	-.03	.082	.030
Relationship	.27**	.083	-.13	.077	.28**	.11	.096	.057	.1	.143	.156
Department	-.02	-.01	.121	.096	.101	.175	-.05	.059	.059	.117	.113
Division	-.05	.157	.082	-.11	-.18	.101	-.19	.005	.03	-.05	-.01
Veteran	.051	-.02	.055	-.1	-.01	.035	.10	.081	-.01	.037	.019
Years in LE	.111	-.02	-.01	.150	.022	-.1	.049	-.07	.119	.027	.096
Years since Event	-.03	-.16	-.05	-.07	-.11	-.02	-.002	-.03	-.11	-.06	-.12
Number of Incidents	.102	.003	-.01	.264**	-.01	-.22*	.077	.02	.24*	.138	.241*
LODD as Most Significant	.096	.077	-.12	.234*	.112	-.04	.149	.077	.123	.098	.149
Attended Debriefing	1.00	.385**	.242*	.238*	.136	.033	.102	.191	.71**	.174	.629**
Attended PCIS		1.00	.344**	.377**	-.02	.005	-.03	.101	.781**	.033	.587**
Attended Counseling			1.00	.120	-.2*	-.07	-.2	-.03	.574**	-.18	.3**
Met with Chaplain				1.00	.119	.154	.091	.019	.654**	.142	.564**
Communicated with Spouse					1.00	.241*	.339**	.19	.039	.707**	.472**
Comm. with Family						1.00	.004	.176	.054	.633**	.437**
Communicated w/ Co-Worker							1.00	.148	.002	.495**	.31**
Communicated with Friends								1.00	.117	.629**	.48**
Coping									1.00	.234*	.790**
Communication										1.00	.781**
Coping / Communication											1.00

\*\*p<0.01 & \*p<0.05

## **Chapter 5: Discussion**

The current study proposed an examination of the pattern and extent of posttraumatic stress disorder (PTSD) among law enforcement officials from the New River Valley, Virginia as well as the means by which they cope with critical incidents. The study evaluated how individual characteristics, critical incident situations, and aftercare relate to PTSD rates of law enforcement personnel. It examined how individuals are affected by different types of critical incidents and what differences exist based on their role during the incident. Lastly, this study evaluated which resources were utilized by participants after critical incidents and determine any interactions between the resources and the rates of PTSD among participants.

Participants of this study were asked to provide individual characteristics for use during the study. These characteristics, age, gender, race, years of law enforcement experience, current job positions, and relationship status, were considered individually as well as grouped to determine which characteristics are most common in individuals with and without PTSD symptoms. These characteristics were also analyzed in relation to types of critical incidents individuals are involved with and how their roles in each incident influenced them psychologically. Finally, individual characteristics were evaluated in relation to resources, such as counseling or spiritual guidance, utilized by participants after the event.

This study examined the types and numbers of critical incidents participants encountered during their careers. The events could have been directed toward the participant, such as an officer involved shooting, a severe accidental injury to them, or a severe intentional violent injury to them by a suspect; or to another officer or co-worker,

such as a line of duty death, severe accidental injury to a co-worker, or severe intentional violent injury to a co-worker by a suspect; or to a citizen, such as school or workplace violence, sexual assault of a child or adult, death or serious injury to a child, handling a fatal motor vehicle crash, or handling a severe domestic violence situation. In addition to comparing event types to individual characteristics, this study evaluated event types and resources utilized by participants after the event to determine if a pattern exists.

This study utilized the non-military, civilian version of the Posttraumatic Stress Disorder Checklist (PCL-C) for evaluation of PTSD among law enforcement officers. The PCL-C has seventeen questions that are each answered using a Likert five point scale that allows for wide variation in overall scores by participants. Each question relates to a PTSD symptom as outlined in the clinical definition in the Fourth Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). Questions answered with a three or higher are considered significant for the purpose of determining PTSD (Glück, Tran, & Lueger-Schuster, 2012; Gravely, Cutting, Nugent, Grill, Carlson, & Spont, 2011; Weathers, Litz, Huska, & Keane, 1994).

Finally, this study evaluated resources, such as debriefings, Post Critical Incident Seminars, chaplains, counselors, or communication with significant others, other family members, co-workers, or friends outside of law enforcement, to determine which were utilized and the effectiveness of each. Multivariate analysis was conducted to determine if a particular group of individuals with a common characteristic is more likely to participate in a certain resource and how effective the resource was for them. Further analysis evaluated which after action resources were most utilized by individuals involved in certain event types.

## **Conclusion**

The number of critical incidents an individual was involved in showed as marginally significant or significant in nearly all of the models and revised models as well as when it was evaluated as a single independent variable. None of the other variables showed as much consistency during the analysis as this variable. While the amount of impact the number of critical events involved with varied based on the model it remained relatively small throughout (8% to 18%). The relationship between the number of critical incidents involved and results on the PCL-C was positive which predicts as the number of critical incidents an individual is involved with increases their likelihood of PTSD also increases. The significance of this variable likely comes from the cumulative effect of critical incidents that law enforcement professionals are with. This indication is important given that the length of service category was not significant. According to the results, an individual who is not involved with repeated critical incidents and merely is employed for a long time is not likely to develop PTSD. The best predictor of PTSD based on the study was the number of critical incidents an individual encounters during a career. This finding was consistent with similar research on police related PTSD (Stephens, Long, and Miller, 1997).

Other independent variables showed significance based on the model they were associated with or if they were considered independently. Gender was considered marginally significant ( $p=0.0898$ ,  $AIC=124.29$ ) when evaluated independently using logistic regression and linear regression ( $p=0.076$ ,  $R\text{ squared}=.03146$ ). Gender was marginally significant in the revised third model that evaluated the number of incidents involved, relationship status, gender, and meeting with a chaplain as well as the fourth

model. The relationship between gender and PCL-C scores was positive which indicates males, who were coded as 1, were more likely to have PTSD.

The number of coping strategies utilized after the event was significant when evaluated independently using logistic regression ( $p=0.0046$ ,  $AIC=120.27$ ) and linear regression ( $p=0.0145$ ,  $R\text{ squared}=.05886$ ) and when evaluated in model 4. The relationship between coping strategies utilized and PCL-C scores was positive which indicated the more coping strategies (debriefing, PCIS, counseling, and Chaplain) were utilized the higher each individual's PCL-C score was likely to be. In hypothesis two, it was projected that participants who utilized coping and communication strategies would be less likely to have PTSD because these strategies would allow thorough processing of the event and allow healing. The experienced differences among the coping strategies and PCL-C scores could relate to the number of incidents involved with category since participants who have encountered numerous critical incidents are likely to have been involved with these coping strategies. Essentially, more critical incidents may result in more exposure to coping strategies and higher PTSD rates. Additional research is suggested on this topic.

Whether or not the participant attended PCIS was determined to be marginally significant when evaluated independently using logistic regression ( $p=0.0517$ ,  $AIC=119.48$ ) and significant when evaluated with linear regression ( $p=0.0481$ ,  $R\text{ squared}=.0389$ ). Whether participants attended counseling after the events was determined to be significant when evaluated independently using logistic regression ( $p=0.0384$ ,  $AIC=118.39$ ), and when evaluated with linear regression ( $p=0.021$ ,  $R\text{ squared}=.0531$ ). The relationship between attending counseling or attending PCIS and

PCL-C scores was positive which indicates an individual who attended counseling was more likely to have a higher PTSD rate much like the entire coping strategy category previously discussed.

Whether or not the event was discussed with a significant other was found to be marginally significant when evaluated with linear regression ( $p=.0531$ ,  $R^2=.0375$ ), but not significant when evaluated with logistic regression. The relationship between communicating with a significant other and PTSD was negative which indicated individuals who communicated with a significant other about the event were less likely to have PTSD. Whether or not the event was discussed with co-workers was found to be significant when evaluated with logistic regression ( $p=0.0473$ ,  $AIC=118.7$ ), but not significant when evaluated with linear regression. The relationship between communicating with co-workers and PTSD was negative which indicated individuals who communicated with co-workers were less likely to have PTSD.

The number of coping/communication strategies utilized after the event was marginally significant when evaluated independently using logistic regression ( $p=0.0677$ ,  $AIC=125.29$ ), but not when evaluated with linear regression. This relationship was positive which indicated the more coping and communication strategies utilized by individuals the more likely they were to have PTSD.

The length of time since the event was considered significant ( $p=0.0242$ ,  $AIC=110.79$ ) when evaluated individually using logistic regression, but not significant using linear regression. The relationship was negative which indicated the more time that passed since the event the less likely the individual was to have PTSD.



## **Hypothesis Findings**

Three hypotheses were evaluated by the study: Participants who report having been the victim of violence will indicate higher results on the PTSD scale; A relationship will exist between the number of coping strategies utilized after events by participants and their results on the PTSD scale; & Female respondents will have higher results on the PTSD scale than their male counterparts. The first hypotheses, that participants who reported having been the victim of violence will indicate higher results on the PTSD scale, was evaluated using the category each participant selected as the critical event and role which most affected them and was the situation they answered the PCL-C questions in relation to. Participant's results on the PCL-C total score as well as those individuals who met criteria for PTSD, PTSDI, or PTSDII were also utilized to evaluate the first hypothesis. No participants indicated the critical incident most disturbing to them involved physical violence to them. Four participants stated firing at a suspect during an officer involved shooting was the event that most affected them, but it was unknown whether their use of deadly force was the results of the suspect's action toward them, a co-worker, or another individual. Based on these findings and a lack of data from the survey there was no support for the first hypothesis that participants who reported having been the victim of violence will indicate higher results on the PTSD scale.

The second hypothesis, that a relationship existed between the number of coping/communication strategies utilized after events by participants and their results on the PTSD scale, was evaluated utilizing questions where participants indicated whether or not they had participated in a debriefing, participated in a Post Critical Incident Seminar, attended counseling, met with a Chaplain, discussed the event with their significant other,

discussed the event with other family members, discussed the event with co-workers, or discussed the event with friends outside of law enforcement. Participant's results on the PCL-C total score as well as those individuals who met criteria for PTSD, PTSDI, or PTSDII were also utilized to evaluate the second hypothesis. Results for coping strategies were compiled by determining which of the eight possible strategies participants utilized and awarding a point for each strategy with participants who utilized none of the strategies receiving zero and participants who utilized all of them receiving eight. The results indicated eleven individuals did not utilize any of the strategies while one participant reported utilizing all eight. The mean score was 3.45. When the strategies were broken into two categories, coping, which consisted of debriefings, PCIS, counseling, and Chaplains, and communication, which consisted of all others, it became apparent that the communication strategies were utilized more by participants. The mean score of coping was 1.26 compared to the mean score for communication of 2.19. Pearson's product-moment correlations were conducted between coping strategies and the combined PTSD category as well as coping strategies and PCL-C score. The results of both were significant ( $p=0.00293$  &  $p=0.01451$ , respectively). Both tests found around a 24-28% correlation between coping and PTSD. Pearson's product-moment correlations were conducted between communication strategies and the combined PTSD category as well as communication strategies and PCL-C score. Neither of the results were significant. The findings for logistic and linear regression showed mixed results for coping and communication strategies. Pearson's product-moment correlations were conducted between coping/communication strategies and the combined PTSD category as well as gender and PCL-C score. The results marginally significant ( $p=0.06445$ ) for

the combined PTSD category with a correlation of approximately 17%. The correlation analysis of the coping/communication strategy category and the score of the PCL-C was not significant. Overall, the relationship between coping strategies and PTSD was found to be positive which indicated higher coping scores were related to higher PTSD scores. However, the relationship between communication with a significant other and communication with a co-worker were found to have a negative relationship which indicated higher communication scores in those categories were related to lower PTSD scores.

The third hypothesis, that female respondents had higher results on the PTSD scale than their male counterparts, was evaluated using respondents' answers for gender. Participant's results on the PCL-C total score as well as those individuals who met criteria for PTSD, PTSDI, or PTSDII were also utilized to evaluate the third hypothesis. Scores on the PCL-C for males ranged from one to 61 with an average score of 28.09. Scores for females on the PCL-C ranged from 15 to 46 with an average score of 23.7. Although the range for males was much larger, the average score for females was lower by nearly 20%. When the scores for PTSD, PTSDI, and PTSDII were evaluated by gender the differences were much more apparent. No females scored within the range for PTSD, but nine males (11.4%) scored within that range. Two females scored in the PTSDI category (6.9%) and in the PTSDII category (6.9%) compared with nine males in the PTSDI category (11.4) and six males in the PTSDII category (7.6%). Overall, females had a rate of 13.8% (four responses) in all of the PTSD categories combined, but males had a rate of 30.4% (24 responses) within the same categories. Pearson's product-moment correlations were conducted between gender and the combined PTSD category

as well as gender and PCL-C score. The results of both were marginally significant ( $p=0.08269$  &  $p=0.07599$ , respectively). Both tests found around a 17% correlation between gender and PTSD. These findings were consistent with the findings of the logistic and linear regression analysis. Based on the results relating to gender it is evident that males within the sample were more likely to display PTSD symptoms and the third hypothesis was not supported.

### **Implications**

The implications of the research relate directly to the welfare of both sworn and civilian law enforcement professionals. The single best predictor of PTSD within the research was the number of critical incidents an individual was involved with. Given the nature of law enforcement within the New River Valley where departments routinely respond to assist one another during major incidents and the history of the region the likelihood of additional critical incidents to occur is high and therefore the likelihood of PTSD to occur is also high. The 110 participants reported 1388 responses for critical incident involvement which indicates the average participant was involved with over 12 critical events during their career. The highest number of critical incident involvement reported by one individual was 40. Participants were also asked to indicate their involvement or role in each event with multiple answers possible. The results indicated the participants reported 2543 different roles they had taken for the 1388 different events. The range of critical incident roles was 0 to 102 with an average of just over 23 roles per person. These findings indicate that participants were not only likely to be involved with critical incidents, but were likely to have multiple roles within each incident.

When evaluating only for PTSD, the sample had a rate of 11.4% (nine responses), but when PTSD, PTSDI, and PTSDII rates were combined the sample had a rate of 25.5% (28 responses). According to the United States Department of Veterans Affairs' National Center for PTSD Research (2013), approximately eight percent of the United States' population will have PTSD during their lifetime. The findings of the study indicated that law enforcement professionals with the New River Valley area of Virginia were approximately one and a half times more likely than the general population of the United States to have PTSD. One significant difference in the current research and prior research was the relationship of gender on PTSD. Other studies have shown gender is a significant indicator of PTSD with females being nearly twice as likely as males to report having PTSD. However, this study indicated males in the sample were much more likely than females to have PTSD.

The number of coping strategies utilized after the event was significant. The relationship between coping strategies utilized and PCL-C scores was positive which indicated the more coping strategies (debriefing, PCIS, counseling, and Chaplain) were utilized the higher each individual's PCL-C score was likely to be. It was projected that participants who utilized coping and communication strategies would be less likely to have PTSD because these strategies would allow thorough processing of the event and allow healing. The experienced differences among the coping strategies and PCL-C scores could relate to the number of incidents involved with category since participants who have encountered numerous critical incidents are likely to have been involved with these coping strategies. Essentially, more critical incidents may result in more exposure to coping strategies and higher PTSD rates. Respondents were more likely to indicate the

coping strategies helped them after the event. Only 23% (14 responses) stated attending a debriefing did not help or helped very little. Similarly, 12.5% (four responses) of those attending PCIS and 37.5% (six responses) of those who met with a Chaplain felt it did not help or helped very little.

Discussing the event with a spouse/significant other or a co-worker was determined to be significant and beneficial based on analysis of the data. Additionally, participants reported talking with their significant other, other family members, or a co-worker helped them after the event. Results for communicating with friends outside law enforcement were different and showed the same low number thought it helped as did thought it did not help.

Based on the findings of the research law enforcement administrators should be cognizant that the number of critical incidents in which an individual is involved with has an effect on their likelihood of having PTSD. It should be noted that some of the critical incidents identified by participants as troubling are not always addressed or treated as major events with the attention or follow-up that major incidents receive. Similarly, some of the roles identified as being bothersome had no direct connection to the event. For example, 58% (29 responses) of the sample who said a line of duty death was their most bothersome critical event said the loss of a friend or sympathy for the victim's family was the role that affected them the most. Also, a number of respondents reported being involved with critical incidents as a dispatcher where they were not present at the scene, but were affected by the event. Administrators must be aware of the widespread effect of an event to all individuals within the agency and not only those directly involved.

## **Limitations**

The current study utilized a sample of law enforcement employees from the New River Valley area of Virginia. Officers from this region experienced significant critical incidents ranging from four line of duty deaths within twenty years to the April 16<sup>th</sup> massacre at Virginia Tech with other major traumas mixed in as well. The generalization of the research is unclear because of the unique sample selected, but critical incidents are encountered by law enforcement professionals each day throughout the world and these findings provide guidance for additional research. Additionally, the relatively low response rate of the survey was a limitation. Approximately 450 surveys were distributed with just over one hundred responses received. Stephens, Long, and Miller (1997) found low response rate in their study of New Zealand police officers and through feedback determined the rate was “attributed primarily to police officers’ resistance to additional paperwork, distrust of the police organization, and cynicism regarding the adverse effects of traumatic experiences” (p. 306). Similar reasons for a low response rate are likely present in the current study. Employees of the surveyed agencies may have felt the results of the study could be used as what they viewed as negatively against them by individuals within or outside their departments. For example, additional training or counseling may result from findings of high PTSD within an agency and officers would be required to attend on their days off or devote work time to these programs. The unique position of a researcher who was also employed by one of the surveyed agencies may have reduced responses. If potential participants felt they could be identified by their responses due to the researcher knowing them personally they might be unlikely to participate. It should be noted that every effort has been made by researchers to protect

the identity of all participants. Lastly, employees may not have wanted to relive the critical events by answering questions related to them. This was the case of one individual who reported to the researcher in person that the survey was begun, but not completed for this reason. None of the responses which were begun, but not fully completed were used in the analysis.

Another limitation of the current project is the use of a self-reporting survey. These types of surveys rely upon the participant's memory of events, some of which were determined to have occurred over ten years prior, to accurately report findings. Self-reporting surveys also have the potential for error based on each participant's interpretation of questions. For example, several participants in the current study responded to their role in an event as Other and indicated they were working as a dispatcher when the event occurred, but the category for Responded to the Scene was also a possible answer. The benefits of anonymous self-reporting surveys are higher response rates, lower costs in collecting data, less time collecting data for researchers than if individual interviews were completed, and the likelihood of honest answers. Oehme, Donnelly, and Martin (2012) addressed the issue of "social desirability bias" in their study of PTSD, alcoholism, and domestic violence among police. Their concern was participants would report lower, inaccurate rates because they felt those were the responses they should give. They stated self-administered questionnaires, like the tool utilized in this study, were superior to other kinds of self-reporting research. This finding is likely confirmed in the current study by the comments offered by participants that were filled with emotion and honesty. The benefits of a self-reported study were significant to the success of the current project.



A final limitation of the research was the use of a self-diagnostic tool for determining PTSD rates among participants. The use of a self-diagnostic tool, such as the PCL-C, much like the use of a self-reported survey, relies upon interpretation of the instrument by the participant. Individual participant's criteria for the given categories, not at all, a little bit, moderately, quite a bit, and extremely, may vary since no specific number is assigned to each response. For example, the instrument does not indicate to participants that the category for moderately would include three to four experiences per week, but rather allows them to interpret the categories. The PCL-C has been used extensively for PTSD identification and research. It is considered reliable and validated in determining symptoms of PTSD in users (Glück, Tran, & Lueger-Schuster, 2012; Oehme, Donnelly, & Martin, 2012; Wilkins, Lang, & Norman, 2011).

### **Future Research**

Future research of PTSD among law enforcement professionals should continue to examine the relationship of critical incidents and PTSD. It should also focus on coping and communication strategies utilized and their impact. The current study found the number of coping strategies utilized was tied to results on the PCL-C with a positive relationship. It is unclear from this research whether the use of coping strategies is actually increasing PTSD rates or whether some other unseen factor is contributing. It seems possible that individuals involved in critical incidents, especially multiple events, are likely to have been involved or exposed to the coping strategies over time and the relationship explored may actually be a product of that exposure. Respondents indicated overwhelmingly that they felt they benefitted from the coping and communication strategies.

Research similar to this study should consider evaluating the second most, and possibly third most, type of event and role that respondents find troubling. The overwhelming amount of participants who reported a line of duty death was the most troubling made evaluation of other events difficult. An event role of Dispatching during the Event should be added because none of the other criteria fit or were interpreted to fit by participants. Also, future studies should allow participants to differentiate between communicating with co-workers on an informal basis about the event and attending a debriefing where co-workers were present or coordinated. This change will help differentiate between those coping strategies for better evaluation.

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## Appendix A

### **Timeline of critical incidents occurring in the New River Valley area of Virginia (This list is not an all inclusive list of events, but rather a significant sample)**

September 18, 1994 - Officer Terry Griffith killed & law enforcement killed suspect  
February 2003 – Blacksburg Police Department patrol car struck by another vehicle  
May 9, 2003 - Officer Scott Hylton killed & law enforcement killed suspect  
January 2004 – Man shoots roommate  
May 2004 – Man killed and man shot in Radford robbery  
June 2004 – Two brothers stab other people in fight  
June 2004 – 14 year old killed by another teenager  
June 2004 – Violent stranger rape and assault in downtown Blacksburg  
July 2004 – Mother & daughter killed by car in Shawsville  
September 2004 – 9 year old boy accidentally shoots 2 year old brother with a shotgun  
March 2005 – Three people die in house fire  
April 2005 – 16 year old died in fatal crash  
May 2005 – Officer Involved Shooting involving Christiansburg Police Department  
May 2005 – Bar worker stabbed in downtown Blacksburg  
October 2005 – Man struck and killed by train  
    August 20, 2006 – Deputy assaulted & Security Guard McFarland killed during inmate escape  
August 21, 2006 - Corporal Eric Sutphin killed during manhunt for escapee  
September 16, 2006 – Man shoots self as TACT team enters house  
September 2006 – Arrest of Jon Utin (local teacher) for sex crimes  
October 2006 – Son robs and murders father  
December 13, 2006 – Woman dies in house fire  
March 2007 – Two boys arrested for murder plot at Auburn Middle School  
April 12, 2007 – Suicide in front of Deputy  
April 16, 2007 - VT shooting  
June 16, 2007 – DUI/texting crash into group of pedestrians  
July 2, 2007 – Man electrocuted to death while stealing copper  
September 7, 2007 – Jeep & motorcycle hit-and-run fatal crash  
Sept 2007 – Double fatal crash of two teenagers  
Oct 2, 2007 – 16 year old female death in single vehicle crash  
Oct 3, 2007 – Single person motorcycle fatal crash  
    January 12, 2008 – DUI arrest of trooper by Montgomery Co. Sheriff's Office related to crash  
February 12, 2008 – Truck & dump truck fatal crash  
February 2008 – Shaken baby death of 14 month old child  
April 15, 2008 – Single vehicle fatal crash  
May 20, 2008 – Man brandishing sword at hospital  
May 30, 2008 – Non-fatal Officer Involved Shooting of man with a knife  
December 6, 2008 – Triple fatal crash on Route 460 Bypass  
December 6, 2008 – Single vehicle fatal crash

December 2008 – Man jumped to death from Memorial Bridge  
December 2008 – Christiansburg Police Department double stabbing & jail suicide of offender  
May 2009 – Man struck by train  
June 19, 2009 – Standoff with shots fired by suspect  
July 2, 2009 – Bike & dump truck fatal crash on Virginia Tech campus  
July 4, 2009 – DUI fatal crash  
August 27, 2009 – Caldwell Field murders of two Virginia Tech Students  
September 5, 2009 – Beating death of man by his cousin  
October 2009 – Blacksburg Police Officer arrested by Montgomery Co. Sheriff's Office  
December 30, 2009 – Fatal Officer Involved Shooting of suspect threatening his child  
January of 2010 – Fatal beheading of Virginia Tech student by another student  
January 26, 2010 – Non-fatal domestic related shooting at a dentist office  
April 7, 2010 – Fatal motorcycle crash of well known local postal employee  
June 4, 2010 – Fatal Officer Involved Shooting of suspect brandishing a knife  
October 15, 2010 – Hazing death of Radford University student  
October 20, 2010 – Double fatal crash  
October 21, 2010 – Radford Papa John's murder/robbery  
November 23, 2010 – Fatal crash of car and delivery truck  
December 2, 2010 – Fatal crash involving elderly man  
December 2010 – Fatal crash of delivery food driver  
December 2010 – Murder for hire by Marine  
January 21, 2011 – Montgomery County Sheriff's Office arrests own deputy  
February 13, 2011 – Double train fatality of teenagers  
May 8, 2011 – Non-fatal Officer Involved Shooting where suspect fired at officers  
May 16, 2011 – Drowning death of young adult male  
May 25, 2011 – Abduction & murder-suicide attempt of 5 year old by family member  
May 30, 2011 – Off-duty Franklin Co Deputy shoots Trooper and is shot by other troopers  
June 18, 2011 – Non-fatal roommate shooting in Radford  
June 21, 2011 – Double fatal crash with death of kids (10 & 9 years old)  
August 12, 2011 – 14 year old shot by 10 year old brother  
August 12, 2011 – Non-fatal Officer Involved Shooting during manhunt  
August 19, 2011 – Radford resident beating death  
September 2011 – Parents arrested for severe abuse of twin infants with multiple fractures  
October 27, 2011 – Montgomery County Sheriff's Office arrests own deputy  
November 18, 2011 – Death of infant  
December 8, 2011 - Officer Derek Crouse killed and suspect commits suicide  
December 18, 2011 – DUI fatality of unborn child  
July 2012 – Murder of man by brother  
March 24, 2013 – Man struck by train  
April 10, 2013 – Fatal Officer Involved Shooting of suspect who fired at officers  
April 12, 2013 –New River Community College shooting with two serious injuries  
April 26, 2013 – Vehicle crash fatality of young adult  
August 16, 2013 – Man kills his two stepsons and himself

## Appendix B

### Survey

1. This study examines the opinions and perspectives of law enforcement officials in the New River Valley as they relate to critical incidents. Specifically, the study seeks your input due to your role as an employee of the Blacksburg Police Department, the Christiansburg Police Department, the Montgomery County Sheriff's Office, the Radford Police Department, or the Virginia Tech Police Department. The study is completely voluntary, should take no more than 10 to 15 minutes and is conducted over the internet. Risks to participants are considered minimal. It is possible you will feel brief discomfort as you answer questions on the survey. If experience any negative reactions to this discussion and would like to speak to someone you are encouraged to contact the researchers for information about access to counseling and you should discontinue the survey. You may wish to contact the Employee Assistance Program at (800) 572-1931. There will be no costs for participating, nor will you directly benefit from participating. A limited number of research team members will have access to the data during data collection. This study is intended to be anonymous and you should not place your name on any part of the survey. Department issued email addresses were utilized to distribute the survey request, but are not maintained by the survey program. Descriptive information, such as gender, race, and age, are collected only for the purposes of research to identify possible connections between these descriptors and are not used for identification.

Your participation in this survey is voluntary. You may decline to answer any question and you have the right to withdraw from participation at any time without penalty. If you wish to withdraw from the study or have any questions, contact the investigator listed below.

Any concerns about the research can be directed to myself (Eric S. Snow, [esnow@radford.edu](mailto:esnow@radford.edu)), the Principal Investigator (Dr. Nicole Hendrix, [pnhendrix@radford.edu](mailto:pnhendrix@radford.edu), 540-831-6161), or Dr. Dennis Grady, Dean of the Graduate and Professional Studies College at Radford University. Dr. Grady can be reached by email ([dgrady4@radford.edu](mailto:dgrady4@radford.edu)) or phone (540) 831-7163.

Do you wish to continue with the research? Yes/No

2. What is your gender?

Male/Female

3. What is your race?

African American

Caucasian

Hispanic

Other

4. What is your age?

5. What is your relationship status?

Committed relationship, but not married

Divorced

Married

Separated

Single

Widowed

6. How many years have you been employed in law enforcement?

7. Which best describes the position or division to which you are currently assigned?

Administration/Command Staff

Civilian Employee (Not Dispatch)

Corrections

Dispatch

Field Operations (Patrol)

Investigations

Support Services (Crime Prevention, School Resource Officer, etc)

Warrants/Civil/Courthouse Security

8. How many years have you been in your current division?

9. Which best describes the position or division to which you are were previously assigned?

Administration/Command Staff

Civilian Employee (Not Dispatch)

Corrections

Dispatch

Field Operations (Patrol)

Investigations

Support Services (Crime Prevention, School Resource Officer, etc)

Warrants/Civil/Courthouse Security

N/A

10. How many years were you in your previous division?

11. Are you a Veteran?

Yes

No

12. How many times have you been deployed?

13. What is the return date of your most recent deployment?

14. Which of the following event types have you been involved with or have dramatically affected you? Please select the appropriate number of occurrences? This does not include every call or incident of these types that you have ever handled, but instead note the incidents that have bothered you or you have carried them with you after the case was complete. Please select all that apply.

One occurrence	Two occurrences	Three occurrences	Four occurrences	Five or more occurrences
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Line of duty death

Officer involved shooting

School or workplace violence

Severe accidental injury to co- worker (Vehicle crash, training injury, etc)

Severe violent injury to co- worker by a suspect

Severe accidental injury to you (Vehicle crash, training injury, etc)

Severe intentional violent injury to you by a suspect

Working a fatal motor vehicle crash

Death or serious injury to a child

Sexual offense involving child victim

Sexual offense involving adult victim

Physical domestic violence (non- sexual assault)

Other (please explain)

15. Describe your role in the line of duty death - First occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim's family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim ("It could have been me/my family.")

Loss of friend/co-worker

Other – explain

16. Describe your role in the line of duty death - Second occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim's family (during or after the event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim ("It could have been me/my family.")

Loss of friend/co-worker

Other (please explain)

17. Describe your role in the line of duty death - Third occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim's family (during or after the event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim ("It could have been me/my family.")

Loss of friend/co-worker

Other (please explain)

18. Describe your role in the line of duty death - Fourth occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim's family (during or after the event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim ("It could have been me/my family.")

Loss of friend/co-worker

Other (please explain)

19. Describe your role in the line of duty death - Fifth occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim's family (during or after the event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim ("It could have been me/my family.")



Loss of friend/co-worker

Other (please explain)

20. Describe your role in the officer involved shooting - First occurrence

Fired at suspect

Provided medical aid to suspect

Provided medical aid to someone other than suspect

Notified or involved with suspect's family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with officers involved ("It could have been me/my family.")

Other – explain

21. Describe your role in the officer involved shooting - Second occurrence

Fired at suspect

Provided medical aid to suspect

Provided medical aid to someone other than suspect

Notified or involved with suspect's family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with officers involved ("It could have been me/my family.")

Other – explain

22. Describe your role in the officer involved shooting - Third occurrence

Fired at suspect

Provided medical aid to suspect

Provided medical aid to someone other than suspect

Notified or involved with suspect's family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with officers involved ("It could have been me/my family.")

Other – explain

23. Describe your role in the officer involved shooting - Fourth occurrence

Fired at suspect

Provided medical aid to suspect

Provided medical aid to someone other than suspect

Notified or involved with suspect's family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with officers involved ("It could have been me/my family.")

Other – explain

24. Describe your role in the officer involved shooting - Fifth occurrence

Fired at suspect

Provided medical aid to suspect

Provided medical aid to someone other than suspect

Notified or involved with suspect's family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with officers involved ("It could have been me/my family.")

Other – explain

25. Describe your role in handling school or workplace violence - First occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim's family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim ("It could have been me/my family.")

Other – explain

26. Describe your role in handling school or workplace violence - Second occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim's family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim ("It could have been me/my family.")

Other – explain

27. Describe your role in handling school or workplace violence - Third occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim's family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim ("It could have been me/my family.")

Other – explain

28. Describe your role in handling school or workplace violence - Fourth occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim's family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim ("It could have been me/my family.")

Other – explain

29. Describe your role in handling school or workplace violence - Fifth occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim's family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim ("It could have been me/my family.")

Other – explain

30. Describe your role in the event related to severe violent injury to co-worker by a suspect -

First occurrence

Fired at suspect

Provided medical aid to suspect

Provided medical aid to someone other than suspect

Notified or involved with suspect's family (during or after event)  
Responded to scene after event was over (Scene security, investigation, etc)  
Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)  
Identify or sympathize with officers involved ("It could have been me/my family.")  
Other – explain

31. Describe your role in the event related to severe violent injury to co-worker by a suspect -  
Second occurrence  
Dealt with suspect  
Provided medical aid to victim  
Notified or involved with victim's family (during or after event)  
Responded to scene after event was over (Scene security, investigation, etc)  
Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)  
Identify or sympathize with victim ("It could have been me/my family.")  
Other – explain

32. Describe your role in the event related to severe violent injury to a co-worker by a  
suspect - Third occurrence  
Dealt with suspect  
Provided medical aid to victim  
Notified or involved with victim's family (during or after event)  
Responded to scene after event was over (Scene security, investigation, etc)  
Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)  
Identify or sympathize with victim ("It could have been me/my family.")  
Other – explain

33. Describe your role in the event related to severe violent injury to a co-worker by a  
suspect - Fourth occurrence  
Dealt with suspect  
Provided medical aid to victim  
Notified or involved with victim's family (during or after event)  
Responded to scene after event was over (Scene security, investigation, etc)  
Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)  
Identify or sympathize with victim ("It could have been me/my family.")  
Other – explain

34. Describe your role in the event related to severe violent injury to a co-worker by a  
suspect - Fifth occurrence  
Dealt with suspect  
Provided medical aid to victim  
Notified or involved with victim's family (during or after event)  
Responded to scene after event was over (Scene security, investigation, etc)  
Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)  
Identify or sympathize with victim ("It could have been me/my family.")  
Other – explain

35. Describe your role in the event related to severe accidental injury to a co-worker - First  
occurrence  
Provided medical aid to victim  
Notified or involved with victim's family (during or after event)  
Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim (“It could have been me/my family.”)

Other – explain

36. Describe your role in the event related to severe accidental injury to a co-worker - Second occurrence

Provided medical aid to victim

Notified or involved with victim’s family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim (“It could have been me/my family.”)

Other – explain

37. Describe your role in the event related to severe accidental injury to a co-worker - Third occurrence

Provided medical aid to victim

Notified or involved with victim’s family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim (“It could have been me/my family.”)

Other – explain

38. Describe your role in the event related to severe accidental injury to a co-worker - Fourth occurrence

Provided medical aid to victim

Notified or involved with victim’s family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim (“It could have been me/my family.”)

Other – explain

39. Describe your role in the event related to severe accidental injury to a co-worker - Fifth occurrence

Provided medical aid to victim

Notified or involved with victim’s family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim (“It could have been me/my family.”)

Other – explain

40. Describe your role in working a fatal motor vehicle crash - First occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim’s family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim (“It could have been me/my family.”)

Other – explain

41. Describe your role in working a fatal motor vehicle crash - Second occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim's family (during or after event)  
Responded to scene after event was over (Scene security, investigation, etc)  
Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)  
Identify or sympathize with victim ("It could have been me/my family.")  
Other – explain

42. Describe your role in working a fatal motor vehicle crash - Third occurrence  
Dealt with suspect  
Provided medical aid to victim  
Notified or involved with victim's family (during or after event)  
Responded to scene after event was over (Scene security, investigation, etc)  
Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)  
Identify or sympathize with victim ("It could have been me/my family.")  
Other – explain

43. Describe your role in working a fatal motor vehicle crash - Fourth occurrence  
Dealt with suspect  
Provided medical aid to victim  
Notified or involved with victim's family (during or after event)  
Responded to scene after event was over (Scene security, investigation, etc)  
Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)  
Identify or sympathize with victim ("It could have been me/my family.")  
Other – explain

44. Describe your role in working a fatal motor vehicle crash - Fifth occurrence  
Dealt with suspect  
Provided medical aid to victim  
Notified or involved with victim's family (during or after event)  
Responded to scene after event was over (Scene security, investigation, etc)  
Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)  
Identify or sympathize with victim ("It could have been me/my family.")  
Other – explain

45. Describe your role in handling a death or serious injury to a child - First occurrence  
Dealt with suspect  
Provided medical aid to victim  
Notified or involved with victim's family (during or after event)  
Responded to scene after event was over (Scene security, investigation, etc)  
Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)  
Identify or sympathize with victim ("It could have been me/my family.")  
Other – explain

46. Describe your role in handling a death or serious injury to a child - Second occurrence  
Dealt with suspect  
Provided medical aid to victim  
Notified or involved with victim's family (during or after event)  
Responded to scene after event was over (Scene security, investigation, etc)  
Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)  
Identify or sympathize with victim ("It could have been me/my family.")  
Other – explain

47. Describe your role in handling a death or serious injury to a child - Third occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim's family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim ("It could have been me/my family.")

Other – explain

48. Describe your role in handling a death or serious injury to a child - Fourth occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim's family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim ("It could have been me/my family.")

Other – explain

49. Describe your role in handling a death or serious injury to a child - Fifth occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim's family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim ("It could have been me/my family.")

Other – explain

50. Describe your role in handling a sexual offense involving a child victim - First occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim's family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim ("It could have been me/my family.")

Other – explain

51. Describe your role in handling a sexual offense involving a child victim - Second occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim's family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim ("It could have been me/my family.")

Other – explain

Describe your role in handling a sexual offense involving a child victim - Third occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim's family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim (“It could have been me/my family.”)

Other – explain

52. Describe your role in handling a sexual offense involving a child victim - Fourth occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim’s family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim (“It could have been me/my family.”)

Other – explain

53. Describe your role in handling a sexual offense involving a child victim - Fifth occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim’s family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim (“It could have been me/my family.”)

Other – explain

54. Describe your role in handling a sexual offense involving an adult victim - First occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim’s family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim (“It could have been me/my family.”)

Other – explain

55. Describe your role in handling a sexual offense involving an adult victim - Second occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim’s family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim (“It could have been me/my family.”)

Other – explain

56. Describe your role in handling a sexual offense involving an adult victim - Third occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim’s family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim (“It could have been me/my family.”)

Other – explain

57. Describe your role in handling a sexual offense involving an adult victim - Fourth occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim’s family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim (“It could have been me/my family.”)

Other – explain

58. Describe your role in handling a sexual offense involving an adult victim - Fifth occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim’s family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim (“It could have been me/my family.”)

Other – explain

59. Describe your role in handling physical domestic violence (non-sexual assault) - First occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim’s family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim (“It could have been me/my family.”)

Other – explain

60. Describe your role in handling physical domestic violence (non-sexual assault) - Second occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim’s family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim (“It could have been me/my family.”)

Other – explain

61. Describe your role in handling physical domestic violence (non-sexual assault) - Third occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim’s family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim (“It could have been me/my family.”)



Other – explain

62. Describe your role in handling physical domestic violence (non-sexual assault) - Fourth occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim's family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim ("It could have been me/my family.")

Other – explain

63. Describe your role in handling physical domestic violence (non-sexual assault) - Fifth occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim's family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim ("It could have been me/my family.")

Other – explain

64. Describe your role in other incidents - First occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim's family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim ("It could have been me/my family.")

Other – explain

Other - explain

Other - explain

65. Describe your role in other incidents - Second occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim's family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim ("It could have been me/my family.")

Other – explain

Other - explain

Other - explain

66. Describe your role in other incidents - Third occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim's family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim ("It could have been me/my family.")

Other – explain

Other - explain

Other - explain

67. Describe your role in other incidents - Fourth occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim's family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim ("It could have been me/my family.")

Other – explain

Other - explain

Other - explain

68. Describe your role in other incidents - Fifth occurrence

Dealt with suspect

Provided medical aid to victim

Notified or involved with victim's family (during or after event)

Responded to scene after event was over (Scene security, investigation, etc)

Supervisor at the time of event (First-line, Command Staff, or Chief/Sheriff)

Identify or sympathize with victim ("It could have been me/my family.")

Other – explain

Other - explain

Other - explain

69. Please select the circumstances that best describes the incident and role that most affects you today.

70. How many years has it been since the event? (Please use a decimal for any events occurring during the past year and estimate)

71. For the following question please consider the one single event listed in Question 7 that affects you most today. Please select the answer that best describes how often you experience each situation.

at all little bit derately a bit rarely

Repeated, disturbing memories, thoughts, or images of a stressful experience from the past?

Repeated, disturbing dreams of a stressful experience from the past?

Suddenly acting or feeling as if a stressful experience were happening again (as if you were reliving it)?

Feeling very upset when something reminded you of a stressful experience from the past?

Having physical reactions (e.g., heart pounding, trouble breathing, or sweating) when something reminded you of a stressful experience from the past?

Avoid thinking about or talking about a stressful experience from the past or avoid having feelings related to it?

Avoid activities or situations because they remind you of a stressful experience from the past?

Trouble remembering important parts of a stressful experience from the past?

Loss of interest in things that you used to enjoy?

Feeling distant or cut off from other people?

Feeling emotionally numb or being unable to have loving feelings for those close to you?

Feeling as if your future will somehow be cut short?

Trouble falling or staying asleep?

Feeling irritable or having angry outbursts?

Having difficulty concentrating?

Being “super alert” or watchful on guard?

Feeling jumpy or easily startled?

72. Identify your involvement in a debriefing after the event:

Attended a debriefing immediately after the event

Did not attend a debriefing immediately after the event

73. If you attended a debriefing was it?

By choice

Was ordered to attend

74. Please rate how the debriefing helped:

None

Very little

Neutral

Moderately

A lot

75. Please select why you did not attend a debriefing:

A debriefing was not offered

A debriefing was offered, but I chose not to attend

A debriefing was offered, but I was unable to attend (scheduling or other conflict)

A debriefing was offered, but I was not notified

A debriefing was offered, but I was not allowed to attend

76. Identify your involvement in a Post Critical Incident Seminar (PCIS) after the event:

Attended a Post Critical Incident Seminar after the event

Did not attend a Post Critical Incident Seminar after the event

77. If you attended a Post Critical Incident Seminar was it?

By choice

Was ordered to attend

78. Please rate how the Post Critical Incident Seminar helped:

None

Very little

Neutral

Moderately

A lot

79. Please select why you did not attend a Post Critical Incident Seminar:

A Post Critical Incident Seminar was not offered

A Post Critical Incident Seminar was offered, but I chose not to attend

A Post Critical Incident Seminar was offered, but I was unable to attend (scheduling or other conflict)

A Post Critical Incident Seminar was offered, but I was not notified

A Post Critical Incident Seminar was offered, but I was not allowed to attend

80. Identify your involvement in counseling after the event:

Attended counseling after the event

Did not attend counseling after the event

81. If you attended counseling was it?

By choice

Was ordered to attend

82. Please rate how the counseling helped:

None

Very little

Neutral

Moderately

A lot

83. Please select why you did not attend counseling:

Counseling was not offered

Counseling was offered, but I chose not to attend

Counseling was offered, but I was unable to attend (scheduling or other conflict)

Counseling was offered, but I was not notified

Counseling was offered, but I was not allowed to attend

84. Identify your involvement with a Chaplain after the event:

Met with a Chaplain after the event

Did not meet with a Chaplain after the event

85. If you met with a Chaplain was it?

By choice

Was ordered to attend

86. Please rate how meeting with a Chaplain helped:

None

Very little

Neutral

Moderately

A lot

87. Please select why you did not meet with a Chaplain:

Meeting with a Chaplain was not offered

Meeting with a Chaplain was offered, but I chose not to attend

Meeting with a Chaplain was offered, but I was unable to attend (scheduling or other conflict)

Meeting with a Chaplain was offered, but I was not notified

Meeting with a Chaplain was offered, but I was not allowed to attend

88. Identify your communication with a significant other or spouse after the event:

I discussed the event with them

I did not discuss the event with them

89. Please rate how communicating with a significant other or spouse about the event helped:

None

Very little

Neutral

Moderately

A lot

90. Please select why you did not communicate with a significant other or spouse about the event:

I did not want to discuss or relive the event

I wanted to protect them from the event

Other (please explain)

91. Identify your communication with other family members after the event (parent, sibling, etc):

I discussed the event with them

I did not discuss the event with them

92. Please rate how communicating with other family members about the event helped:

None

Very little

Neutral

Moderately

A lot

93. Please select why you did not communicate with other family members about the event:

I did not want to discuss or relive the event

I wanted to protect them from the event

Other (please explain)

94. Identify your communication with co-workers after the event:

I discussed the event with them

I did not discuss the event with them

95. Please rate how communicating with co-workers about the event helped:

None

Very little

Neutral

Moderately

A lot

96. Please select why you did not communicate with co-workers about the event:

I did not want to discuss or relive the event

I wanted to protect them from the event

Other (please explain)

97. Identify your communication with friends outside law enforcement after the event:

I discussed the event with them

I did not discuss the event with them

98. Please rate how communicating with friends outside law enforcement about the event helped:

None

Very little

Neutral

Moderately

A lot

99. Please select why you did not communicate with friends outside law enforcement about the event:

I did not want to discuss or relive the event

I wanted to protect them from the event

Other (please explain)

100. For which department do you work?

Blacksburg Police Department

Christiansburg Police Department  
Montgomery County Sheriff's Office  
Radford Police Department  
Virginia Tech Police Department

101. Please provide any additional information or feedback related to the survey in the space provided below.