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ASSESSING DEPLOYMENT RISK AND RESILIENCY FACTORS AND THE ADJUSTMENT OUTCOMES OF POLICE OFFICERS SERVING IN OPERATION IRAQI FREEDOM AND OPERATION ENDURING FREEDOM

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IRAQI FREEDOM AND OPERATION ENDURING FREEDOM

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University.

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Abstract

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The goal of this exploratory study was to evaluate risk and resiliency factors from the Deployment Risk and Resiliency Inventory (DRRI) in predicting post-deployment adjustment outcomes among police officers who served in Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF) as part of the National Guard/Reserve (NGR). A self-reported questionnaire was completed by 44 police officers who were OEF/OIF veterans assessing risk and resiliency factors as well as current levels of anxiety, aggression, alcohol use, and PTSD symptoms.

Regression analyses revealed concerns over family personal relationships and career matters during deployment along with more exposure to critical incidents involving family members predicted higher levels of alcohol use. Conversely, exposure to critical incidents

involving personal safety predicted lower levels of alcohol use while exposure to hostile combat missions predicted lower levels of aggression. Post-deployment social support and military support during deployment predicted lower levels of alcohol usage, anxiety and PTSD/depression while unit peer social support predicted higher levels of alcohol usage. This study highlighted the mistrust among police veteran police officers of mental health professionals. Mistrust of mental health personnel predicted a higher level of aggression and the fear of stigma for receiving mental health assistance predicted higher alcohol usage. This document was created in Microsoft Word 2003.

Chapter 1

Statement of the Problem

The United States Reserves play a key role in securing our nation by supplementing the active military forces when called upon in times of need. Whether it is a national emergency, a time of war, or a national security issue, these citizen-soldiers are trained to join the active components of the military in support of the country's efforts. As part of the United States Armed Forces, there are seven reserve groups that form the United States Reserves: Army Reserves, Army National Guard, Air National Guard, Naval Reserves, Marine Corp Reserves, Air Force Reserves, and the Coast Guard Reserves. Although commonly referred to jointly as the National Guard and Reserves, the Air National Guard and the Army National Guard have different responsibilities serving in both federal and state levels of government while the remaining Reserve Units serve only in a federal capacity.

The National Guard has roots in the colonial state militias dating back to the Revolutionary War. The colonial militias during the Revolutionary War were made up of citizen-soldiers that were regionally based and recruited to serve on a voluntarily basis.   The state militias were crucial to George Washington's Continental Army in winning the war by limiting the advancement of the British troops. The militias' success, along with the founding fathers concern over the checks and balances of federal powers to include the use of the federal army, secured the survival of the militias in the United States Constitution. The militias had a dual mechanism in place by the federal and state governments to ensure the checks and balances of federal powers. The state government trained and appointed officers while the federal government provided the equipment and standard of training for the state militias. This structure of control is similar to the organization of today's National Guard. The National Guard is under

the control of the state commander-in-chief, the governor, and the governor has the ability to mobilize the state National Guard without federal approval.

Historically, several Congressional Acts were significant in defining the separate roles and mission of the Guard and Reserves. After the Civil War, the Posse Comitatus Act of 1878 was passed by Congress limiting the powers of the federal government and the use of federal military for local law enforcement purposes. As a result of this Act, no longer could the U.S. Army enforce civilian laws leaving enforcement to the local police and state militias. The National Defense Act of 1916 created the reserve force to include the Officers' and Enlisted Reserve Corp and the Reserve Officers' Training Corp. In addition to the creation of the reserves, the National Defense Act of 1916 gave an official name to the state militias, "The National Guard" and granted Presidential authority to mobilize the National Guard in a federal capacity during times of war and other national emergencies.

Throughout history, Guard and Reserve policies have endured many changes in relationship to funding, types of missions, and allotted manpower. The National Guard domestic responsibilities have included response to civil disturbances during the Civil Rights Movement and more recently natural disasters such as Hurricane Katrina. At the same time, the Army Reserves have struggled with policies over the years with limited numbers of Reserves serving in the Korean War and the Vietnam War. After the Vietnam War, a Total Force Policy (1973) adopted by the military guaranteed the strength and readiness of the Guard and Reserves by treating the Guard, Reserves, and active Army as one, single force in response to world-wide missions. The National Guard was structured to provide most of the combat reserve forces while the Army Reserves provided support service units with little combat structure. As a result of the

Total Force Policy, all components of the military are utilized in an effort to pool resources in strategic Department of Defense operations.

The motivation to become members of the National Guard and Reserves vary. There are healthcare, employment, enlisting bonuses, and educational benefits with historically little risk for overseas deployments. In fact, to avoid the draft of the Vietnam War, individuals joined the National Guard and Reserves in large numbers. In recent years, however, the Guard and Reserves have seen a significant increase in the number of deployments serving in the Persian Gulf War, Operation Iraqi Freedom, and Operation Enduring Freedom-Afghanistan. During the Gulf War (August 2, 1990 – February 28, 1991), 18% of all soldiers deployed were from National Guard/Reserve Units (Lakhani & Fugita, 1993). From September 11, 2001, to May 31, 2007, over 538,971 National Guard (47.9%) and Army Reserves (49.5%) have served in support of Operation Iraqi Freedom (March 20, 2003 to August 31, 2010) and Operation Enduring Freedom (October 7, 2001, to present) (Schneider, Pilling & Williams, 2007). With their service in the above mentioned military operations, the members of the National Guard and Reserves report being exposed to potentially traumatic combat experiences at the same rate as the active military components, 69.9% and 66.5% respectively (Miliken, Auchterloine, & Hoge, 2007). The traumatic combat experiences measured included discharging their weapon, having feelings of the danger of being killed, and witnessing someone wounded or killed in combat operations (Miliken, Auchterloine, & Hoge, 2007).

It is well documented that exposure to a war-zone is related to negative mental health outcomes (Castro & McGurk, 2007; Hoge et al., 2004; Iowa Persian Gulf Study Group, 1997; Kang et al., 2003; Kulka et al., 1990; Ouimette et al., 2008; Vogt, Samper, King, King, & Martin, 2008; Wolfe, Erickson, Sharkansky, King, & King, 1999). Archival examination of

military and medical records dating back to the Civil War show a strong association between war trauma and the development of nervous and physical disease (Pizarro, Silver & Prause, 2006). One of the first comprehensive studies involving war trauma was the National Vietnam Veterans Readjustment Study (NVVRS) conducted between 1986 and 1988. After a number of veterans returned home from the Vietnam War with significant readjustment issues, the study revealed that 15.2% of all male veterans (479,000) who served in the war had symptoms consistent with posttraumatic stress disorder (Kulka et al., 1990). This finding is noteworthy since the data from the study was gathered decades after their return from the Vietnam War proving that posttraumatic stress disorder adversely impacted veterans' lives well after the war's end. In fact, largely due to the experiences of Vietnam veterans, posttraumatic stress disorder (PTSD) was introduced into the third edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-III)* in 1980 by the American Psychiatric Association (Flouri, 2005). The American Psychiatric Association used the term "PTSD" to refer to a psychological disorder that results from exposure to an extraordinary traumatic event (Kulka et al., 1990). The National Vietnam Veterans Readjustment Study and the official adoption of the definition of PTSD was the impetus for further studies regarding war trauma and mental health outcomes.

Most studies regarding war trauma were limited to the active military components of the Armed Forces until Gulf War I. With the increase in the number of National Guard and Reserves serving in recent conflicts, their overall health is drawing more attention from researchers. Preliminary studies have determined that members of the National Guard/Reserves have poorer mental health and physical outcomes than the Active Duty personnel as a result of exposure to combat (Vogt, Samper, King, King & Martin, 2008; Iowa Persian Gulf Study Group, 1997; Miliken, Auchterloine, & Hoge, 2007; Ouimette et al., 2008). Although the research is

limited, it appears that the National Guard/Reserves experience different deployment stressors and therefore suffer from different mental health and physical outcomes than Active Duty members of the military (Vogt, Samper, King, King, & Martin, 2008; LaBash, Vogt, King & King, 2009). Various deployment stressors such as the level of combat preparedness, family and career disruptions, age, and number of deployments may factor into the differences in the reactions to combat between the National Guard/Reserves and the Active Duty component of the military (Vogt, Samper, King, King & Martin, 2008; La Bash, Vogt, King & King, 2009). Understanding the differences in deployment stressors and combat outcomes for the National Guard/Reserves is vital in establishing policies and procedures for this population as they return from war and transition into their civilian lives.

The successful transition from solider to citizen post-war is critical for all members of the National Guard/Reserves and even more so for police officers who serve in combat as part of their military commitment. The transition from combat to their existing jobs in urban policing is a crucial process for police officers since they have the ultimate responsibility of protecting and serving the public with tools that can have deadly consequences. Police officers serving in combat go from wearing camouflage in desert-like conditions operating under the rules of engagement of war one day to wearing a police uniform operating under the use of force policies of police departments the next. This transition is magnified by the change in the operational tempo of the combat environment to the overall setting of cities and towns across America. This point is captured as one returning veteran police officer from the Los Angeles Police Department states, "People like to make comparisons between the war in Iraq and the war on the streets of Los Angeles. To the extent gangs are shooting at you instead of insurgents, it's similar. But in Los Angeles you don't have to worry on every street corner whether a bomb is going to go off or

someone's going to shoot an RPG [rocket-propelled grenade] down at you" (McGreevy, 2006, B.1). Given the responsibilities involved in policing, the police officer's mental and physical health is imperative in considering their level of readiness to return to duty after exposure to combat.

Police officers returning from war have been exposed to combat experiences repeatedly in conjunction with critical incidents they have experienced throughout their careers in law enforcement. There is a considerable amount of literature examining the stress of police work as it relates to critical incidents and organizational stress unique to law enforcement officers (Selye, 1978; Reese, 1986; Carlier, Lamberts & Gersons, 1977; Toch, 2002; Speilberger, Westberry, Grier, & Greenfield, 1981; Martelli, Waters & Martelli, 1989; Territo & Vetter, 1981; Kroes et al., 1974, Collins & Gibbs, 2003). It appears that research into the topic of overall police stress is well documented however there is a gap in the literature addressing the impact of the cumulative nature of stress for police officers who have endured both combat experiences and critical incidents. The gap in the literature is largely due to the fact that deployment of police officers into combat zones is a relatively new phenomenon.

Most of the research involving combat and police stress is based on a pathogenic paradigm where exposure to critical incidents or combat disrupts normal functioning. In contrast, there is a growing amount of literature addressing the idea that positive and negative psychological outcomes can coexist subsequent to the exposure to stress (Butler et al., 2005; Frederickson, Tugade, Waugh, & Larkin, 2003; Linley & Joseph, 2004). Some factors act as a protective buffer to the cumulative nature of stress and are important to recognize in speaking to the resiliency of individuals. By examining the cumulative nature of stress from the perspective

of identifying deployment risk and resilience factors, police commanders can develop successful reintegration strategies for police officers returning from combat.

Given the fact that at least 10% of the National Guard/Reserves serving in Iraq are public safety professionals, it is important to understand the impact of military service on returning police officers (Ritchie & Curran, 2006). Discovering the factors that contribute to the overall positive and negative outcomes of the combination of combat and police stress will assist in shaping organizational strategies and lead to a better understanding of the needs of these police officers. The purpose of this study is to assess deployment risk and resiliency factors that impact the overall adjustment of police officers who have served in Operation Iraq Freedom and Operation Enduring Freedom/Afghanistan.

Chapter 2

Review of Literature

Military combat operations in Iraq and Afghanistan led to the largest deployment of National Guard and Reservists in the history of the United States. Due to the intensity and frequency of combat especially in Iraq, Operation Iraqi Freedom (OIF) was operationally challenging not only for the active military component, but also for the part-time citizen soldiers in the National Guard and Reserves. Initially serving in a support capacity for ground combat units, Guard and Reserve members quickly became operational and at times comprised close to nearly half of the fighting forces in Iraq (Schneider, Pillings, & Williams, 2007). Within this group of National Guard and Reservists serving in combat, are a group of men and women who are law enforcement officers when not serving in the military. This group of police officers is exposed to traumatic experiences through their jobs as law enforcement officers in addition to combat experiences associated with their military duties. This cumulative physical and emotional stress is of paramount concern. After a lengthy military deployment, the officer returns from a combat environment to resume law enforcement duties that require life and death decisions in a relatively short amount of time.

Discussing the effects of police stress and combat stress in relationship to deployment risk and resiliency factors requires a thorough examination of the attributes of both types of stress. Police stress historically is shaped by organizational issues of a bureaucratic nature and critical incidents, while combat stress is defined by the specific, difficult conditions of the conflict. Violanti's (1996) research was the first to address the similarities of combat experiences and the work of a police officers in relationship to occupational trauma. According

to much of the research, traumatic police work experiences and combat experiences can result in symptoms of posttraumatic stress and other stress symptomatology.

Lastly, it is necessary to mention the socialization process of the police and military cultures. As one progresses through their career, features of the socialization process are similar in both cultures. A key aspect present in the two cultures is the stigma surrounding the presence of mental health and stress issues that subsequently prevents the individual from seeking out assistance and services from mental health professionals. In professions that are surrounded by a degree of masculinity, it is considered weak to discuss military or police matters in an emotional context. By understanding this key issue, along with the nature of cumulative stress, an exploratory study can be conducted in examining the necessity for developing policies that will guide police commanders in the proper reintegration process of returning police officers from military deployment into urban policing.

<u>Police Stress</u>

Police work is substantially different from other occupations and researchers continue to explore the ways in which the field of law enforcement varies from other types of employment. Generally accepted by scholars and communities across the world, law enforcement is one of the most stressful occupations (Selye, 1978; Reese, 1986; Carlier, Lamberts & Gersons, 1997). "Police officers are exposed to acute stressors that most individuals do not face on the job, at least with not the same intensity or frequency" (Toch, p. 7, 2002). Acute stressors such as shootings and riots are rare in the life of police officers, however, routine tasks such as vehicle stops, domestic calls, and 911 emergency calls can quickly turn into dangerous situations for the police officers. Common job tasks in an uncontrollable environment can have deadly consequences with little or no warning making police work mentally and physically challenging.

In addition, poor diet, shift work that interferes with sleeping habits, separation from family, and little time off, severely undermine physical, emotional, and mental health over time.

There has been an ongoing debate regarding the source and degree of stress that the job of a police officer entails. In early research efforts, there was a struggle to define the term police stress in a theoretical framework. Most of the preliminary research suggested that the major stressor in law enforcement was the overall dangerousness of the job. Early researchers hypothesized that the occupation of police officer was extremely stressful psychologically and as a result there were higher rates of suicide, family violence, substance abuse, and premature death within the ranks of all law enforcement personnel homogeneously (Malloy and Mays, 1984). As law enforcement agencies responded to the police stress hypothesis, more attention was given to the overall idea of a stressful work environment for police officers launching an exploration into the psychological services available to law enforcement officers.

Since the 1970's, there have been numerous studies challenging the over-simplification of the police stress hypothesis. As a result, sources of police stress became more defined in the research which led to empirical studies using scientific methodology that isolated the sources of stress and the outcomes associated with specific stressors. In addition, several variables that were not addressed in the police stress hypothesis, such as hardiness, social support, genetic factors, health practices, and personality dispositions became an interest for further research in the stress reaction of police officers. Malloy and Mays (1984) proposed a theory based on the Diathesis-Stress Paradigm presented by Davison and Neale (1982) in response to the traditional police stress theory. The Diathesis-Stress Paradigm rests on the assumption that not all individuals react to stress the same. Malloy and Mays (1984) used the term "psychobiosocial distress" to describe the inability for an individual to manage stress levels due to a complex

interaction of genetic and social-psychological illness variables. "From a Diathesis-Stress perspective, future research on police should focus on those physical and social-psychological variables that significantly affect the management of stress that all police officers are assumed to experience to varying degrees" (Malloy and Mays, 1984, p. 216). Malloy and Mays (1984) also suggested a proximity-control hypothesis that predicts police stress as it relates to the officer's physical and psychological proximity to the community as it is defined by their police assignment, along with whether or not this interaction requires the social control of others. The social impact theory provides a foundation for the proximity-control hypothesis by exploring the impact of individuals on one another and groups as well as different group behaviors. The occupational role of police officers and the interaction with others also create a variation of police stress. For example, a female state trooper interacting with the community in a rural environment creates different stressors than a female state trooper patrolling in a predominantly urban area.

The majority of research into the source of police stress has centered around two broad themes: the organizational and bureaucratic stressors within law enforcement organizations, and the inherent dangers associated with police work (Speilberger, Westberry, Grier, & Greenfield, 1981; Martelli, Waters, & Martelli, 1989). Organizational stressors are events that are precipitated by policies and procedures created by police administration that lead to distress among the officers. Inherent stressors are events that occur during the course of being a police officer that have the potential to be psychologically or physically harmful to the officers, such as danger, violence, and crime (Violanti & Aron, 1993).

Organizational Stress

Police officers often mention various job stressors that relate to organizational practices, the criminal justice system, the public, and the specifics of police work (Territo & Vetter, 1981; Reese, 1986). Organizational issues are more often cited as a significant issue for law enforcement personnel than the dangers of the job (Kroes et al., 1974; Crank & Caldero, 1991; Kop & Euwema, 2001, Collins & Gibbs, 2003; Storch & Panzarella, 1996; Newman & Rucker-Reed, 2004). One of the earlier studies frequently cited in police stress research is the study by Kroes, Margolis, and Hurrell occurring in 1974. The study involved a purposive sample of 100 male police officers from the Cincinnati Police Department. The semi-structured interviews with the officers involved four standardized questions designed to determine the sources of stress. The key sources of stress identified in this study were largely organizational and bureaucratic in nature. Issues such as criminal court leniency and the lack of consideration in court scheduling topped the list. Other issues mentioned as job stressors included administrative policies, poor equipment, shift work, and community relations.

Storch and Panzarella (1996) study of police officers supported the finding that organizational variables such as the relationships with supervisors, personnel policies, and work conditions emerged as the greatest source of stress along with the relationships with non-police entities. Interaction with the media, the public and legal system was the second source of stress identified by Storch and Panzarella (1996). Newman and Rucker-Reed (2004) duplicated Storch and Panzarella's research using a population of federal United States Marshals to determine if the source of stressors was the same for federal officers as local police officers. Newman and Rucker-Reed (2004) confirmed the findings of Storch and Panzarella (1996) in determining that

the variables associated with stress were related to organizational variables such as problem bosses and the work environment.

Additional research with law enforcement agencies from other countries (Brown & Campbell, 1990; Biggam et. al., 1997) supported the findings of Kroes, Margolis, and Hurrell. Excluding critical incidents in their studies, police officers perceived the source of their personal stress to be attributed to organizational and management issues such as staff shortages, inadequate resources, work overload, and a lack of communication. Crank and Caldero (1991) asked members from eight medium sized municipal police departments located in Illinois to write about their greatest source of stress. The results were sorted into five different categories: the organization, the task environment, the judiciary, personal or family concerns, and city government. The organization category was cited by more than 68% as being the officer's primary source of stress specifically upper-management. In contrast, the category of task environment was reported by 16% of the respondents as being their primary source of stress.

Researchers have examined the structure of law enforcement organizations as a cause of stress among police officers. Law enforcement organizations tend to be paramilitary in structure (Reiser, 1974). As a result, there is little communication that flows from the patrol officer to upper management. With the combination of an authoritarian style of leadership and the lack of input by the patrol officer especially regarding the formulation of policy, a feeling of helplessness and lack of control permeates among lower level officers causing stress (Malloy and Mays, 1984).

Violanti and Aron (1993) explored the relationships between organizational and inherent police stressors, mediating factors of job satisfaction and goal orientation, and individual distress. A purposive sample of 100 officers was used in this study from southeast New York.

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An important finding in this study was that organizational stressors had a total effect on distress of approximately 6.3 times that of inherent police stressors (Violanti & Aron, 1993). Job satisfaction was also an important feature in the study. The police officers that reported higher job satisfaction reported lower levels of stress. It is important to note, however, if the police officer was faced with an organizational stressor, job satisfaction was markedly reduced.

<center>Critical Incident Stress</center>

In addition to stress resulting from organizational demands, police officers are also exposed to stressors that surround critical incidents. Critical incident stress is another key component when examining the work environment of law enforcement officers. The term critical incident typically involves a dramatic event, or events, where there is a threat of severe injury, death or devastation. Critical incidents are defined in numerous ways. Garrison stated that a critical incident is "an incident that causes a person to have unusually strong emotional reactions that have the potential to interfere with his or her ability to function either at the scene or later" (Garrison, 1991, p. 45). In further clarification, Everly (1999) made a distinction between the term critical incident and crisis. Everly explained that, "Contrary to the crisis response, a critical incident may be thought of as the stressor event that has the potential to lead to a crisis response in many individuals. More specifically, the critical incident may be thought of as the stimulus that sets the stage for the crisis response" (Everly, 1999, p. 76). In summary, a critical incident involves some type of trauma that can have a physical, mental, and emotional impact on the individuals involved.

Traumatic police stressors can be separated into two categories; very violent incidents and very depressing incidents (Carlier and Gersons, 1992). Violent incidents consist of shooting incidents or hostage-taking where there is an implication of active participation by the police

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officer in the event. The police officer is directly involved in the violent incident. Very depressing incidents are situations in which the police officer responds to the aftermath of an event and is not actually present for the event itself. Some examples of depressing events include a car accident involving a child, child abuse, and disaster work. Police officers deal with both types of trauma with great frequency in the course of their work unlike most other rescue workers who deal with primarily depressing events. This distinction sets the work of law enforcement apart from other occupations. "Police officers regularly deal with the most violent, impulsive, and predatory members of society, put their lives on the line, and confront cruelties and horrors that the rest of us view from the sanitized distance of our newspaper and television screens" (Blau, 1994, p. 54).

Similarities between combat experiences and police work was inferred by Violanti (1996) when he examined the aftereffects of occupational trauma using the Vietnam War as a frame of reference for combat. Acknowledging that the exposure to trauma may be more intense in combat, police officers are subjected to traumatic events throughout their careers. Violanti (1996) identifies six areas where police work and combat experiences are similar in nature: guerilla warfare at home, the identity of the enemy, a continual sense of insecurity, lack of support, witnessing abusive violence, and depersonalization.

Guerilla warfare in Vietnam involved combat on the enemy's home ground. Police work also involves a "peacetime combat" where the police officer is on duty twenty-four hours a day, seven days a week (Violanti, 1996). Protecting and serving the public often occurs in neighborhoods with a high rate of crime. Police officers must sustain a high level of vigilance at all times for their survival. It becomes a challenge when the officer tries to return to a normal social life when they are off-duty and the high level of vigilance is unnecessary.

As veterans of Vietnam faced the challenge of identifying the enemy during the war, police officers are constantly making judgments concerning the potential threats of individuals who they come into contact with on a daily basis. The accuracy in which police officers identify a potential threat is paramount to their survival. Potential threats cross cultural and socio-economic boundaries making assessment of threatening individuals difficult.

A sense of insecurity exists in a combat environment where there is a constant state of chaos and fear of the unknown. In an effort to survive the chaos, servicemen become suspicious of their surroundings and of the enemy. This unstable environment creates a state of paranoia. Police officers respond in a similar way to the impending danger and the uncertainty of their work. In an environment where anyone can be a potential enemy, suspicion develops as part of the police personality. Paranoia becomes a defense mechanism in dealing with the suspicion of others creating a police culture of "us" versus "them" mentality.

The lack of support from the outside world is a concept that can be illustrated in both police work and combat from the perspective of the Vietnam War. The Vietnam War was controversial and the public outcry regarding the war had a negative context. Veterans felt that they were fighting a war with little American or Vietnamese support. Police officers feel the same way as they identify lenient court systems, lack of support from the public, and the enormity of the crime problem as stressors in their work. "Just like American soldiers who found themselves alone in a far-off land, the police officer works in an environment of apathy, non-support, and isolation" (Violanti, 1996, p. 118).

<u>The Concept of Resiliency and the Psychobiosocial Approach to Stress</u>

In the area of stress research, the review of literature points to the impact of the cumulative exposure to violent and depressing critical incidents, not just impending dangers as

significant factors in distinguishing police work from other careers. Police officers depending on their assignment can be exposed to more depressing and violent incidents in a short period of time than the general public in a lifetime (Violanti, 1996). It is not to say that every officer who is exposed to a critical incident will become dysfunctional, but the perspective of the frequency of exposure lends itself to the current focus of research on resiliency. Present research has evolved into a psychobiosocial approach to policing where the reactions of police officers to their work stressors are being examined from the psychological, sociological, and biological perspectives as it relates to the concept of resiliency. As researchers identify the variables that describe resiliency, a new approach to stress management in law enforcement emerges. The new approach focuses on proactive policies that involve the recognition, prevention, and preparation of police to trauma and less on the reactive nature of the psychological aftermath of traumatic events.

This proactive approach to stress management is also being recognized by the military community. As illustrated in previous wars such as Vietnam, many veterans returned from war with psychological difficulties or minimally with re-adjustment issues. The Veteran's Administration and the military were ill equipped to deal with the mass number of veterans needing assistance. Through experiences with other conflicts, and with the current number of stress injuries associated with Operation Iraqi Freedom and Operation Enduring Freedom, the military is exploring new policies and procedures that will mitigate stress reactions due to the exposure to combat.

<u>Combat Stress</u>

The difficulties related to combat are often seen publicly through media broadcasts from war zones, newspaper articles, historical documentaries, and movies. Similar to the outside view

of the world of policing by the general public, the perception of combat from an outsider's point of view is very different than the actual exposure to combat. Green (1993) proposes eight generic dimensions of war zone trauma; threat to life an limb, severe physical harm or injury, receipt of intentional harm or injury, exposure to the grotesque, violent or sudden loss of someone close to you, witnessing or learning of violence to someone close to you, learning of exposure to a noxious agent, and causing the death or severe harm to another. Historically, other researchers have identified three types of war zone stressors: demands on physical resources, demands on emotional resources, and loss of cohesion or morale in a combat unit (Grinker & Spiegel, 1945; Kardiner & Spiegel, 1947). Laufer, Gallops & Frey-Wouters (1984) recognize the level of combat exposure, witnessing abusive violence, and the participation in abusive violence as war stressors. Schlenger et al. (1992) includes deprivation and the loss of meaning and control to the stressors recognized by Laufer, Gallops & Frey-Wouters (1984). Every war is unique in reference to the terrain of the combat, the conditions associated with the terrain, and methods of warfare. War also distinguishes itself based on the society's opinion and perspectives surrounding the conflict. Addressing the deployment and combat stressors in modern military operations, such as Operation Iraqi Freedom, Nash (2007) cites five categories of stressors; physical, cognitive, emotional, social, and spiritual stressors.

According to Nash (2007), physical stressors include, heat and cold, dehydration and wetness, dirt and mud, sleep deprivation, noise and blasts, fumes and smells, bright light or darkness, malnutrition, and illness or injury. The physical body temperature of soldiers is often elevated to dangerous levels due to the excessive heat in Iraq and the lack of air-conditioning in military equipment. In addition to the temperature concerns, fine grains of sand are consistent

with the terrain of the Syrian Desert creating "brown-out" conditions limiting visibility and contributing to respiratory difficulties of soldiers (Nash, 2007).

Nash (2007) cites additional physical stressors that center around the senses of sound, sight and smell.   Loud noises and sounds from various sources such as small arm fire, rocket propelled grenades, and improvised explosive devices along with the sounds of death and dying from another human or animal in a combat environment can be a physical stressor of war. Bright light from the sunlight in the Syrian Desert and the light from the blasts of improvised explosive devices is potentially damaging to eye sight. In addition, darkness creates a sense of anxiety as it is difficult for troops to move around in the dark to complete missions. Finally, the sense of smell is captured by the odors associated with combat. The combat odors are associated with human waste, blood, and burnt flesh. The threat of injury and death are significant stressors in any war and Operation Iraqi Freedom is certainly noted as a war with a large number of brain injuries. Minor health issues, losing a limb, traumatic brain injury, or death, are all associated with this physical stressor. The seriousness of the injury or exposure to the threat of injury often dictates the period of time needed for recovery physically and psychologically (Dohrenwend & Dohrenwend, 1981). The last physical stressor mentioned by Nash (2007) is sleep deprivation. Sleep is needed for the body to recover. Psychologically and physiologically the human body cannot tolerate long periods without sleep. "Sleep deprivation is the best way to physically predispose yourself to become a stress casualty" (Grossman, 2004, p.23).

Nash (2007) cites that cognitive stressors of combat include the lack of information and conversely knowing too much information. Most strategic and tactical operations do not filter down to the troops during wartime. Rumors often fill the void for the lack of information regarding missions from superiors. The rumors magnify the anxiety due to the uncertainty of

where they will be in the next hours or even the next days. Negative information regarding operational combat problems, or a domestic situation at home, can be difficult to process since there is little that the soldier can do to change the predicament (Nash, 2007). The ambiguous nature of the role of the military during Operation Iraqi Freedom and the ever-changing rules of engagement are also cognitive stressors of modern combat (Nash, 2007). The end of official combat operations in Iraq was declared on April 30, 2003, and the military was to transition to a peace-keeping mission. As the United States military attempted to transition into a peace-keeping mission, they were confronted with insurgency attacks and ambushes. Compounding the ambiguous role of the military's duties day to day, the rules of engagement were also unclear. Rules of engagement are the standards which dictate when soldiers are permitted to fire against the enemy (Nash, 2007). It is standard procedure for soldiers to use deadly force when an adversary poses a threat to Coalition or civilian life. It became more and more difficult to identify the adversary in Operation Iraqi Freedom due to close combat conditions, and the use of civilian noncombatants as human shields (Nash, 2007). Lastly, many young soldiers are confronted with experiences that challenge their belief systems of what is "good" and what is "evil." As the soldiers try to change their belief systems to include the new details of their combat surroundings, some come to terms with the new beliefs while others suffer from mental confusion (Nash, 2007).

Nash's (2007) emotional stressors are evident in a war zone as soldiers engage in combat with potential deadly consequences. Taking part in deadly combat creates a special bond between soldiers that is based on trust and intimacy. The soldiers depend upon one another for survival which deepens the bond. Shay (1994) compares the intensity and nature of the bond between comrades-in-arms to the bond of a mother and a child. A loss of a friend to death or

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injury as a result of combat elicits a powerful, emotional response especially if it involves a direct hit resulting in gruesome injuries. As the soldier continues to fight for survival in a combat zone, there is little time to grieve or cognitively process the event. In Operation Iraqi Freedom there was little control over one's environment due to the lack of clear battle lines and non-uniformed adversaries creating feelings of helplessness and fear (Nash 2007). Making the decision to actually kill another human being can be very traumatic as it is suggested that all humans have an instinctive aversion to kill members of their own species (Grossman, 1995).

Nash (2007) includes social stressors as a category of combat stressors. Soldiers are deployed for long periods of time away from their family members, friends and other loved ones who historically have acted as a social support system. Although mail, telephone calls, and emails offer a degree of communication, it does not substitute for actual face-to-face contact. Nash (2007) addresses the media and public opinion in this category. "No one fully knows what motivates warriors to volunteer for military service and to willingly fight, suffer, and sacrifice in war. But love of country must certainly be one of their strongest motivations" (Nash, 2007, p.28). The media and public opinion speak volumes to the servicemen who are making sacrifices in serving their country and whether or not their efforts are valued.

The last category listed in Nash's (2007) combat stressors is spiritual stressors that involve the loss of faith in God, and the inability to forgive or feel forgiven. The belief in a benevolent, loving God can be questioned after witnessing the devastation and evils of war. In contrast, others can develop a deeper faith as a result of observing the horrors of war. As stressful events happen in a war zone, soldiers return home with feelings of disappointment for letting people down and regret for certain behaviors (Nash, 2007). Soldiers struggle through these emotions and putting them in perspective as it relates to the war environment.

In attempts to fill a gap of empirical literature in identifying the range of stressors experienced by veterans of Operation Iraqi Freedom, LaBash et al. (2009) constructed a conceptual framework of stressors through an exhaustive review of information from interviews with veterans and mainstream media reports from reporters entrenched in Iraq. Using war zone stressor constructs developed from the Vietnam and Gulf Wars (King et al., 1995; King et al., 2006; Vogt, King, & King, 2004) as their framework for collection, LaBash et al. (2009) used LexisNexis Academic as their source of information from national and regional newspapers across the country. The results of their research are divided into two sections, "The Nature of Combat in Iraq" where they address aspects of combat and "The Changing Face of Military Deployments" which are aspects relevant to the population of Guard and Reserves serving in Iraq.

In the first section, "The Nature of Combat in Iraq," LaBash et al. (2009) report that military personnel are being exposed to the elements of traditional warfare consisting of engaging in firefights, dealing with injured soldiers, and observing the bodies of those killed in action similar to those serving in previous wars. A total of 85 out of 336 media articles (25%) addressed the topic of traditional warfare (LaBash et al., 2009). The largest percentage of articles, 49%, captured the unconventional techniques used in insurgency warfare (LaBash et al., 2009). The articles summarize the challenges in dealing with the insurgents mixing into the population and infiltrating areas that are considered safe by the military. The infiltration is easy for the insurgents since they do not wear uniforms and are hard to identify by military personnel. There is no safe place in Iraq proven by attacks that have occurred on American military bases in particular dining halls that are specifically targeted by the insurgents.

Another significant aspect of insurgent warfare creating a great deal of attention is the use of Improvised Explosive Devices (IEDs). LaBash et al., (2009) found several articles addressing the difficulties in identifying such devices since they are often hidden in pieces of garbage, a child's toy or an animal carcass. The suddenness of the explosion along with the inability to defend against this war tactic creates a sense of vulnerability for military personnel. More than 25,000 soldiers have sustained injuries from IED's which may impact their ability to manage other stressors of deployment and contribute their overall post-deployment health ("Defense," 2009; Schnurr & Green, 2004; Schnurr & Jankowski, 1999).

The second portion of LaBash et al. study (2009) titled, "The Changing Face of Military Deployments," addresses many issues surrounding the differences in deployment stressors between the National Guard/Reserves and the Active Duty military personnel. Several articles addressed the demographics of the National Guard/Reserve population as being older and with age come stressors related to the rigors associated with deployments and the disruption of family and established careers. The level of preparedness and training constituted 21% of the articles collected during the study (LaBash et al., 2009). Concerns about the National Guard/Reserves training regiment of one weekend a month and a two week summer drill as being adequate for the preparation of their duties during deployment were frequent. Along with the training concerns were issues raised about the lack of proper equipment to include protective gear. The National Guard/Reserves were engaging in the same military operations as the Active Duty component with a limited amount of resources early in the conflict.

Similar to the cumulative effects of police stress, combat stress is no different in the way that it impacts servicemen and women except for the aspects of the duration and frequency of the stressors. Current military deployments continue for several months and during that time

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soldiers are typically exposed to a multitude of critical incidents such as firefights and other aspects of traditional warfare. Conversely, police officers may never experience a firefight throughout their career and their exposure is not as intense as combat exposure however their experiences can be cumulative in nature. Many of the stressors associated with a combat zone are not overpowering in themselves, however, the steady presence of the stressors over a period of time can take a physical and psychological toll.

<div align="center">Police and Military Culture: Barriers to Care</div>

The police and military cultures are similar in nature due to an immediate and powerful socialization process based on the denial of human emotions, vulnerability, loyalty, and social isolation (Violanti, 1996; Paoline, 2003; Janoff-Bulman, 1985). The socialization process starts for both occupations at the basic training levels and continues throughout their careers. Since the occupations are subjected to high risk factors that include danger and threats of bodily harm or even death, training aspects of self-defense, firearms, and street survival are the foundation of training. Throughout police basic training, Violanti (1996) suggests that a sense of "superhuman emotional and survival strength" (p.92) are instilled in police recruits as they are told they are unique and unlike the average citizen. Violanti (1996) includes in his writings that the "superhuman emotional and survival strength" is reinforced in training when police recruits are told that they are beyond harm. In support of this notion, is the fact that any situation the police officer comes across during their work, they have the legitimate force and authority to control the situation through their position as a law enforcement officer. They are expected by their peers and society to set aside any emotions and take control of the scene to protect order and to protect other citizens. By the end of the initial academy training, the officer graduates with feelings of physical and psychological indestructibility (Violanti, 1996).

Janoff-Bulman (1985) suggests that when the recruit graduates from the police academy, they have an "illusion of invulnerability." This illusion is crushed when they experience their first traumatic incident. The officer comes face-to-face with an event that violates a key world assumption that the dangers in the world do not happen to them. In an occupational world where invulnerability is a requirement, feelings of anxiety and helplessness after a traumatic event heightens the fear of reoccurrence (Janoff-Bulman, 1985). Perloff (1983) suggests that in occupations, such as policing, police officers who have an acute sense of invulnerability prior to the traumatic event, have more difficulty in adjusting to life after the traumatic event. Post-traumatic adjustment to an event includes a heightened sense of danger and fear (Solomon and Horn, 1985). Somenavilla (1985) indicates that during this period of re-adjustment after a traumatic event, police officers may question their careers in law enforcement and leave the police department. Another reaction to a posttraumatic event may involve the police officers taking a different position within the department that does not require patrol duties thus limiting their exposure to the dangers of society.

Service members and police officers rely on each other for physical and emotional protection and survival as a result of the environment in which they work (Manning, 1995; Westley, 1970). Members of these occupations expect their partners to back them up in dangerous situations as well as to protect them from difficult supervisors or administrative policies that threaten their career well-being. Personal and organizational survival depends on the strong bonds or social cohesiveness that develops between officers. In addition, the police assume a "we" versus "them" attitude toward the public as a result of the hostility and lack of support by the community. This mind-set is further solidified by a shared belief that no civilian

could possibly understand their day-to-day experiences as law enforcement officers (Miller, 2006).

Loyalty intensifies the social isolation aspect of the police culture. As previously mentioned, during training recruits are told that they are unique as police officers and different from the general population. As they start interacting with society, this uniqueness is further defined by their uniforms, marked vehicles, use of authority, and exposure to the negative aspects of society. Police become an insular group as they come to terms with their obvious signs of authority and the "we" versus "them" mentality. Law enforcement officers tend to feel more comfortable with those who understand the job which is typically other law enforcement officers.

Police officers learn through the socialization process to share their experiences in ways that de-emphasize emotions. In the police culture it is a sign of weakness to share inner feelings or to talk about events that are shocking in an emotional context or in terms that project fear. A contributing factor to the denial of human emotions is the physical conditioning, fighting, and weaponry associated with training which promotes a theme of masculinity and personal detachment (Crank, 2004; Chan 1997). As illustrated in a study of eleven New Zealand officers, a review of interview transcripts regarding emotional expression revealed that officers minimize the impact of traumatic events by using understated, low-key descriptors such as "apprehensive" instead of "afraid" (Frewin, Stephens & Tuffin, 2006). Frewin, Stephens & Tuffin (2006) state that officers tend to evaluate particular actions or behavior in terms of emotional adequacy or deficiency related to job ability. Any utterance or expression of emotion is judged in terms of negatively impacting the officer's performance or possibly placing their colleagues at risk. Distancing strategies such as "dark humor" are used to alleviate traumatic aspect of their work

(Innes, 2002; Hutter & Lloyd-Bostock, 1990).   By making a joke of a disturbing event, it makes the real horror of the event more palatable.

The military socialization process also promotes a culture grounded in the denial of emotions when it comes to experiencing the death and the destruction of war. Dunivin (1994) proposes that the military culture is defined by a combat, masculine-warrior paradigm. The military is primarily comprised of men therefore the culture is shaped by men. Similar to the training of police officers, the majority of military training is based on physical strength, firearms and fighting in a strategic war environment. "Soldiering is viewed as a masculine role—the profession of war, defense, and combat is defined by society as men's work" (Dunivin, 1994, p. 532). Experiencing combat in war is often seen as a test of "manhood" and a way to prove one's personal strength and courage (Goldstein, 2001). Admitting to any stress symptoms due to combat is equivalent to admitting failure and a sign of weakness. Hoge et al. (2004) study of members of the active military (U.S. Army and Marine Corp) assigned to combat duties in Iraq and Afghanistan revealed that the respondents who showed positive results for a mental disorder, were twice as likely to express a concern about the stigmatization in seeking out mental health care than those respondents who had negative results for a mental disorder. "Of the soldiers whose responses met the screening criteria for a mental disorder only 38 to 45 percent indicated an interest in receiving help, and only 23 to 40 percent reported having received professional help in the past year" (Hoge et al., 2004, p.21). Concerns about how the soldier was perceived by peers and the leadership were considerably important among this sample of soldiers (Hoge et al., 2004). Stecker et al. (2007) found that National Guard soldiers who served in Operation Iraqi Freedom felt there were several disadvantages in seeking mental health care. The stigma of being labeled "crazy" and the perceived negative impact on their military careers were cited as

their main concerns. Their fears also included the possibility of becoming non-deployable or not being able to receive military promotions.   Higher ranking officers were worried about the perceptions of their leadership abilities.

Part of the stigmatization of seeking mental health care may be attributed to the history of combat stress theories. Throughout history, combat stress theories have been associated with shame. In the Civil War "soldier's heart" and in World War I "shell shock" was due to "sickness of the will" (Nash, 2007). Treatment of such maladies was coercive in nature using as electric shock treatment, hot bath treatments and isolation treatments for combat stress reactions. In World War II, combat stress was diagnosed as hysteria or fatigue. The Vietnam War stress reactions were seen as a sign of weakness, a result of bad choices, and of misconduct. In today's world, the military is examining combat stress as an injury, not as a weakness, however, the military culture is slow to accept the emerging combat stress injury theory.

<div align="center">Posttraumatic Stress Disorder</div>

In a normal stress response, a threat or danger is perceived and there are physiological consequences with the activation of the sympathetic nervous system. This is consistent with the "fight-or-flight" survival response. After the threat or danger dissipates, the parasympathetic nervous system assists the body in returning to a normal functioning level. In circumstances where an individual suffers from Post Traumatic Stress Disorder (PTSD) symptoms, the sympathetic nervous system continues to function at an elevated state over a period of time. According to Wilson (2004), PTSD is a "psychobiological syndrome that comprises an interrelated set of symptoms that cohere to form a prolonged stress reaction to trauma" (p.11). As a result of the traumatic exposure, new physiological, psychological and behavioral patterns of reactivity may emerge that were not present before the traumatic experience (Wilson, 2004).

<u>Definition of Posttraumatic Stress Disorder</u>

According to the Diagnostic and Statistical Manual for Mental Disorders (DSM) IV-TR (2000), PTSD develops after an individual experiences or witnesses a traumatic event that involves the actual or threat of death or serious injury to self or others, or a threat to the physical integrity of self or others. For police officers, events that fit into the diagnostic criteria for PTSD could include shooting incidents, hostage situations, or disasters. For the armed forces, combat is an experience that includes the death and destruction of others along with a threat to physical integrity which fits into the description of a traumatic event as described in the DSM-IV-TR (2000). "Diagnostically, PTSD is a syndrome of emotional and behavioral disturbance following exposure to a traumatic stressor that injures or threatens self or others, and that involves the experience of intense fear, helplessness, or horror" (Miller, 2006, p.94).

The criteria for the diagnosis of PTSD are defined by three sets of symptom clusters. The first symptom cluster is the persistent re-experiencing of the traumatic event. This can manifest itself in distressing recollections of the traumatic event and re-occurring nightmares. Images, symbols or other external cues that remind the individual of the traumatic event may trigger a physiological or psychological response where the individual feels like they are re-living the event. The second symptom cluster is the avoidance of stimuli associated with a traumatic event or numbing of general responsiveness. Individuals may avoid activities, places or things that remind them of the traumatic event. They may also be unable to recall important aspects about the event. General numbing includes the inability to have deep feelings or interest in activities and a sense of detachment from others. The third cluster includes symptoms of increased arousal. Increased arousal includes irritability, anger, hyper vigilance, exaggerated startle response, and difficulty in sleeping. The symptoms must persist three weeks after the triggering

event and significantly impair the individual's occupational and social functioning (Schnurr and Friedman, 1997).

<div align="center">Theoretical Framework of PTSD and other Stress Disorders</div>

By examining the thought and mood processes of individuals who had experienced loss and trauma, Horowitz (1976, 1986) developed a theoretical framework for PTSD and stress in general called the stress response theory. The stress response theory simply states that when an individual experiences loss and trauma there is a two part response. The initial response is one of outcry at the trauma followed by a second response where there is an attempt by the individual to integrate the new information associated with the trauma with prior knowledge. There is an information overload as the individual tries to assimilate the new views and images from the trauma with old, existing views. Tension develops and to avoid the memories of the trauma defense mechanisms are utilized. Trauma memories will enter into a conscious level through flashbacks, intrusions and nightmares when the opposing views of the trauma are not reconciled with the previous views held by the individual.

Another early theory regarding anxiety disorders related to PTSD is Mowrer's (1960) two-factor learning theory. Mowrer's theory involved classical and operant conditioning focusing on learned associations of the images, sights and sounds of a traumatic experience and avoidance behaviors. "According to this theory, when a person experiences a traumatic event (unconditioned stimulus), the subsequent feelings such as fear and anxiety are naturally occurring responses (unconditioned responses). Classical conditioning occurs when the sights, sounds, and other sensations experienced during the traumatic event become linked to the trauma in the mind of the victim" (Clair, 2006, p. 13). Classical conditioning accounts for the distress, but operant conditioning accounts for the avoidance of the stimulus. The memories and

sensations from the trauma serve as the stimulus which promotes fear and anxiety. As a result, the memories and sensations of the trauma are avoided to reduce the fear and anxiety further solidifying the linkage between the traumatic event, anxiety and fear.

Cognitive and information processing models (Lang, 1977, Foa, Steketee, & Rothbaum, 1989) suggest that the information from a traumatic event is encoded, stored and recalled differently than normal, everyday, events and if not processed appropriately will result in psychopathology. Primarily focusing on fear, proponents of this theory believe that when an event has monumental significance and violates previously held beliefs of safety there is a fear structure developed in memory. The fear structure holds the stimuli, such as the sensations from the event and the subsequent psychological and physiological responses to the event. The fear structure is easily activated resulting in the individual misinterpreting relatively harmless events as dangerous. As a result, the survival mode utilized during the traumatic event is used when it is unnecessary.

Foa and Riggs (1993) built upon the cognitive processing models in respect to the emotions experienced after a traumatic event. There are secondary emotions such as shame, anger, blame, and sadness that accompany the primary emotions surrounding the danger and sense of loss suffered after a traumatic event. The secondary emotions of shame, anger and blame are often constructed based on faulty interpretations of the event. The trauma is not fully processed until the over-generalization of the secondary emotions is challenged by the individual. Foa and Riggs (1993) add that individuals who are more likely to develop PTSD have rigid pre-trauma positive views about the safety of the world, and the degree of danger around them, and their level of competency for handling such dangers. The traumatic event

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contradicts their overall positive view of the world and supports their negative secondary emotions of incompetence and self-blame.

Lastly, Everly and Lating (2003) offer a neurological anatomical discussion regarding disorders of arousal based on the limbic hypersensitivity phenomenon. PTSD and other stress disorders, such as anxiety disorders, addictive disorders, hypertension, peptic ulcers, and irritable bowel syndrome are included in the classification of disorders of arousal which is characterized by increased or repetitive stimulation. Everly and Lating (2003) propose that PTSD specifically has two key features: neurological and psychological hypersensitivity. "This phenomenon is best thought of as a hypersensitivity for stimulation; a sort of neurological sensitization combined with a lowered activation threshold for emotional arousal" (Everly & Lating, 2003, p. 177-178). The limbic system plays a crucial role in the stress response. Structures located within the limbic system such as the amygdala, hippocampus, and hypothalamus, process incoming sensory data and produce a degree of emotional arousal. Everly and Lating (2003) provide a foundation for the explanatory power of the limbic hypersensitivity phenomenon through the works of Gellhorn (1965) and Weil (1974). Gellhorn used the term "ergotropic tuning" to describe a neurophysiological hypersensitivity of the autonomic nervous system as being the basis for emotional disorders (Everly & Lating, 2003). "Ergotropic tuning" is a pattern of response by the sympathetic nervous system to environmental stimuli that is acute and intense in nature, or to stimuli that occurs in short repeated intervals such as chronic stressors. Gellhorn believes that the sympathetic nervous system creates a neurological predisposition of hypersensitivity due to the exposure to the stimuli and that hypersensitivity is a key factor in the psychological and physiological symptoms seen in the disorders of arousal. Weil follows along the same theory as Gellhorn, however instead of using the sympathetic and parasympathetic nervous systems to

refer to the change in neurological patterns, Weil uses the terms of arousal and tranquilizing systems (Everly & Lating, 2003). The commonality between Weil and Gellhorn is that idea that high-intensity stimulation and/or repeated stimulation can be an underlying factor in changing or altering the arousal system.

<center>Prevalence of PTSD and risk factors among various populations</center>

Breslau et al. (1998) suggests that 90% of adults in the United States will be exposed to a traumatic event during their lifetime. The National Comorbidity Survey estimates that the lifetime prevalence rate of PTSD is 7.8% for citizens (Kessler et al., 1994). There is some variation in the percentages depending on gender and marital status. Robinson et al. (1997) measured the prevalence of PTSD to be 13% in a sample of suburban law enforcement officers. Beaton et al. (1996) found that within a group of urban firefighters with an 85% to 91% rate of exposure to a traumatic event, there was a prevalence of PTSD ranging from 15% to 31%.

The probability of developing PTSD varies not only with the type and severity of trauma experienced but also on gender, age, educational level at the time of the trauma, prior trauma, family history of psychopathology, and posttrauma social support (Flouri, 2005; Schnurr & Friedmann, 1997). A consistent finding among researchers is that the prevalence of PTSD is twice as high in women as it is in men (Halligan & Yehuda, 2000; Schnurr & Friedman, 1997). In addition, Halligan and Yehuda (2000) state that lower levels of education and being widowed or divorced are significant risk factors for developing PTSD.

<center>PTSD and Stress Symptoms in the Military</center>

PTSD gained notoriety in the 1980's through the veterans from Vietnam War. During the landmark National Vietnam Veterans Readjustment Study (NVVRS) several types of stressors were combined into one index of war zone stress. The stressors included combat, death

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and injury of others, threat of death to oneself, abusive violence, physical deprivation, and loss of

meaning and control (Fontana and Rosenheck, 1999). Although the NVVRS was conducted in

1983 well after the end of the Vietnam War in 1975, the study was designed to assist policy

makers in developing sound policies and programs to help the Vietnam War generation. At the

time of the study, NVVRS findings indicated that 15.2% of all male Vietnam theater veterans

had PTSD (Kulka et al., 1990). This represented about 479,000 of the estimated 3.14 million

men who served in the Vietnam theater (Kulka et al., 1990). The prevalence of lifetime PTSD

where veterans had the disorder some time during their lifetime was 30.6 % (Kulka et al., 1990).

The examination of the prevalence of PTSD in veterans from other wars, such as the Gulf

War, indicate a rate of 10.1% for those who experienced combat duty and 4.2 % who had not

been directly involved in combat (Kang et al., 2003). In a longitudinal study of the veterans

from the Gulf War, the prevalence of PTSD doubled between the initial assessment performed

immediately after the return from combat theater and an assessment performed two years later

(Wolfe et al., 1999). The rates increased from 3% to 8% among male veterans with higher rates

for the members of the National Guard (Wolfe et al., 1999).

Most studies involving World War II and Vietnam veterans have been conducted

retrospectively, sometimes decades after combat, making recall somewhat unreliable. For the

first time in military history, Walter Reed Army Institute of Research is presently involved in a

comprehensive study with veterans from Operation Enduring Freedom-Afghanistan (October 7,

2001, to the present) and Operation Iraqi Freedom (March 20, 2003, to the present) that examine

PTSD rates and other mental health issues before and after combat. The primary goal of the

research is to better inform policy makers regarding the optimal delivery of mental health care to

returning veterans (Hoge et al., 2004). The study examined members of four U.S. combat

infantry units, three from the U.S. Army and one Marine Corps unit. The three groups from the U.S. Army included 2,530 soldiers from an Army infantry brigade of the 82nd Airborne Division whose responses to the survey were obtained one week before a year-long deployment to Iraq; 1,962 from an Army infantry brigade of the 82nd Airborne Division whose responses were obtained after a six month deployment to Afghanistan; 894 soldiers from an Army infantry brigade of the 3rd Infantry Division whose responses to the survey were obtained after an eight month deployment to Iraq; and, 815 Marines who were members of the 1st Marine Expeditionary Force. The Marines participated in the study three to four months after their return from Iraq.

A self-report patient health questionnaire was given to screen for functional impairment at work or home. The questionnaire asked the participant if they were currently experiencing stress, emotional problems, alcohol abuse or family problems. If they felt they were having problems in any of these areas they were asked to rate the severity of the problem and if they were willing to receive help for these problems. In addition to the patient health questionnaire, all participants were administered the 17-item National Center for PTSD Checklist of the Department of Veterans Affairs.

Hoge et al. (2004) found support among all groups responding after deployment for a strong relationship between combat experiences such as being shot at, handling dead bodies, knowing someone who was killed, or killing enemy combatants, and the prevalence of PTSD. More than 90% of the respondents who were deployed to Iraq experienced at least one of the combat experiences mentioned above on several occasions. The prevalence of PTSD increased with the number of firefights experienced during deployment: 4.5% for no firefights, 9.3% for one to two firefights, 12.7% for three to five firefights, and 19.3% for more than five firefights. The percentage of the subjects in the study whose responses met the screening for major

depression, anxiety and PTSD was significantly higher after duty in Iraq versus Afghanistan. The rate for the Iraq veterans was 15.6% to 17.1% compared to 11.2% for veterans serving in Afghanistan. The difference in the responses is partly due to the difference in the exposure to combat in the regions.

As part of another longitudinal study by Milliken et al. (2007) of Operation Iraqi Freedom veterans, an initial screening using a Post-Deployment Health Assessment (PDHA), Department of Defense (DoD) Form DD2796, was given to 56,350 active duty soldiers and 31,885 members of the National Guard immediately following deployment. Three to six months later, a Post-Deployment Health Re-Assessment (PDHRA), DoD Form 2900, was given to the same population screening for PTSD, major depression, interpersonal conflict, alcohol misuse and other mental health problems. Both DoD forms are a part of the soldier's medical records and the results of the assessments are incorporated into the Defense Medical Surveillance System (DMSS) database. The DMSS is the source of data used in this study. The active duty soldiers and the National Guard members indicated more mental health distress on the re-assessment (PDHRA) than on the initial assessment (PDHA). Mental health concerns to include PTSD increased in the active military sample from 11.8% on the initial assessment to 16.7% on the re-assessment. National Guard member's mental health concerns on the initial assessment were 12.7% with an increase to 16.7% on the re-assessment. There was also a substantial increase in the area of interpersonal conflict for both components of the military. The active soldiers showed an increase from 3.5% to 14.0% in interpersonal conflict assessments while the National Guard members exhibited an increase from 4.2% to 21.1% between assessments. Milliken et al. (2007) suggests that the results of this study illustrate the need for re-screening soldiers several months after their return from combat duties. In addition, the Veterans Affairs facilities must be

ready to deliver care and services during this critical time frame. The increase in interpersonal conflict also gives attention to the need for family services during this period of adjustment.

A pilot study of 31 Army National Guard personnel who were deployed to Iraq showed significantly higher rates of PTSD symptoms than Hoge et al (2004) and Milliken (2007). The pilot study was a result of a convenience sample of Army National Guard soldiers who volunteered to complete a questionnaire and participate in an interview by psychologists during two drill training weekends in upstate New York. Ouimette et al. (2008) found through structured clinical interviews that 68% of the sample reported re-experiencing symptoms of PTSD while 93% reported hyper-arousal symptoms. The degree of PTSD severity was associated with a higher consumption of alcohol, illicit drug use, and overall poorer mental health functional status (Ouimette et al., 2008).

Along the same lines as the previously mentioned studies, researchers are beginning to examine deployment stressors associated with the National Guard/Reserves serving in combat and how the stressors impact the reintegration process. There are a few studies involving National Guard/Reservists who have served or who are currently serving in OIF. Most of the literature and research is based on the National Guard/Reserve veterans of Gulf War I. Previously mentioned studies by Wolfe et al. (1999) and Stretch et al. (1996) established a higher relationship between PTSD in National Guard/Reserve personnel from Gulf War I than their Active Duty counterparts. Another noteworthy study that included the National Guard/Reserves specifically in their study was the Iowa Persian Gulf Study (1997). The Iowa Persian Gulf Study found that National Guard/Reserves self-reported more symptoms of chronic fatigue, alcohol abuse, and decreased mental health status after their return from Gulf War I than their Active Duty counterparts. Lastly, in an effort to develop an inventory to measure psychosocial risk and

resiliency factors for military personnel deployed to war zones, King et al. (2006) constructed the Deployment Risk and Resilience Inventory (DRRI) using Gulf War veterans and data from Vietnam veterans. The DRRI has fourteen measures designed to assess deployment risk and resilience factors that may have implications for mental and physical health and overall general adjustment following deployments to war zones. The measures include two pre-deployment, ten deployment, and two post-deployment factors. The DRRI measures have been used in studies comparing the National Guard/Reserves and Active Duty veterans from Gulf War I. Vogt et al. (2008) using the DRRI in a Gulf War I population found no differences between the two populations in relationship the number of deployment stressors reported. They did find that the National Guard/Reserves had more concerns regarding family and relationship disruptions than the Active Duty veterans (Vogt et al., 2008).

One particular study explored the relationship between populations who had suffered an injury and the development of PTSD (Koren, Norman, Cohen, Berman & Klein 2005). This is an important relationship due to the fact that at this writing, 34,802 military personnel have been wounded in action in OIF and OEF (Defense, 2009). This group of researchers challenged the idea that bodily injury is a protective factor against the development of PTSD. "At the basis of this belief was the assumption that physical injury absorbs much of one's free-floating psychic energy, thus reducing the chance of developing anxious or conflicting feelings about the traumatic event" (Koren, Norman, Cohen, Berman, & Klein, 2005, p.276). Physical wounds are different than psychological wounds because there is more attention and sympathy offered to the veteran as a result of the physical wound. The study compared 60 injured soldiers with 40 soldiers who took part in the same combat situation but were not injured. The sample population was the same rank and had the same length of deployment and same military responsibilities.

The event-based, matched design utilized structured interviews and an extensive battery of self-reported questionnaires covering areas of PTSD, general psychopathology, level of dissociative experiences, and their history of trauma. The data from this research showed that ten of the 60 injured veterans met the diagnostic criteria for PTSD as compared to only one from the 40 uninjured comparison group. As a result of their research, a new hypothesis about the relationship of bodily injury and the development of PTSD was formed. "The most simple and straightforward hypothesis is that bodily injury increases the perceived threat to one's life or physical integrity during the trauma. Indeed, according to the literature, the perceived level of danger by trauma survivors is a better predictor for PTSD than the actual severity of the traumatic event" (Koren, Norman, Cohen, Berman, & Klein, 2005, p.280).

PTSD and Stress Symptoms in Law Enforcement

Due to the often repeated exposure to critical incidents, there is a significant likelihood that there will be a presence of PTSD and other mental health outcomes in the field of law enforcement much like to the military population. Mann and Neece (1990) report that 12%-35% of United States police officers suffer from PTSD. In Gersons (1989) study of 37 Amsterdam police officers involved in police shootings, 46% met the diagnostic criteria for PTSD. The most common PTSD symptom related by the police officers in the study was the recurrent and intrusive recollection of the event. Hyper-arousal was also reported by 94% of the officers (Gersons, 1989). Nineteen months after the 1992 Los Angeles civil disturbances, Harvey-Lintz and Tidwell (1997) found that 17% of the officers involved in the disturbances had PTSD symptoms. Martin et al. (1986) found that 26% of police officers who worked with victims of crimes reported symptoms that met the criteria for PTSD according to DSM-III (1980). The

most frequent symptom cited in the Martin et al. research that police officers reported was the hyper-alertness or exaggerated startle response.

As previously mentioned, PTSD is a result of one single traumatic event which is overwhelming and threatening in nature. In addition, the time frame for the diagnosis for PTSD is three to four weeks after the traumatic event. When emergency personnel are exposed to countless numbers of traumatic events over a period of time, and intermittently experience trauma-like symptoms similar to PTSD, Marshall (1999) refers to this as Cumulative Career Traumatic Stress (CCTS). The biggest difference proposed by Marshall (1999) between PTSD and CCTS, is that PTSD is a result of one event in contrast to CCTS where stress symptoms are a result of the combination of several traumatic events. The symptoms identified in the diagnostic criteria for PTSD present themselves sporadically in CCTS but not within the time frame for the PTSD diagnosis. The symptoms do not last for more than a few days, but may be re-experienced at a later time either alone or in conjunction with other symptoms. The triggering of the symptoms is based on past events that bring up old memories that are associated with the new events. Marshall (1999) posits the theory of CCTS in providing the explanation that most law enforcement officers will not develop PTSD, however they may suffer from some of the symptoms of PTSD. The symptoms will vary in intensities and occurrences throughout their career due to the continual exposure to traumatic and shocking experiences (Marshall, 1999).

<u>Cumulative Effects of Combat and Critical Incident Exposure</u>

The cumulative effect of the exposure to critical incidents has been the basis for numerous studies in law enforcement and is an integral part of this study. There are two contrasting views concerning this topic. One view proposes that since law enforcement officers frequently encounter traumatic events, they become familiar with the stimuli (traumatic event)

and over time become resistant to the psychological distress associated with the stimuli. The opposing view suggests that repeated exposure to traumatic events results in more posttraumatic stress symptoms (Violanti, 1996). The latter belief is more in line with the theories of learning.

Barker (2001) advises that the learning theory is geared toward two potential outcomes to a repetitive stimulus which is often dependent upon the intensity of the stimulus. Individuals either become more familiarized with the repeated stimulus which reduces their level of responsiveness, or they become more sensitive to the repeated stimulus and their level of responsiveness increases. Barker (2001) makes the distinction that if the repeated stimulus is high in intensity, the individual is more responsive. In contrast, repeated exposure to low to moderate stimuli results in a habituation outcome which results in a reduced response by the individual. This supports of the notion that police officers who are exposed to high intensity stimulus on a regular basis, are more likely to have an increased level of responsiveness to the stimuli.

Neylan et al. (2002) examined the sleep quality of 747 police officers from New York, New York, San Jose and Oakland, California police departments. After exploring their sleep habits and quality of sleep, it was determined through their research that the exposure to cumulative critical incidents was associated with nightmares. Overall stress from the daily hassles of the work environment was strongly associated with poor sleep quality. The nightmares experienced by the police officers were related to posttraumatic stress symptoms and general psychopathology.

In the Stephens and Miller (1998) study of New Zealand police officers it was found that an increase in the number of traumatic experiences by a police officer was associated with a higher number of PTSD symptoms. In addition, this study indicated that the PTSD symptoms

experienced by the officers were not related to the exposure of traumatic events prior to becoming a police officer, but directly related to events that occurred while employed as a police officer.

The literature to this point indicates that due to the repeated exposure to critical incidents, police officers are at risk for developing PTSD or other stress symptoms. There is a positive relationship between the number of critical incidents that the officer experiences and the intensity of the stress symptoms (Violanti, 2006; Stephens and Miller, 1998; Neylan et al., 2002).

Polusny et al. (2009) examined reported psychiatric and somatic symptoms of 522 National Guard soldiers before deployment in efforts to explore the cumulative effects of repeated deployments of Operation Enduring Freedom/Operation Iraqi Freedom veterans. Although most National Guard members participating in the study reported low levels of psychiatric symptoms, Polunsy et al. (2009) study found soldiers with prior Operation Enduring Freedom/Operation Iraqi Freedom deployments reported a greater number of PTSD, depressive and somatic symptoms than soldiers that had never been deployed. These findings are consistent with the Mental Health Advisory Team (MHAT-III) (2006) report citing active duty members with prior Operation Enduring Freedom/Operation Iraqi Freedom combat deployments had higher levels of PTSD stress symptomotology. Polunsy et al. (2009) and the MHAT-III (2006) findings are partially consistent with the conclusions of the Killgore et al. (2006) study of active duty members who reported elevated levels of somatic complaints but not PTSD or depressive symptoms among those with repeated deployments.

<u>Relationship between Anger, Stress, and PTSD</u>

Primarily grounded in military literature, research shows a positive link between anger and PTSD (Pitman, et al., 1987, Kulka et.al., 1990, Laufer et al., 1981). Several studies have

reported that Vietnam veterans diagnosed with PTSD had significantly higher levels of anger and greater difficulty in controlling their anger (Pitman, et al., 1987). Anger, overall, has been recorded as a significant symptom of post-war adjustment difficulties related with combat stress (Figley, 1978; Kardiner & Spiegel, 1947; McCaughey et al., 1985). Vietnam veterans provided the first real examination of this nexus, and subsequently, civilian populations empirically supported the relationship between PTSD and anger. Studies combining anger and hostility in military and civilian populations found strong associations between anger/hostility and trauma in both groups, with a larger effect in populations with military war experience than in other types of trauma (Orth & Wieland, 2003). Anger and hostility are two different constructs. Anger refers to an emotion with "cognitive physiological, motivational, and behavioral components," while hostility refers to an attitude with a "predisposition to dislike and mistrust of others, and to interpret others' behavior as egoistic and hurtful" (Orth & Wieland, 2003, p.4). Researchers typically combine the constructs of anger and hostility in studies because hostility increases the incidence of anger, and measures of hostility and anger have similar emotional content.

As previously mentioned, studies from the Vietnam veterans provide a foundation for the relationship between anger and PTSD. Combat veterans from Vietnam experienced more anger than individuals who were not exposed to combat during that time frame (Laufer et al., 1981). Figley and Eisenhart (1975) reported that Vietnam combat veterans experienced more verbal fights and violent dreams than non-combat veterans and had fewer close friends than non-combat veterans. Chemtob and Novaco (2002) offer an explanation regarding the linkage of anger, combat exposure, and PTSD, through the survival mode theory.

The survival mode theory explains anger in terms of the activation of survival systems and the cognitive processing of a threat which often occurs in a combat environment (Chemtob

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& Novaco, 2002). There are three areas that address the construct of anger which are integrated into the survival mode theory: cognition, arousal, and behavior. Cognition is the processing of information based on perception and environmental influences.   The perception of the environment and threats are based on the individual's expectations and/or scripts of past events, which ultimately determine the activation and duration of the anger response. An example of the cognitive influence on anger is inappropriately responding to a present day event by basing the reaction on an event that occurred in the past in a different setting or threat level. The second area, arousal, includes the physiologic response associated with anger. Anger impacts the cardiovascular, endocrine, and limbic systems. In addition, anger experienced over time can cause tension in muscle groups. Zillmann's (1971) idea of "excitation transfer" is relevant to the arousal component of anger. "Excitation transfer" is where there is a carry over of excitement or arousal from previous experiences that combine with arousal from a present event that result in an intensification of the anger response. The intensified response can lead to an increased perception or distortion of the threat along with raising the probability of aggression. The behavioral component consists of impulsive reactions, and verbal and physical aggression when threatened. All three components are inter-related with one another and the environment. Under normal circumstances, a threat is realistically perceived and the appropriate physiological response occurs to ensure survival with behavioral responses being coherent with the level of threat. When anger is a significant symptom of PTSD, there is a dysfunction between the three areas of the anger construct. "The engagement of anger in PTSD involves the hostile appraisal, heightened arousal, and antagonistic behavior as "survival mode" responding in contextually inappropriate conditions, whereby the person becomes dysregulated in reacting to the demands of the environment" (Novaco & Chemtob, 2002, p. 125).

In summary, the context-inappropriate response mentioned in the survival mode theory includes a hostile appraisal of events, a heightened sense of arousal, and an inability to self-regulate behavioral responses. As a result, veterans respond aggressively to threats in a civilian environment that do not possess any significant danger. Although this type of reaction may be useful in combat for survival, it is not useful in civilian life to continually operate in a hyperarousal state.

<center>Alcohol Consumption in Law Enforcement and Military</center>

There are varying research findings regarding the consumption of alcohol within the policing community. Some studies attribute alcohol use by police officers in general to be fueled by the power aspect of the police personality (Beehr, Johnson, & Nieva, 1995) while others link the relationship with alcohol use to the stress of being a police officer (Violanti, Marshall & Howe, 1985). There is also a social aspect of drinking in the police culture. It is commonplace for police officers to drink alcohol after working a shift as a method of bonding. Regardless of the different findings concerning the motivations of police officers and use alcohol, there is limited literature on whether or not police officers drink more than other occupations. Lindsay (2008) found no difference in the use of alcohol by officers from the State of Mississippi and the general public, however, the study did identify officers more at risk for alcohol abuse.

There is substantial literature regarding the use of alcohol and combat veterans. Specifically among the veterans of Vietnam, several studies reported significant relationships between combat exposure and binge drinking and alcohol dependency (Boscarino, 1981; Boman, 1986; Green et al., 1990). More recently, Jacobsen et al., (2008) found that National Guard/Reserve personnel and younger active military members who were exposed to combat

during OEF/OIF are at an increased risk for alcohol-related problems to include binge drinking and new-onset heavy weekly drinking.

<center>Resilience Factors: Social Support</center>

There is a significant amount of research regarding the relationship between the role of social support and the overall psychological well-being of individuals who suffer from acute and chronic stress. The majority of the studies report a positive correlation between support and well-being. Social support is useful in different stages of the stress reaction. By having a solid support system in place, the perception that others can provide resources during a stressful time can bolster one's ability to initially appraise the situation realistically and assist in the process of problem-solving.

However, Cohen and Wills (1985) caution that although several studies report the positive correlation between support and well-being, this correlation can happen through two different processes or models: the buffering model and the main-effect model. Cohen and Wills (1985) also make a distinction on how social support is measured in various studies. Structural measures of social support describe the existence of relationships or social networks quantitatively, while functional measures are the quality of support systems that are directly utilized during the stress process.

The buffering model is a process where social support acts as a "buffer" or protective factor to an individual who is under stress. The "buffer" or social support assists in the prevention of the development of pathogenic symptoms that are associated with distress through strengthening self-esteem and informational support. When one is under a great deal of stress, there are often feelings of helplessness and a threat to self-esteem when evaluating the event. Social support can help in re-appraising the situation by suggesting appropriate coping

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mechanisms which counterbalances the perceived lack of control. "Evidence for a buffering model is found when the social support measure assesses interpersonal resources that are responsive to the needs elicited by stressful events" (Cohen and Wills, 1985, p. 347). Thus, social support moderates the effects of stress when the interpersonal resources are the same as the needs that have developed as a result of the stressful event.

The main-effect model proposes that social resources have a beneficial effect regardless of whether or not a person is under stress. Being a member of a social network such as a church or various social clubs provides a sense of predictability, and socially rewarding roles within the community. This social "embeddedness" acts as a prophylactic measure in the appraisal of stressful events and the overall well-being of an individual. "Evidence for a main-effect model is found when the support measure assesses a person's degree of integration in a large community social network" (Cohen and Wills, 1985, p. 347).

In their review of the literature on social support and the development of PTSD, Brewin, Andrews and Valentine (2000) examined the risk factors relating to the predictive value of developing PTSD in seventy-seven studies and found that the lack of social support was the strongest predictor in the development of PTSD. Among studies of diverse trauma populations, social support was an important factor in the development and maintenance of PTSD along with the severity of PTSD symptoms (Andrews, Brewin, & Rose, 2003; Andrykowsky & Cordova, 1998; Barrett & Mizes, 1988; Beiser, Turner & Ganesan, 1989; Cook & Bickman, 1990; Jankowski et al., 2004; Kimerling & Calhoun, 1994; Schnurr, Lunney & Sengupta, 2004 and Solomon, Waysman & Mikulincer, 1990).

Linking social support as a variable to the development or maintenance of PTSD can be explained by two etiological models. Joseph and Williams (1999) propose a model where social

support is an environmental variable that has an impact on PTSD by influencing the individual's interpretation of the event. "In this model, the search for support in the environment is defined as an active stress management strategy, whereas the support received from, or perceived to be received from, significant others is a factor that may lower or exacerbate stress levels" (Guay, Billette, & Marchand, 2006, p.330).

Often the victim's interpretation of the event or appraisal, event cognitions, is locked into their memory and is the foundation for re-experiencing the event. Event cognitions can be images or sounds that remind the individual of the traumatic event. Social support from friends or family can offer an alternative point of view regarding the interpretation of the event, or the re-experiencing of the event, which can have an impact on PTSD symptoms and the victim's emotional state. "For example, if a victim perceives that he or she reacted inappropriately during the traumatic event, and if the significant other informs the victim that he or she would have acted in the same way under these circumstances, the victim may begin to view his or her own actions as being more appropriate" (Guay, Billette, & Marchand, 2006, p. 330). In support of this model, one study examined the relationship between appraisal mechanisms after a traumatic event and seeking out social support. The more the victims felt their actions were inadequate during the traumatic event, or that they should have done more, the less likely they were to reach out to friends or family for support causing increase levels of distress (Brewin, MacCarthy, & Furnham, 1989). Schnurr et al. (2000) stated that being forbidden to discuss details of trauma, such as World War I soldier's exposure to mustard gas, increased the likelihood of the development of PTSD. "In short, the less a victim confides in significant others, or the more he or she is compelled not to do so, the less he or she assimilates the traumatic event, and the more he or she is at risk of the development of PTSD" (Guay, Billette, & Marchand, 2006, p. 331).

The Stephens, Long & Miller (1997) study of 527 New Zealand police officers found that the police officers who were able to express their emotions at work with peers and supervisors were less likely to develop PTSD symptoms after exposure to several critical incidents. This further suggests that a socially supportive environment where there is encouragement to discuss traumatic events will positively influence the emotional recovery of an individual.

Lepore (2001) developed a social-cognitive processing model in explaining the development of PTSD symptoms as a result of examining the role of social interactions on the emotional adjustment in cancer patients. Based on the assumption that a life-threatening illness can produce posttraumatic stress reactions, Lepore (2001) suggests that social and contextual variables play an important role on the cognitive processing of such an event. After learning of a cancer diagnosis, individuals usually share their experience with others within their social support system. The reactions from others have a significant impact on their cognitive processing of the diagnosis. "Supportive, receptive, and non-critical responses would be helpful, whereas unsupportive, unreceptive, and critical responses would have a negative impact on the emotional adjustment of people after traumatic events and thus increase their level of psychological distress" (Guay, Billette, & Marchand, 2006, p. 330). If the reactions from the social support system are negative, the victim may refrain from further disclosure or feelings and thoughts about the event hindering the cognitive process. In support of this model, Ullman and Filipas (2001) found that negative social reactions received from sexual assault victims was strongly related to the severity of PTSD symptoms. "Being treated differently or receiving stigmatizing responses such as being blamed, avoided, and given destructive advice from others significantly predicted higher PTSD symptom severity" (Guay, Billette, & Marchand, 2006, p. 331).

Both models proposed by Lepore (2001) and Williams and Joseph (1999) imply that the interaction between victims and social support systems can be helpful or act in a way that induces or maintains stress symptoms. There are other factors related to the social support process. It is important to keep in mind that social support is a dynamic variable and is often changing depending upon the stressor, whether it is chronic or acute, and the individual's personality. Generally speaking, the quality of support, not the number of social support networks, is attributed to having the strongest effects related to emotional support.

Summary

In conclusion, a significant number of National Guard/Reserves Units are being deployed for long periods of time in support of Operation Iraqi Freedom and Operation Enduring Freedom/Afghanistan. This cohort of part time soldiers has been exposed to relatively the same war experiences as the active military component with multiple deployments. Within this cohort, there are a substantial number of public safety officers who are police officers in their civilian life. The transition process from military duties to urban policing duties is important since they make potentially life and death decisions as part of their employment. To guide policy makers in designing and implementing reintegration strategies, an examination of deployment risk and resiliency factors is needed. By identifying these factors, we can better assist the police officer in the reintegration process upon their return from military duty by designing transition policies that take into account meaningful factors.

There is a significant amount of research concerning combat stress as it relates to war experiences and mental health outcomes. Since the 1980's there has been a flood of research addressing combat stress and Vietnam veterans. Researchers are now interested in the new cohort of war veterans from Operation Iraqi Freedom and Operation Enduring

Freedom/Afghanistan and exploring how war will impact this generation of soldiers. In addition, current studies are recognizing the differences in the mental health outcomes and the sources of stress in the active military component and the National Guard/Reserves. There is very little research addressing the reintegration of reservist police officers experience critical incidents before and after military deployments.

The present study attempts to bridge gaps in the literature and provide measures to more precisely connect deployment risk and resiliency factors with mental and overall general health outcomes. This study takes into account the aspect of critical incidents and how they relate to the overall re-adjustment of the police officer who has been deployed into a war zone. Although this study will not examine all of the factors related to military deployment, it seeks to add to the body of literature on overall police stress and the deployment risk and protective factors that impact general functioning after serving military deployments.

Chapter 3

Methodology

<u>Purpose of Study</u>

The purpose of this study is to assess specific deployment risk and resiliency factors that predict the overall adjustment of police officers returning from military duties in Operation Iraqi Freedom and Operation Enduring Freedom/Afghanistan. Examining the overall post-deployment outcomes with deployment risk and protective factors that contribute to their well-being will provide useful information in isolating issues that are the greatest burden or the most useful in the reintegration process. It is important to explore the overall health outcomes of this population of police officers since they have endured both police and combat stress. Deployment risk and resilience factors used in previous studies to examine veterans of the Gulf War I and Operation Iraqi Freedom may have a different outcome for this population which has endured the cumulative stressors of police work and combat.

The goal of the proposed project includes assessing the overall adjustment of police officers who have served in Operation Iraqi Freedom/Operation Enduring Freedom as related to specific deployment and resilience factors in order to better understand the elements that may contribute to designing reintegration strategies for this population. Overall adjustment is measured by scales that assess the level of aggression, anxiety, alcohol use, and depression/PTSD.

Hypotheses:

The study addresses the following hypotheses:

<u>Policing Critical Incidents and Combat Experiences</u>

1. Police officers who report higher rates of exposure to critical incidents are more likely to have post-deployment adjustment issues.

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1a.   Police officers who report higher rates of exposure to critical incidents are more likely to have higher rates of anxiety.
1b.   Police officers who report higher rates of exposure to critical incidents are more likely to have higher rates of aggression.
1c.   Police officers who report higher rates of exposure to critical incidents are more likely to use alcohol at higher rates.
1d.   Police officers who report higher rates of exposure to critical incidents are more likely to have higher rates symptoms of PTSD/depression.

2.   Police officers who report a higher level of perceived threat during deployment are more likely to have post-deployment adjustment issues.
2a.   Police officers who report a higher level of perceived threat during deployment are more likely to have higher rates of anxiety.
2b.   Police officers who report a higher level of perceived threat during deployment are more likely to have higher rates of aggression.
2c.   Police officers who report a higher level of perceived threat during deployment are more likely to use alcohol at higher rates.
2d.   Police officers who report a higher level of perceived threat during deployment are more likely to have higher rates symptoms of PTSD/depression.

3.   Police officers who report a higher rate of combat experiences are more likely to have post-deployment adjustment issues.
3a.   Police officers who report a higher level of combat experiences are more likely to have higher rates of anxiety.
3b.   Police officers who report a higher level of combat experiences are more likely to have higher rates of aggression.
3c.   Police officers who report a higher level of combat experiences are more likely to use alcohol at higher rates.
3d.   Police officers who report a higher level of combat experiences are more likely to have higher rates symptoms of PTSD/depression.

4.   Police officers who report a higher rate of exposure to post-battle experiences are more likely to have post-deployment adjustment issues.
4a.   Police officers who report a higher level of exposure to post-battle experiences are more likely to have higher rates of anxiety.
4b.   Police officers who report a higher level of exposure to post-battle experiences are more likely to have higher rates of aggression.
4c.   Police officers who report a higher level of exposure to post-battle experiences are more likely to use alcohol at higher rates.
4d.   Police officers who report a higher level of exposure to post-battle experiences are more likely to have higher rates symptoms of PTSD/depression.

<div align="center">Life Events</div>

5.   Police officers who report greater exposure to traumatic life events outside of law enforcement prior to deployment are more likely to have post-deployment adjustment issues.

5a.   Police officers who report greater exposure to traumatic life events outside of law enforcement prior to deployment are more likely to have higher rates of anxiety.

5b.   Police officers who report greater exposure to traumatic life events outside of law enforcement prior to deployment are more likely to have higher rates of aggression.

5c.   Police officers who report greater exposure to traumatic life events outside of law enforcement prior to deployment are more likely to use alcohol at higher rates.

5d.   Police officers who report greater exposure to traumatic life events outside of law enforcement prior to deployment are more likely to have higher rates symptoms of PTSD/depression.

6.   Police officers who report experiencing a higher number of post-deployment stressors are more likely to have post-deployment adjustment issues.

6a.   Police officers who report experiencing a higher number of post-deployment stressors are more likely to have higher rates of anxiety.

6b.   Police officers who report experiencing a higher number of post-deployment stressors are more likely to have higher rates of aggression.

6c.   Police officers who report experiencing a higher number of post-deployment stressors are more likely to use alcohol at higher rates.

6d.   Police officers who report experiencing a higher number of post-deployment stressors are more likely to have higher rates symptoms of PTSD/depression.

<div align="center">Deployment Preparedness</div>

7.   Police officers who report a higher rate of deployment preparedness are less likely to have post-deployment adjustment issues.

7a.   Police officers who report a higher rate of deployment preparedness are less likely to have higher rates of anxiety.

7b.   Police officers who report a higher rate of deployment preparedness are less likely to have higher rates of aggression.

7c.   Police officers who report a higher rate of deployment preparedness are less likely to use alcohol at higher rates.

7d.   Police officers who report a higher rate of deployment preparedness are less likely to have higher rates symptoms of PTSD/depression.

<div align="center">Life and Family Concerns</div>

8.   Police officers who report a higher rate of concerns about life and family disruptions due to military deployment are more likely to have post-deployment adjustment issues.

8a.   Police officers who report a higher rate of concerns about life and family disruptions due to military deployment are more likely to have higher rates of anxiety.
8b.   Police officers who report a higher rate of concerns about life and family disruptions due to military deployment are more likely to have higher rates of aggression.
8c.   Police officers who report a higher rate of concerns about life and family disruptions due to military deployment are more likely to use alcohol at higher rates.
8d.   Police officers who report a higher rate of concerns about life and family disruptions due to military deployment are more likely to have higher rates symptoms of PTSD/depression.

Social Support

9.   Police officers who report a higher rate of military unit social support while deployed are less likely to have post-deployment adjustment issues.
9a.   Police officers who report a higher rate of military unit social support while deployed are less likely to have higher rates of anxiety.
9b.   Police officers who report a higher rate of military unit social support while deployed are less likely to have higher rates of aggression.
9c.   Police officers who report a higher rate of military unit social support while deployed are less likely to use alcohol at higher rates.
9d.   Police officers who report a higher rate of military unit social support while deployed are less likely to have higher rates symptoms of PTSD/depression.

10.   Police officers who report a higher rate of post-deployment social support are less likely to have post-deployment adjustment issues.
10a.   Police officers who report a higher rate of post-deployment social support are less likely to have higher rates of anxiety.
10b.   Police officers who report a higher rate of post-deployment social support are less likely to have higher rates of aggression.
10c.   Police officers who report a higher rate of post-deployment social support are less likely to use alcohol at higher rates.
10d.   Police officers who report a higher rate of post-deployment social support are less likely to have higher rates symptoms of PTSD/depression.

Mental Health Assistance

11.   Police officers who report greater reluctance to seek out mental health counseling or services post-deployment are more likely to have post-deployment adjustment issues.
11a.   Police officers who report greater reluctance to seek out mental health counseling or services post-deployment are more likely to have higher rates of anxiety.

11b. Police officers who report greater reluctance to seek out mental health counseling or services post-deployment are more likely to have higher rates of aggression.

11c. Police officers who report greater reluctance to seek out mental health counseling or services post-deployment are more likely to use alcohol at higher rates.

11d. Police officers who report greater reluctance to seek out mental health counseling or services post-deployment are more likely to have higher rates symptoms of PTSD/depression.

Due to limited information available in the literature on post-deployment functioning for police officers who serve in the military through the National Guard/Reserves, this is an exploratory study and employs a non-experimental cross-sectional survey design using a convenience sample.

Sample Selection and Characteristics

The study sample consists of forty-four law enforcement officers from fifteen Mid-Atlantic police departments including the Virginia State Police. The law enforcement officers in this study were veterans of Operation Iraqi Freedom and/or Operation Enduring Freedom/Afghanistan. The police officers were deployed through their military commitment with the National Guard/Reserves while serving as local police officers in their community and have returned to law enforcement. A total of fifty-one police officers were approached with forty-four agreeing to participate; this resulted in an 86 percent response rate. The police departments participating in this study along with the number of officers from each department are described in Table1.

Police chiefs or administrative staff from the participating police departments was given a brief presentation concerning the research project before giving their consent for veteran police officers from their departments to participate in the study. After obtaining a list from each

Table 1: Participating Virginia police departments and number of personnel in study

Name of Police Department	Number of veteran police officers surveyed	Number of veteran police officers participating (N)
Chesapeake Police Department	1	0
Chesterfield Police Department	1	1
Clarke County Police Department	1	1
Franklin Police Department	1	1
Frederick County Police Department	1	1
Hampton Police Division	6	6
Henrico County Police Department	5	5
James City County Police Department	2	1
Newport News Police Department	11	9
Norfolk Police Department	5	5
Portsmouth Police Department	4	4
Shenandoah Police Department	1	1
Suffolk Police Department	4	1
Virginia Beach Police Department	7	7
Virginia State Police	1	1
Total:	**51**	**44**

department of the police officers who served in Operation Iraqi Freedom and/or Operation Enduring Freedom, their duty assignments were identified enabling the researcher to contact the officers. The sample characteristics collected from the participants using the self-report questionnaire are reported in Table 2. It should be noted that a number of participating police chiefs and administrative staff members had certain conditions regarding the research that were addressed before gaining access to their department members making this sample a challenge to obtain by the researcher.

Those completing the survey consist of forty-two male officers (95.5%) and two female officers (4.5%) with an average age of thirty-nine with a range of twenty-six years of age to fifty-seven years of age. Thirty-six of the officers were white (81.8%) while eight (18.2%) were non-white. A total of thirty officers (68.2%) reported being married while nine officers (20.5%) were divorced at the time of the study. The sample has an average of almost thirteen years in law enforcement with a range in the sample from one year to twenty-eight years of service.

In addition to the basic demographic information, the total number of military deployments in support of Operation Iraqi Freedom and/or Operation Enduring Freedom/Afghanistan was completed by the police officers. Forty-one of the respondents reported between one and five deployments in the last nine years (93.2%) while two respondents reported between six and ten deployments in the last nine years (4.5%). Twenty of the police officers (48.8%) served in one deployment in support of Operation Iraqi Freedom (48.8%) while three (7.3%) served one deployment in support of Operation Enduring Freedom/Afghanistan (7.3%). A total of eighteen respondents (43.9%) engaged in multiple deployments over the last nine years. Of the eighteen respondents who served multiple deployments, seven served in both Operation Iraqi Freedom and Operation Enduring Freedom/Afghanistan one time (17%), six

served at least twice in Operation Iraqi Freedom (14.6%), three served two times in Operation Iraqi Freedom and once in Operation Enduring Freedom (7.3%) and two served in both conflicts at least on two occasions (4.9%). The range of the deployments lasted one month to twenty months.

Lastly, the date the police officers departed the combat zone from their last deployment was asked to determine the amount of time the officer has been home and part of their community.   The officer arriving most recently from military service had been home for one month when the data was collected while the officer home the longest was seven years. The average number of the months the officers had been home was two and one-half years.

<div align="center">Data Collection</div>

The primary source of data used to examine the research hypotheses was a self-report questionnaire. Basic information such as gender, marital status, ethnicity, age, and years of service in law enforcement were included in the demographic section of the questionnaire as reflected in Table 2.   Data concerning the issues of overall adjustment of post-deployment functioning (dependent variables) along with the deployment risk and resilience factors (independent variables) were collected through the self-report questionnaire.

The surveys were administered in individual meetings with the police officers at their place of employment. The personal contact by the researcher provided an opportunity to explain the goal of the research project and to obtain consent from the police officers participating in the study.   Following consent, the questionnaire was administered in a quiet area of the police department where the respondent and researcher would be undisturbed. The researcher was quiet but available during the time the respondent completed the questionnaire in the event the respondent had any questions or concerns. If the respondent requested to finish the questionnaire

at a later date, they were given a self-addressed envelope enabling them to return the questionnaire to the researcher. Twelve of the respondents sent their questionnaire into the researcher at a later date by mail or left their questionnaire in a sealed envelope for the researcher to pick up at the police precinct.

Table 2: Demographic variables of police officer participants

Variable	N	%
Gender		
Male	42	95.5
Female	2	4.5
Age		
30 and under	10	22.7
31-40	16	36.3
41-50	15	34.0
51-60	3	6.8
Mean	38.80	
SD	7.787	
Race/Ethnicity		
White	36	81.8
Non-White	8	18.2
Marital status		
Never married	4	9.1
Married	30	68.2
Separated	1	2.3
Divorced	9	20.5
Number of years in law enforcement		
1-10 years	16	36.4
11-20 years	22	50.0
Over 21 years	6	13.6
Mean	12.95	
SD	6.908	
Total Number of deployments in the past 9 years		
1-5 deployments	41	93.2
6-10 deployments	2	4.5
Deployment Operation		
One deployment: OIF	20	48.8
One deployment: OEF	3	7.3
One deployment in OIF and OEF	7	17.0
Two deployments: OIF	6	14.6
Two OIF and one OEF deployments	3	7.3
Two OIF and two OEF deployments	2	4.9

Months since return from military deployment

1-12 months	14	31.8
13-48 months	17	38.6
49-72 months	5	11.4
Over 73 months	4	9.1
Missing data	4	9.1
Mean	30.15	
SD	24.603	

<u>Measurement</u>

There has been limited research on the combination of police and combat stress for veteran police officers who have served in Operation Iraqi Freedom and or Operation Enduring Freedom/Afghanistan and their mental, physical, and overall general health as they return to their urban policing duties. Consequently, scales which were designed to measure various aspects of police stress as well as combat stress were used. This study combines the Deployment Risk and Resilience Inventory (DRRI) (King et al., 2006), the Critical Incident History Questionnaire (CIHQ) (Weiss et al., 2001), specific to police stress in efforts to assess the cumulative nature of combat and police stress as it relates to overall adjustment issues while taking into account the mitigating factor of social support.

The DRRI is used to assess deployment related factors that impact the health and well-being of veterans. Originally designed and tested on veterans from Gulf War I with strong internal consistency reliability results, the scales from the DRRI have recently been tested with OIF veterans with similar internal consistency scores. Using nine of the of the fourteen DRRI scales in the OIF study, seven of the deployment related factors had an internal consistency reliability of .80 or higher while two fell just below .80 (Vogt et al., 2008). The fourteen scales within the DRRI include two pre-deployment factors (prior stressors and childhood family environment), ten aspects of deployment (combat experiences; perceived threat; aftermath of battle; difficult living and working environment; sense of preparedness; nuclear, biological, and chemical exposures; concerns about life and family disruptions; deployment social support; sexual harassment; and general harassment, and two post-deployment factors (post-deployment social support and post-deployment stressors). The DRRI is designed so that each of the

fourteen measures can be used individually or in conjunction depending on the goal of the research.

In this study, nine DRRI measures were used; pre-deployment life events, training and deployment preparation, life and family concerns, unit social support, deployment concerns/perceived threats, combat experiences, post-battle experiences, post-deployment social support, and post-deployment life events. The DRRI measures selected for this study captures several dimensions of combat particularly relevant to this cohort of military veterans consisting of National Guard/Reserves and women. For example, one of the DRRI scales selected for this study addresses life and family concerns. The National Guard/Reserves Units are populated with older soldiers that have families and stable careers. Leaving a career and family may have different stress outcomes for a National Guard/Reserve soldier than active members of the military. The DRRI scales offer a multi-dimensional approach in exploring deployment experiences that may be a protective post-deployment factor or place the veteran at risk for post-deployment stress outcomes.

Independent Variables

The current study measures deployment risk and resiliency factors using nine constructs from the DRRI that fall into three general categories: pre-deployment/pre-war factors, deployment/war-zone factors, and post-deployment/postwar factors as reflected in Table 3. The pre-deployment/pre-war construct includes prior traumatic life stressors outside of police work. Deployment and war-zone constructs consist of deployment preparedness, concerns about life and family disruptions, deployment social support, perceived threat/deployment concerns, combat experiences, and aftermath of battle experiences. The post-deployment and postwar constructs measure post-deployment social support and post-deployment stressors. Another key

construct used in this study is a measurement that captures the degree of exposure to critical incidents that officers have experienced while employed as police officers. An additional measurement that examines the perceived barriers in seeking out mental health assistance or services is used to determine how that impacts the officer's overall mental and physical outcome post-deployment.

Pre-deployment life events. This construct measures exposure to traumatic life events outside of police work prior to military deployment. Traumatic life events include experiencing a natural disaster, a divorce, a physical assault, sexual abuse, or other extremely stressful event. The scale consists of fifteen questions with a dichotomous response format of "no" or "yes" identifying prior stressors that may impact their deployment experiences along with post-deployment functioning. Cronbach's alpha analyses is .77 using OIF veterans and .75 for a sample of Gulf War I veterans for this factor.

Training and deployment preparedness: Preparedness is a construct that fits within the deployment/war-zone factors measuring the degree to which the respondent felt prepared for the deployment. This construct addresses whether or not the respondent felt he or she had the proper equipment and supplies needed as well as adequate training to perform necessary procedures and tasks. Sample items in this construct include: I received adequate training on how to use my equipment; I was accurately informed about what to expect from the enemy; and, I was adequately trained to work the shifts required of me during my deployment. There are a total of fourteen items in this construct with a 5-point Likert scale response format (*1=strongly disagree, 5=strongly agree*). Cronbach's alpha is .88 using OIF veterans and .87 for a sample of Gulf War I veterans for this factor.

Life and family concerns.   The life and family concerns construct addresses the overall worries that military deployment may negatively impact other areas of their life such as family and career.   This construct is especially applicable to the members of the National Guard/Reserves who serve in a part-time capacity with the military.   Sample items in this construct include: While I was deployed, I was concerned about damaging my career because I was overseas for a long time; While I was deployed, I was concerned about harming my relationship with my spouse/significant other; and, While I was deployed, I was concerned about missing out on my children's growth and development.   There are a total fourteen items in this construct with a 4-point Likert scale response format (*1=not at all, 4=a great deal*) with an additional option of 0 if the item was not applicable.   Cronbach's alpha is .84 using OIF veterans and .89 for a sample of Gulf War I veterans for this factor.

Unit social support.   Measuring the overall social support from military leadership and other unit members characterizes this construct.   The level of support and encouragement in the war zone during deployment is addressed with sample items such as: My unit was like family to me; The military appreciated my service; and, Members of my unit understood me.   There are a total twelve items in this construct with a 5-point Likert scale response format (*1=strongly disagree, 5=strongly agree*).   Cronbach's alpha is .91 for this factor.

Deployment concerns/perceived threat.   This construct addresses the respondent's fear of safety and well-being while deployed in the war-zone.   The degree to which the respondent felt they were in great danger of being killed or wounded is one aspect of this construct.   Sample items include: I thought I would never survive; I worried about the possibility of accidents (for example, friendly fire or training injuries); and, I was afraid I would encounter a mine or booby trap. The level of threat felt by the respondent is a result of their perception of their environment

and war experiences which may involve emotions and cognitive distortions of factual reality. There are a total of fifteen items in this construct with a 5-point Likert scale response format (*1=strongly disagree, 5=strongly agree*). Cronbach's alpha is .84 using OIF veterans and .89 for a sample of Gulf War I veterans for this factor.

  Combat experiences. This war-zone construst involves the level of exposure to conventional warfare experiences such as firing a weapon, being fired upon, and witnessing death or serious injury. Sample items in this construct include: While I was deployed I went on combat patrols or missions; While I was deployed I or members of my unit were attacked by terrorists or civilians; and, While I was deployed my unit engaged in battle in which members suffered casualties. This measure does not require personal interpretation since all of the items are objective events and circumstances. There are a total of fifteen items in this construct with a dichotomous response format of "yes" or "no" on whether or not the respondent was exposed to the combat experience. Cronbach's alpha is .85 for samples of OIF veterans and Gulf War I veterans for this factor.

  Post-battle experiences. The post-battle experiences construct is an extension of the combat experience construct in the sense of what the respondent's level of exposure was to death and destruction as a result of combat. Combat consequences such as handling human remains, observing soldiers who had been severely wounded or disfigured, along with the sight, sound, and smells of dying men and women characterize this construct. There are a total of fifteen items in this construct with a dichotomous response format of "yes" or "no" on whether or not the respondent was exposed to the combat experience. Cronbach's alpha is .86 using OIF veterans and .89 for a sample of Gulf War I veterans for this factor.

Post-deployment social support. This post-deployment factor measures the extent to which the respondent obtained emotional sustenance and instrumental assistance from family, co-workers, friends, and the community upon their return from deployment. Emotional sustenance refers to emotional needs such as understanding, companionship, and a sense of belonging provided by others. Instrumental assistance relates to tangible aid where the respondent obtained help in accomplishing tasks and or material resources. Sample items in this construct include: The reception I received when I returned from my deployment made me feel appreciated for my efforts; I am carefully listened to and understood by family members; and, There are people to whom I can talk about my deployment experiences. There are a total of fifteen items in this construct with a 5-point Likert scale response format (*1=strongly disagree, 5=strongly agree*). Cronbach's alpha is .88 using OIF veterans and .87 for a sample of Gulf War I veterans for this factor.

Post-deployment life events. This construct addresses exposure to stressful life events that take place post-deployment. The stressful life events can be related to the reintegration process such as difficulties with family readjustment, or unrelated to the deployment such as being involved in a car accident or physically assaulted. Sample items in this construct include: Since returning home, I have experienced a serious operation; Since returning home, I have experienced the death of someone close to me; and, Since returning home, I have gone through a divorce or been left by a partner or significant other. There are a total of seventeen items in this construct with a dichotomous response format of "yes" or "no" on whether or not the respondent experienced the stressful event since their return from deployment. Cronbach's alpha is .55 using OIF veterans and .72 for a sample of Gulf War I veterans for this factor. Vogt et al. (2008) cites the OIF veteran population used in the validation of the DRRI scales had just recently

returned from deployment. Due to their recent return, many of the veterans may not have experienced the stressors mentioned in the post-deployment stressors scale contributing to the lower internal consistency reliability.

Critical incident history. The Critical Incident History Questionnaire (CIHQ)(Weiss et al. 2001) will be used to determine the respondent's level of exposure to critical incidents while working as a police officer. Respondents will be asked to estimate the number of times they have personally been involved in certain critical incidents while in the line of duty. Critical incidents used in this construct include being seriously injured intentionally or accidentally in the line of duty, being present when a fellow officer was killed intentionally or accidentally in the line of duty, and being seriously beaten in the line of duty. There are thirty-four sample items in this construct where the respondent will estimate the number of times the incident has happened to them while on duty. The respondent will also be asked to give their opinion on how difficult it would be for police officers to cope with a particular critical incident using a 5-point Likert scale response format (*1=not at all, 5=extremely*). The coping part of the measure will not be included in the analyses of this study.

Table 3: Deployment Risk and Resiliency Inventory scales used in study

_____

Category	Scale
Pre-deployment	Pre-deployment life events
Deployment	Training and deployment preparedness
	Life and family concerns
	Unit social support
	Deployment concerns – perceived threats
	Combat experiences
	Post-battle experiences
Post-deployment	Post-deployment social support
	Post-deployment life events

Stigma. A scale was adapted from Hoge et al.'s study (2004) where researchers addressed the perceived barriers of military personnel in seeking out mental health assistance or services. Hoge et. al. (2004) found that the concern about stigma was disproportionately higher among those who scored positive for mental disorders. The construct of stigma was included in this study since police officers share the same unique factors as military personnel in viewing the of seeking out of mental assistance as a sign of weakness. The sample 10-item instrument captures ten perceived barriers used by Hoge et al. (2004). The questions are rated using a 5-point Likert scale response format (*1=strongly disagree, 5=strongly agree*) in how the respondent feels the concerns or barriers might affect their decision to receive or seek out mental health services. In addition, the respondents were asked to rate from 1-5, one being most likely to five being least likely, as to who they would go to in seeking out mental health counseling or services if they felt they had a problem. The choices used in this study included: Police Department Employee Assistance Program/Peer Support, Police Department Psychologist/Social Worker, Police Department Chaplain, Private Psychologist/Social Worker, or Personal Clergy. There is no Cronbach's alpha for this measure.

<u>Dependent Variables</u>

The dependent variables in this study capture the overall adjustment outcomes of police officers who have been exposed to both police and combat stress. Specifically, adjustment outcomes are measured through instruments that focus on depression, anxiety, aggression, and posttraumatic stress symptoms. There is a brief section that addresses alcohol usage since excessive consumption can have a significant impact on the mental and overall well-being of an individual in a post-deployment setting.

Post-traumatic stress symptoms. Posttraumatic stress symptomatology is measured using the 17-item PTSD Checklist (Weathers, Litz, Herman, Huska, & Keane, 1993) adapted from the *Diagnostic and Statistical Manual of Mental Disorders IV* (American Psychiatric Association, 1994). The checklist includes evaluating PTSD's symptom categories, Criteria B (re-experiencing and intrusive thoughts and memories), Criteria C (active avoidance and emotional numbing) and Criteria D (hyperarousal). Respondents are asked about being bothered by certain problems associated with the PTSD's diagnostic Criteria symptoms that are contained within the instrument over the past month. The items are rated using a 5-point Likert scale response format (*1=not at all, 5=extremely*). The 17-item PTSD checklist is frequently used in research to assess post-traumatic stress symptomatology and has demonstrated coefficient alphas greater than .95.

Alcohol use. Harmful patterns of alcohol consumption are measured using five questions adopted from the Department of Defense (DoD) Form 2900, the Post-deployment Health Re-assessment (PDHRA). The series of five questions start with two questions regarding the use of alcohol requiring a dichotomous response pattern of "yes or "no" (Did you use alcohol more than you meant to in the past month? Have you felt that you wanted to or needed to cut down on your drinking in the past month?). The third question asks how often the respondent has a drink containing alcohol. The answer choices range from never to four or more times a week. The fourth question asks specifically the number of drinks containing alcohol are consumed on a typical day when the respondent is drinking. The answer range is from 1-2 drinks to ten or more. The last question asks how often the respondent has six or more drinks on one occasion. The answers range from never to daily. Although the five questions addressing alcohol usage were taken from DD Form 2900, they are also questions asked within the Alcohol Use Disorders Identification Test (AUDIT) which is a series of ten questions used to identify persons with

dangerous and harmful patterns of alcohol consumption. The AUDIT has an internal consistency of .86.

  Depression. Depression is measured using two questions adopted from the Department of Defense (DD) Form 2900, the Post-deployment Health Re-assessment (PDHRA).   The two questions inquire as to if the respondents have been bothered by changes in their level of interest or pleasure in doing things in addition to the level of changes in feeling down, depressed, or hopeless during the past month in taking the survey. The items are answered by filling in the circle that corresponds with the choices of: not at all; few or several days; more than half the days; and, nearly every day.   Although the two questions addressing depression were taken from DD Form 2900, they are also questions asked within the Beck's Depression Inventory-II (BDI-II) (Beck, Steer, & Brown, 1996) which is a series of twenty-one questions used to measure the presence of depression and the severity of the symptoms. The BDI-II is widely used and has a high internal consistency of .92.

  Anxiety. Anxiety is assessed using the Beck's Anxiety Inventory (BAI) (Beck & Steer, 1990).   The Beck's Inventory specifically examines the severity of self-reported anxiety symptoms.   This instrument is particularly useful since it isolates anxiety symptoms from symptoms of depression to avoid overlap between the BAI and BDI-II. The BAI is a list of twenty-one descriptive statements of anxiety symptoms such as, numbness or tingling, feeling hot, unable to relax, and hands trembling. The respondent are asked to rate how much they have been bothered by that symptom during the past month to include the day they take the questionnaire. The sample items are rated on a 4-point Likert scale response format (*0=not at all, 3=I can barely stand it*). Cronbach's alpha is .92 to .94 for this factor.

Aggression. The Buss-Perry Aggression Questionnaire (BPAQ)(Buss & Perry, 1992) is used in this study to measure physical aggression, verbal aggression, anger, and hostility. The BPAQ is a 29-item instrument that contains statements addressing the above mentioned subscales. Sample statements include: I have become so mad that I have broken things; I flare up quickly but get over it quickly; and, Some of my friends think I am a hothead. The respondent will be asked to rate how characteristic the statements are in describing them. The instrument uses a 5-point Likert scale response format (*1=extremely uncharacteristic of me, 5= extremely characteristic of me*). Cronbach's alpha is .72 to .89 for this factor.

In keeping with the hypotheses of this study, post-deployment adjustment issues is defined by the levels of anxiety (Beck's Anxiety Inventory), aggression (Buss-Perry Aggression Inventory), and alcohol use (AUDIT) of the respondents. The two questions used in the questionnaire regarding depression were combined with the PTSD checklist results to create one dependent variable. In support of the inclusion of the two questions measuring depression with the PTSD variable, the depression questions regarding the level of interest/pleasure of doing things along with feeling down, depressed, or hopelessness, are similar to the questions that address the category Criterion C (avoidance/emotional numbing) of PTSD.

To gain the maximum insight into the relationship between the independent variables and the individual measures that capture the post-deployment adjustment issues, the results of this study will include the significant relationships of the independent variables as it relates to each element of the dependent variable; aggression, anxiety, alcohol use, and PTSD/depression. By examining the statistical results of the relationships between the independent variables and each of the individual elements that define post-deployment adjustment issues in this study, the analyses will provide more insight into specific issues that are significant for further research.

<u>Limitations</u>

This study contributes to the body of literature concerning traumatic and combat stress for police officers who are veterans of Operation Iraqi Freedom and or Operation Enduring Freedom/Afghanistan, however, due to the small sample size and the purposive sampling strategy, the results are not generalizable beyond the instant research. Further, given the small sample size and the inherent homogeneity of the sample, statistical analyses resulted in less variation and the potential for Type I errors. In addition, the deployment risk and resilience factors used in this study do not include an exhaustive list of all potential risk and resiliency factors that could impact the overall mental and general adjustment of those officers returning to urban policing after a military deployment. Lastly, social desirability may be another limitation worthy of discussion. The respondents in this study are asked questions of a sensitive nature regarding their level of anger, aggression, depression and alcohol usage. Even though the researcher discussed the confidentiality of the research project with the police officers taking the survey, it is possible that respondents' veracity was compromised by career concerns.

Chapter 4

Results

The primary objectives of the study were to explore policing critical incidents, deployment risk and resiliency factors in predicting post-deployment adjustment outcomes of police officers returning from combat. In order to best determine the factors that contribute or hinder the overall adjustment of the police officers returning from deployment, bivariate regression, factor analysis, and multiple regression was used for each hypothesis. Before exploring the relationship between the independent variables and post-deployment adjustment issues, descriptive statistics were used to examine the variability of the data. Following the presentation of the descriptive statistics for the independent and dependent variables, bivariate regression models are presented examining the relationships between the independent variables and dependent variables.

In addition to the bivariate models, factor analysis was used for each of the scales measuring the independent variables as a form of data reduction due to the small sample size in this study. The significant factors were used in a linear regression to determine the best model controlling for various demographic variables. Table 4 illustrates the organization of the data results of this study and how the results are presented in this chapter.

Descriptive Analyses of the Dependent Variables

Descriptive statistics of the scales within the elements that define post-deployment issues offer a glimpse into the self-reporting of each case as it relates to the post-deployment adjustment issues. In addition, descriptive statistics for the independent variables were completed presenting important results regarding the respondent's life experiences.

Table 4: Organization of the data results

Descriptive analyses of the dependent variables
     PTSD/depression
     AUDIT
     Beck's Anxiety Inventory
     Buss-Perry Aggression Questionnaire

Descriptive analyses of the independent variables
     Critical incident exposure
     Pre-deployment life events
     Training and deployment preparedness
     Life and family concerns
     Unit military social support
     Perceived threats during deployment
     Combat exposure
     Post-battle experiences
     Post-deployment social support
     Post-deployment life events
     Mental health assistance

Bivariate Analyses

Multivariate Analyses

     <u>Policing critical incidents and combat exposure</u>

          Critical incident exposure
               Factor analysis
               Regression model for significant variables with alcohol use
               Regression model controlling for demographic variables

          Perceived threats during deployment
               Factor analysis
               Regression model for significant variable with alcohol use

          Combat exposure
               Factor analysis
               Regression model for significant variable with aggression

Table 4: Organization of the data results

Life events

    Pre-deployment life events
        Factor analysis
        Regression model for significant variables with alcohol use
        Regression model for significant variable with anxiety

    Post-deployment life events
        Factor analysis
        Regression model for significant variable with alcohol use
        Regression model for significant variable with aggression
        Regression model for significant variables with anxiety
        Regression model controlling for demographic variables

Life and family concerns
        Factor analysis
        Regression model for significant variables with alcohol use
        Regression model for significant variable with PTSD/depression
        Regression model controlling for demographic variables

Social support

    Unit social support
        Factor analysis
        Regression model for significant variables with alcohol use
        Regression model controlling for demographic variables

    Post-deployment social support
        Factor analysis
        Regression model for significant variables with alcohol use
        Regression model for significant variable with anxiety
        Regression model for significant variables with PTSD/depression
        Regression model controlling for demographic variables

Mental health assistance
        Factor analysis
        Regression model for significant variable with aggression
        Regression model for significant variable with alcohol use
        Regression model controlling for demographic variables

Summary

The 17-item PTSD Checklist (Weathers, Litz, Herman, Huska, & Keane, 1993) adapted from the *Diagnostic and Statistical Manual of Mental Disorders IV* (American Psychiatric Association, 1994) was used to measure post-traumatic stress symptoms in this study. The checklist includes evaluating PTSD's symptom categories, Criteria B (re-experiencing and intrusive thoughts and memories), Criteria C (active avoidance and emotional numbing) and Criteria D (hyperarousal). Of the 17-items on the PTSD checklist, over half of the respondents provided a positive response to nine of the questions. Positive response is defined by experiencing the symptom from varying degrees of "a little bit" to extremely" as compared to not experiencing the symptom at all. Table 5 illustrates the questions obtaining over a fifty percent response rate from the participants in the study. Five of the nine questions fit into the PTSD symptom category, Criteria D (hyperarousal).

As mentioned in Chapter 3, alcohol consumption was measured using five questions adopted from the Department of Defense (DoD) Form 2900, the Post-deployment Health Re-assessment (PDHRA) which are also found within the Alcohol Use Disorders Identification Test (AUDIT.) Table 6 presents the frequency statistics for reported alcohol usage. A total of 36.4 percent of the sample (N=16) reported having a drink that contained alcohol two to four times a month while eight participants (18.2%) indicated they drank alcohol two to three times a week. A larger percentage, eleven participants (25%), reported drinking alcohol four or more times a week. On a typical day when drinking alcohol, 47.7 percent drank one to two drinks, 31.8 percent consumed three to four drinks, while six (13.6%) reported drinking more than five to six drinks at one time. When responding to the number of times the respondent had six or more drinks on one occasion, 27.3 percent indicated that it occurred less than once a month while 18.2 percent stated they drank six drinks on one occasion monthly. A

large percentage, 47.7 percent stated they never drank six or more drinks on one occasion. The majority of the respondents, 90.9 percent, felt that they were not using alcohol more than they should and that only 13.6 percent felt that they wanted or needed to cut down on their alcohol consumption.

There were two questions that measured depression captured in the self-reported questionnaire. It is worth noting that almost half (42%) of the respondents had little interest or pleasure in doing things a few or several days during the past month of taking the survey. A quarter (25%) of the respondents reported feeling down, depressed or hopeless during the past month before taking the survey.

In measuring anxiety, the Beck's Anxiety Inventory (BAI) was used in this study. Only two of the variables in the BAI had a positive response of over 50 percent by the respondents. Sixty-four percent (64%) of the sample reported an inability to relax as being bothersome while 52.3 percent had issues with indigestion over the past month of taking the survey. In contrast suggesting resiliency, 93.2 percent had no fear of dying and 79.5 percent reported that being scared was not particularly bothersome during the past month. In addition, the majority of the sample had no issues with numbness/tingling (59.1%), feeling hot (54.5%), wobbly legs (86.4%), dizziness (77.3%), heart racing (61.4%), nervousness (65.9%) or difficulty in breathing (84.1%) common symptoms of anxiety.

The Buss-Perry Aggression Questionnaire (BPAQ), measuring aggression, is the last scale included within the post-deployment adjustment outcomes. Table 7 includes the variables within the BPAQ that had a response of over 40 percent by the participants.

Table 5: PTSD 17-item Checklist Questions – Descriptive analysis

Variable	N	%
Criteria B - re-experiencing, intrusive thoughts and memories		
Bothered by repeated, disturbing memories, thoughts, or images of a stressful experience from the past	28	63.6
Bothered by repeated, disturbing dreams of a stressful experiences from the past	26	59.1
Criteria C - active avoidance and emotional numbing		
Avoid thinking about or talking about a stressful experience from the past or avoid having feelings related to the experience	23	52.3
Feeling distant or cut off from other people	24	54.5
Criteria D – hyperarousal		
Trouble falling or staying asleep	29	65.9
Feeling irritable or having angry outbursts	24	54.5
Having difficulty concentrating	24	54.5
Being super-alert or watchful or on guard	34	77.3
Feeling jumpy or easily startled	25	56.8

Table 6: Alcohol Use – Descriptive Analysis

Variable	N	%
Drink alcohol 2-4 times monthly	16	36.4
Drink alcohol 2-3 times weekly	8	18.2
Drink alcohol 4 or more times weekly	11	25
Consumes 1-2 drinks at one sitting	21	47.7
Consumes 3-4 drinks at one sitting	14	31.8
Consumes 5-6 drinks at one sitting	6	13.6
Not using alcohol more than they should	40	90.9
Need or want to cut down on their alcohol usage	6	13.6

<u>Descriptive Analyses for the Independent Variables</u>

Policing critical incidents. In measuring the exposure to policing critical incidents, the Critical Incident History Questionnaire (CIHQ) is used in this study. Table 7 illustrates the exposure to critical incidents for the sample in this study. Twenty of the thirty-four variables in the CIHQ had a positive response of over 50 percent by the respondents meaning the police officers in this study experienced 59 percent the critical incidents listed in the CIHQ at least once during their police career. In addition, Table 8 shows the number of officers who experienced the particular critical incident more than ten times during their policing duties. Ninety percent of the police officers in this study have encountered an adult badly beaten, an adult sexually assaulted, and the body of someone recently dead. No respondents reported being taken hostage or making a mistake that led to the serious injury or death of a fellow officer.

Pre-deployment life events outside of law enforcement. In measuring the traumatic life stressors outside of law enforcement before deployment, the pre-deployment life events of the Deployment Risk and Resiliency Inventory (DRRI) scale was used to capture this information. Table 9 shows that over half of the respondents experienced the death of someone close to them (72.7%), witnessed someone being assaulted or violently killed (54.5%), and experienced physical injury by another person (56.8%) prior to deployment. Of the twenty-five police officers who reported being physically injured by another person, ten (22.7%) suffered the injury in childhood, while seven (15.9%) experienced the injury in adulthood. Eight of the respondents (18.2%) reported the injuries occurred in childhood and adulthood. The one respondent who experienced unwanted sexual activity reported the activity occurred in childhood.

Table 7: The Buss-Perry Aggression Questionnaire – Descriptive Analysis

Variable	N	%
If I have to resort to violence to protect my rights, I will.	20	45.5
When people are especially nice to me, I wonder what they want.	18	40.9
I tell my friends openly when I disagree with them.	35	79.5
I am even-tempered person.	31	70.5
I am suspicious of overly friendly strangers.	30	68.2
When people annoy me, I may tell them what I think of them.	23	52.3
If somebody hits me, I hit back.	34	77.3

Table 8: Exposure to policing critical incidents – Descriptive Analysis

Variable	N	%
Seriously injured intentionally	16	36.4
> 10 times	4	9.1
Seriously injured accidentally	22	50
> 10 times	5	11.4
Present when fellow officer was intentionally killed	9	20.5
Present when fellow officer was seriously injured intentionally	23	52.3
> 10 times	5	11.4
Present when fellow officer was seriously injured accidentally	25	56.5
>10 times	5	11.4
Present when fellow officer was killed accidentally	6	13.6
Seriously beaten	10	22.7
> 10 times	3	6.8
Taken hostage	0	0
Received threats toward loved ones as retaliation for police work	29	65.9
> 10 times	4	9.1
Being shot at	24	54.5
> 10 times	3	6.8
Threatened with a gun	30	68.2
> 10 times	6	13.6
Threatened with a knife or other weapon	28	63.6
> 10 times	8	18.2
Trapped in a potentially life-threatening situation	16	36.4
> 10 times	4	9.1
Exposed to serious risk of AIDS/other life-threatening diseases	30	68.2
> 10 times	12	27.3

Table 8: Exposure to policing critical incidents – Descriptive Analysis

Variable	N	%
Life threatened by an aggressive/dangerous animal	20	45.5
> 10 times	5	11.4
Exposed to life-threatening toxic substance	9	20.5
> 10 times	2	4.5
Had to kill/seriously injure someone in the line of duty	16	36.4
> 10 times	1	2.3
Shot someone in line of duty without injuring them	6	13.6
> 10 times	1	2.3
Making a mistake that led to serious injury or death of fellow officer	0	0
Making a mistake that led to the serious injury/ death of a bystander	1	2.3
High speed chase where live were in danger	37	84.1
> 10 times	21	47.8
Seeing someone dying	37	84.1
> 10 times	16	36.4
Encountering the body of someone recently dead	43	97.7
> 10 times	33	75.1
Encountering a decaying corpse	36	81.8
> 10 times	14	31.9
Encountering a mutilated body/human remains	26	59.1
> 10times	6	13.7
Making a death notification	34	77.3
> 10 times	15	34.1
Encountering a child who had been sexually abused	33	75
> 10 times	13	29.5
Encountering a child who has been badly beaten	25	56.8
> 10 times	9	20.4

Table 8: Exposure to policing critical incidents – Descriptive Analysis

Variable	N	%
Encountering an adult who had been sexually assaulted	42	95.5
> 10 times	21	47.7
Encountering an adult who had been badly beaten	43	97.7
> 10 times	31	70.5
Encountering a child who was severely neglected or in dire need of medical attention due to neglect	28	63.6
> 10 times	6	13.7
Seeing animals that had been severely neglected/ intentionally injured/killed	28	63.6
> 10 times	7	15.9
Life endangered by a large-scale man-made disaster	7	15.9
> 10 times	1	2.3
Life endangered in a large-scale natural disaster	12	27.3
> 10 times	1	2.3

Training and deployment preparedness. The training and deployment scale of the DRRI was used in this study to determine the degree to which the respondent felt prepared for deployment. This scale includes information related to their individual role in the mission of the unit as well as the perception of training received prior to deployment. In addition, statements also address the availability and working order of equipment and supplies. In Table 10 demonstrates that over half of the sample agreed with all of the statements within the scale except for three statements with response rate below 40 percent. Seventeen of the respondents (38.6%) agreed with the statement that they saw as much combat as expected while deployed and had a pretty good idea of how long it would take to complete their mission. Fifteen of the respondents (34.1%) agreed with the statement they were accurately informed about what daily life would be like while deployed.

Life and family concerns. The life and family concern scale of the DRRI was used in this study to determine the level to which the respondent felt that military deployment might negatively impact other areas of their life such as career and family life. In Table 11 shows the percentage of the sample who responded "a good deal" or "a little" to the factor. Ten of the fourteen factors had a positive response of over 50 percent. Missing out on important events, concerned about the well-being of family or friends while away and the inability to help family or friends if they had some type of problem all had a response rate of over 80 percent.

Table 9: Pre-deployment life events – Descriptive analysis

Variable	N	%
Experienced a natural disaster	16	36.4
Exposed to toxic substance	8	18.2
Experienced mental illness, or life-threatening physical illness of someone close to me	9	20.5
Experienced parents who had problems with drugs or alcohol	10	22.7
Experienced death of someone close to them	32	72.7
Went through a divorce or been left by a partner or significant other	17	38.6
Witnessed someone being assaulted or violently killed	24	54.5
Robbed or had home broken into	10	22.7
Lost job	1	2.3
Emotionally mistreated	5	11.4
Seen or heard physical fighting between parents or caregivers	8	18.2
Physically punished by a parent or primary caregiver	20	45.5
Physically injured by another person	25	56.8
Experienced unwanted sexual activity	1	2.3

Table 10: Training and deployment preparedness – Descriptive Analysis

Variable	N	%
Had all supplies/equipment needed to get my job done	29	65.9
Equipment given functioned the way it was supposed to	31	70.5
Received adequate training on how to use equipment	34	77.3
Knew how to treat animal bites, insect stings, or allergic reactions to plants in the region	29	65.9
Received adequate training on what to do in case of a nuclear, biological, or chemical (NBC) attack	34	77.3
Had enough gear to protect myself in case of nuclear, biological, or chemical (NBC) protective gear	30	68.2
Received adequate training on how to perform daily life activities while wearing nuclear, biological, or chemical (NBC) protective gear	32	72.7
Adequately prepared to deal with the region's climate	26	59.1
Accurately informed about what to expect from the enemy	30	68.2
Saw as much combat as expected	17	38.6
Informed about role unit was expected to play in the deployment	27	61.4
Had a pretty good idea of how long the mission would take to complete	17	38.6
Accurately informed of what daily life would be like during my deployment	15	34.1
Adequately trained to work the shifts required of me during my deployment	25	56.8

Table 11: Life and family concerns – Descriptive Analysis

Variable	N	%
While deployed, I was concerned about . . .		
Missing out on a promotion at job back home	24	54.6
Missing out on opportunities to start a career while I was away	15	34.1
Damaging my career because I was overseas for a long time	24	54.6
Losing touch with co-workers or supervisors back home	29	65.9
Being unable to financially support my family while away	11	25
Harming my relationship with my spouse/ Significant other	27	61.4
Being left by spouse/significant other	17	38.6
Missing out on my children's growth and development while I was away	29	65.9
Losing touch with friends	27	61.4
Missing important events at home such as birthdays, weddings, funerals, graduations, etc.	36	81.8
The well-being of family or friends while I was away	40	90.9
Inability to help family or friends if they had some type of problem	40	90.9
Inability to directly manage or control family affairs	34	77.2
Care that my children were receiving while away	14	31.8

Unit military social support. The deployment social support scale of the DRRI was used in this study to determine the amount of assistance and support the respondent perceived they received from military leaders as well as from their peers during deployment. Table 12 shows that at least half of the sample agreed with all of the statements included within the deployment social support scale.

Deployment concerns/perceived threats during deployment. The perceived threat scale of the DRRI was used in this study to determine the level to which the respondents were concerned for their well-being while in the war zone. This scale is based on the cognitive and emotional responses to situations based on their own assessment of their experiences while in combat. Table 13 shows the percentage of positive responses to the factors in this scale. Three of the factors have a positive response rate of over 50 percent, concerned unit would be attacked by the enemy (64.7%), afraid would encounter a mine/booby trap (75%) and concern about the health effects of breathing bad air (54.5%).

Combat experiences. The combat experiences scale of the DRRI was used in this study to measure actual warfare experiences of the respondents during their deployment. Table 14 shows that over 90 percent of the sample went on combat patrols/missions and received hostile incoming fire from small arms, artillery, rockets, mortar or bombs while in the war zone. In addition, over 70 percent encountered land, water mines and/or booby traps and were attacked by terrorists or civilians. Over 50 percent of the respondents was in a vehicle that was under fire, personally witnessed someone from their unit or ally unit being seriously wounded or killed and personally witnessed soldiers from the enemy being seriously wounded or killed. In addition, over 50 percent of the respondents fired at the enemy.

Table 12: Unit social support – Descriptive Analysis

Variable	N	%
Military unit was like family	32	72.7
Sense of camaraderie within unit	38	86.4
Members of unit understood me	29	65.9
Members of the unit were trustworthy	30	68.2
Could go to most people in unit for help when had a personal problem	22	50.0
Commanding officers were interested in what I thought/how I felt about things	22	50.0
Impressed by the quality of leadership in military unit	24	54.5
Superiors made a real attempt to treat me as a person	23	52.3
Commanding officers were supportive of my efforts	25	56.8
My efforts really counted to the military	23	52.3
The military appreciated my service	22	50.0
I was supported by the military	24	54.5

Table 13: Deployment concerns/perceived threats during deployment – Descriptive Analysis

Variable	N	%
Thought I would never survive	4	9.1
Felt safe	19	43.2
Concerned enemy would use nuclear, biological, chemical agents (NBC)	5	11.4
Felt in great danger of being killed/wounded	18	40.9
Concerned unit would be attacked by the enemy	27	61.4
Worried about the possibility of accidents (friendly fire/training injuries)	24	54.5
Afraid would encounter a mine/booby trap	33	75.0
Felt secure that would come home after war	28	63.6
Thought vaccinations received would cause sickness	10	22.7
Thought tablets took to protect me would make me sick	8	18.2
Would become sick from the pesticides or other routinely used chemicals	16	36.4
Concerned about the health effects of breathing bad air	24	54.5
Thought exposure to depleted uranium would negatively affect my health	14	31.8
Afraid the equipment given to protect from nuclear, biological, chemical agents (NBCs) would not work	13	29.5
Worried about getting an infectious disease	15	34.1

Table 14: Exposure to combat experiences – Descriptive Analysis

Variable	N	%
Went on combat patrol/missions	40	90.9
I/Members of unit encountered land or Water mines and/or booby traps	35	79.5
I/Members of unit received hostile incoming fire from small arms, artillery, rockets, mortar, or bombs	41	93.2
I/Members of unit received "friendly" incoming Fire from small arms, artillery, rockets, mortars, or bombs	4	9.1
In a vehicle that was under fire	26	59.1
I/Members of unit were attacked by terrorist or civilians	36	81.8
Part of a land or artillery unit that fired on the enemy	18	40.9
Part of an assault on entrenched/fortified positions	14	31.8
Took part in an invasion that involved naval and/or land forces	9	20.5
Unit engaged in battle in which it suffered casualties	18	40.9
Personally witnessed someone from my unit or ally unit being seriously wounded or killed	26	59.1
Personally witnessed soldiers from enemy troops being seriously wounded or killed	23	52.3
I was wounded or injured in combat	2	4.5
Fired weapon at the enemy	24	54.5
Killed or think they killed someone in combat	19	43.3

Post-battle experiences. The aftermath of battle scale of the DRRI was used in this study to determine the level to which the respondents were exposed to the other aspects of combat. This scale includes information related to their observations of the devastation of post-battle environments. Table 15 demonstrates that eleven of the fifteen factors used in this scale had a response rate of over 50 percent meaning that at least half of the sample had engaged or observed the factor.

Post-deployment social support. The post-deployment social support scale of the DRRI was used in this study to determine the degree to which the respondents felt that family, co-workers and the community provided emotional assistance upon their return from deployment. This scale also measured their accessibility to resources within the family as well as the community. Table 16 illustrates that thirteen of the fifteen factors used in this scale had a response rate of over 50 percent meaning that at least half of the sample indicated a high level of social support in these factors. Fourteen of the respondents (31.8%) agreed with the statement that they had problems they could not discuss with family or friends. Twenty of the respondents (45.5%) disagreed with the statement and felt that they indeed had family and friends they could discuss problems with while ten respondents (22.7%) neither agreed nor disagreed. In addition, nineteen (43.2%) of the sample agreed that people at home did not understand what they had gone through while in the Armed Forces. An additional fifteen (34.1%) disagreed with the level of understanding that people had concerning their experiences while in the Armed Forces while ten (22.7%) neither agreed nor disagreed with the statement.

Table 15: Exposure to post-battle experiences – Descriptive Analysis

Variable	N	%
Observed homes/villages that had been destroyed	35	79.5
Saw refugees who had lost their homes/belongings as a result of battle	31	70.5
Saw people begging for food	37	84.1
I/My unit took prisoners of war	24	54.5
Interacted with enemy soldiers who were taken as prisoner of war	21	47.7
Exposed to the sight, sound, or smell of animals that had been wounded/killed from war-related causes	24	54.5
Took care of injured/dying people	11	25.0
Involved in removing dead bodies after battle	6	13.6
Exposed to sight, sound, or smell of dying men and women	22	50.0
Saw enemy soldiers after they had been severely wounded or disfigured in combat	24	54.5
Saw bodies of dead enemy soldiers	25	56.8
Saw civilians after they had been severely wounded or disfigured	23	52.3
Saw the bodies of dead civilians	22	50.0
Saw American or allies after they had been severely wounded/disfigured in combat	29	65.9
Saw bodies of dead Americans or allies	21	47.7

Table 16: Post-deployment social support – Descriptive Analysis

Variable	N	%
Reception received when returned from deployment made me feel appreciated for my efforts	33	75.0
The American people made me feel at home when I returned	33	75.0
People made me feel proud to have served my country in the Armed Forces	36	81.8
I am carefully listened to and understood by family members or friends	30	68.2
Among friends and relatives there is someone who makes me feel better when I am feeling down	33	75.0
I have problems that I can't discuss with family or friends	14	31.8
Among friends or relatives, there is someone I go to when I need good advice.	36	81.8
People at home do not understand what I have been through while in the Armed Forces	19	43.2
There are people to whom I can talk about my deployment experiences	37	84.1
The people I work with respect the fact that I am a veteran.	35	79.5
My supervisor understands when I need time off to take care of personal matters.	32	72.7
My friend/relatives would lend me money if I needed it.	36	81.8
My friends/relatives would help me move belongings if I needed to.	36	81.8

Table 16: Post-deployment social support – Descriptive Analysis

Variable	N	%
When I am unable to attend to daily chores, there is someone who will help me with these tasks.	29	65.9
When I am ill, friend/family members will help out until I am well.	33	75.0

Post-deployment life events. The post-deployment life events scale of the DRRI was used in this study to measure the level of exposure to stressful events unassociated with deployment. Table 17 demonstrates that none of the factors used in this scale had a response rate of over 50 percent.

Mental health/stigma. A scale adapted from Hoge's et al.'s study (2004) was used in this study to address the barriers in seeking out mental health assistance or services. Table 18 shows that nineteen of the respondents (43.2%) agreed with the factor that they did not trust mental health professionals, while twelve (27.3%) neither agreed nor disagreed with the factor. The remainder of the sample, 29.5 percent, trusted mental health professionals. Two factors related to job concerns, seeking out mental health assistance would harm career, and members of the police department may have less confidence in them if they obtained mental health assistance had response rates of over 40 percent. In addition, the respondents were asked to rate 1-5, one being most likely to five being least likely, as to who they would trust to go to for mental health assistance. Ranked first by the respondents as their professional preference of whom they would go to for mental health assistance is a private psychologist/social worker with the least likely being the police department Employee Assistance Program. Ranked second by the respondents is personal clergy while third is the police department chaplain, and fourth in the ranking is the police department psychologist/social worker.

Table 17: Post-deployment life events – Descriptive Analysis

Variable	N	%
Experienced a natural disaster, a fire, or an accident in which I was hurt or my property was damaged	6	13.6
Experienced exposure to a toxic substance	3	6.8
Experienced a serious operation	9	20.5
Experienced the mental illness, or life-threatening physical illness of someone close to me.	10	22.7
Experienced the death of someone close to me.	16	36.4
Experienced stressful legal problems	8	18.2
Witnessed someone being assaulted or violently killed	14	31.8
Been robbed or had home broken into	1	2.3
Had a family member with a serious drug or alcohol problem	4	9.1
Emotionally mistreated	2	4.5
Experienced unwanted sexual activity as a result of force, threat of harm, or manipulation	0	0
Been physically injured by another person	6	13.6
Lost job	0	0
Gone through a divorce or been left by a partner or significant other	8	18.2
Problems getting access to adequate healthcare	2	4.5

Table 18: Mental health assistance – Descriptive Analysis

Variable	N	%
Do not trust mental health professionals	19	43.2
Do not know where to get help	4	9.1
Would be too embarrassing	12	27.3
Would harm career	21	47.7
Seen as weak	15	34.1
Mental health does not work	10	22.7
No adequate transportation	4	9.1
Difficult to schedule an appointment	3	6.8
Leadership might treat me differently	15	34.1
Members of police department might have less confidence in me	20	45.5

Bivariate regression models were conducted to determine if a relationship exists between the independent variables and post-deployment outcomes.   Table 19 represents the bivariate examination of each independent variable and the elements of post-deployment adjustment issues (aggression, anxiety, alcohol use, and PTSD/depression).   Seven significant relationships were found using linear regression. Life and family concerns and alcohol use (p<.000), post-deployment social support and alcohol (p<.01), post-deployment stressors and anxiety (p<.01) reluctance to seek mental health assistance and alcohol usage (p<.05), post-deployment stressors and aggression (p<.05), perceived threat during deployment and aggression (p<.10 and anxiety (p<. 10), were significantly related.

The bivariate regression life and concerns model indicated that the higher the level of career and family concerns reported as a result of deployment, the more likely the police officer experienced a higher rate of alcohol usage. In addition, the bivariate regression perceived threat during deployment model indicated a relationship between the perception of the threat for one's safety and well-being in a war zone and symptoms of aggression and anxiety. The bivariate regression post-deployment unit support model indicated that the higher the level of unit social support the less likely the police officer experienced a higher rate of alcohol usage.   The bivariate regression post-deployment stressors model indicated that the higher rate of stressful post-deployment life events, the more likely the police officer experienced anxiety symptoms. Lastly, the bivariate regression reluctance to seek mental health assistance model indicated that the more likely the police officer did not seek out mental health assistance the more likely the police officer experienced a higher rate of alcohol usage. Given the non-significant relationships in the bivariate regression models with the independent variables of exposure to critical

incidents, pre-life events, deployment preparedness, unit social support, combat exposure and the exposure to the consequences of battle and the dependent variables concerning post-deployment outcomes, the null hypotheses fails to be rejected.

There are few independent variables that had relationships with the elements defining post-deployment adjustment issues using bivariate regression. Given these findings, it is important to examine whether or not the relationships will be sustained within a multivariate model using the independent variables mentioned above, along with the other independent variables, critical incident exposure, pre-deployment stressors, deployment preparedness, social support, combat exposure, aftermath of battle, and post-deployment mental health treatment that were not significant at a bivariate level.

Table 19: An examination of the relationship between deployment risk and resiliency factors and post-deployment adjustment outcomes experienced by deployed police officers

Variable	Adjusted R^2	b(SE)	Sig.
Exposure to critical policing incidents	(Independent variable)		
Aggression	.022	-.096(.099)	.337
Alcohol	.045	-.038(.027)	.167
Anxiety	.001	.018(.086)	.841
PTSD/depression	.000	-.002(.122)	.988
Exposure to traumatic pre-deployment life events	(Independent variable)		
Aggression	.002	.141(.495)	.777
Alcohol	.004	- 056(.137)	.684
Anxiety	.005	.187(.427)	.664
PTSD/depression	.001	.109(.603)	.858
Deployment preparedness (Independent variable)			
Aggression	.001	-.032(.197)	.873
Alcohol	.020	-.049(.054)	.365
Anxiety	.001	-.026(.170)	.879
PTSD/depression	.038	-.303(.235)	.205
Life and family concerns (Independent variable)			
Aggression	.007	-.082(.152)	.591
Alcohol	.183	.117(.038)	.004****
Anxiety	.000	.013(.132)	.920
PTSD/depression	.050	.269(.181)	.144
Military unit social support (Independent variable)			
Aggression	.025	-.196(.189)	.305
Alcohol	.009	.033(.053)	.534
Anxiety	.025	-.168(.163)	.309
PTSD/depression	.013	-.172(.231)	.461
Perceived threat during deployment (Independent variable)			
Aggression	.081	.593(.309)	.062*
Alcohol	.006	.046(.089)	.607
Anxiety	.070	.479(.269)	.082*
PTSD/depression	.045	.538(.383)	.168

Variable	Adjusted R^2	b(SE)	Sig.
Combat Experiences (Independent variable)			
Aggression	.025	-.381(.371)	.310
Alcohol	.033	.123(.102)	.237
Anxiety	.004	-.127(.324)	.697
PTSD/depression	.000	-.056(.457)	.904
Post-battle experiences (Independent variable)			
Aggression	.054	-.487(.313)	.127
Alcohol	.007	.047(.089)	.601
Anxiety	.041	-.367(.272)	.185
PTSD/depression	.029	-.433(.386)	.259
Post-deployment social support (Independent variable)			
Aggression	.011	-.179(.256)	.489
Alcohol	.156	-.182(.056)	.008***
Anxiety	.004	.090(.222)	.688
PTSD/depression	.009	-.197(.312)	.531
Post-deployment life stressors (Independent variable)			
Aggression	.107	1.453(.648)	.030**
Alcohol	.007	.104(.189)	.585
Anxiety	.083	1.104(.567)	.058*
PTSD/depression	.023	.820(.825)	.326
Mental health assistance (Independent variable)			
Aggression	.003	.109(.298)	.715
Alcohol	.104	.172(.078)	.033**
Anxiety	.014	-.194(.256)	.452
PTSD/depression	.002	.104(.363)	.775

p<.000****
p<.01***
p<.05**
p<.10*

Multivariate Analyses of Deployment Risk and Resiliency Factors and

Post-deployment Adjustment Outcomes

This section presents the multivariate model for the elements defining post-deployment adjustment issues and the independent variables; exposure to policing critical incidents, pre-deployment life events, deployment preparedness, life and family concerns, unit social support, deployment concerns/perceived threat during deployment, combat experiences, post-battle experiences, post-deployment social support, post-deployment life events, and the reluctance to seek out mental health assistance. Although there were a number of non-significant relationships at the bivariate level, complete multivariate models were tested while controlling for various demographic variables.

Multivariate models for training/deployment preparedness and post-battle experiences showed no variables that were significant with aggression, anxiety, alcohol usage or PTSD/depression. The null hypothesis fails to be rejected with the independent variables of training/deployment preparedness and post-battle experiences. In addition, the demographic variables, the number of years in law enforcement and the age of the respondent had no relationship in any of the models with post-deployment outcomes.

An initial exploratory factor analysis was completed and only the variables with a significant correlation value of .4 and above were selected for inclusion in this study (Comrey & Lee, 1992; Tabachnick & Fidell, 2007). Next, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy index was used to examine the appropriateness of factor analysis by determining the partial correlations among the variables. Kaiser (1974) and SPSS software package advises using a KMO of over 0.5. All matrices in this study produced a KMO of over 0.5 except for perceived threats during deployment which had a KMO of .433. Although the

KMO of perceived threats during deployment was low indicating that factor analysis may not be useful, the results are still reported in this chapter, however will not be included in Chapter 5. After the examination of the scree plot to determine the gap between the Eigenvalues of the component matrix, a fixed number of factors were selected. A summation variable was created by averaging the factors within the component to get a new value for multiple regression. This method of summation was used working under the assumption that all questions within the scales are equally weighted in importance.

<div align="center">Policing Critical Incidents and Combat Experiences</div>

Exposure to policing critical incidents.   Law enforcement officers go through their careers with different levels of exposure to critical incidents. It is expected that police officers who are involved in numerous critical incidents will experience more stress in their lives. One element of the post-deployment adjustment issues, alcohol usage (p<.01) produced significant results with exposure to critical incidents using factor analysis and multiple regression as illustrated in Table 20.

An examination of the Kaiser-Meyer-Olkin measure of sampling adequacy suggests the sample was factorable (KMO=.675). As a result, a Principal Component Analysis (PCA) with a Varimax rotation of thirty-two variables was entered into the factor analysis producing five factors with a cumulative Eigenvalue of 66.285%. Four of the five components contained variables with positive loadings, indicating that as each variable increased, the other variables increased as well. The relationship between variables with positive loadings is maintained throughout the results of this study (Hair et al., 2006). Factor 2 (Safety of others) contained one variable, being trapped in a potentially life threatening situation, that had a negative loading indicating that while the other variables increased, being trapped in a potentially life threatening

situation will decrease. Negative variable loadings will have an inverse relationship with positive loadings throughout the results of this study (Hair et al., 2006).

Factor 1 (Personal safety) included being seriously injured intentionally, seriously injured accidently, present when fellow officer was killed intentionally, present when fellow officer was seriously injured, present when fellow officer was seriously injured accidently, being threatened with a gun, being threatened with knife/weapon, being exposed to serious risk of AIDS/life-threatening disease, life threatened by aggressive/dangerous animal, exposed to life-threatening toxic substance, making mistake that led to serious injury/death of bystander, involved in high speed chase where life in danger, seeing someone dying, and encountering a mutilated body/human remains. The Eigenvalue for personal safety was 11.401 with a total variance of 35.629%.

Factor 2 (Safety of others) included being trapped in a potentially life-threatening situation, encountering a body of someone recently dead, encountering a decaying corpse, encountering a child who has been sexually assaulted, encountering a child who has been badly beaten, encountering an adult who has been sexually assaulted, and encountering an adult who has been badly beaten. The Eigenvalue for death of others/assault of others/being trapped was 3.262 with a total variance of 10.195%.

Factor 3 (External violence) included being seriously beaten, encountering a child who was severely neglected in need of medical attention, seeing animals severely neglected/intentionally injured/killed, life endangered in a large-scale manmade disaster, and life endangered in a large-scale nautral disaster. The Eigenvalue for beaten personally/neglect/disasters was 3.003 with a total variance of 9.383%.

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Factor 4 (Using deadly force) included having to kill/seriously injure someone in the line of duty, having to shoot at someone in the line of duty without injuring them, and making a death notification. The Eigenvalue for use of deadly force was 1.945 with a total variance of 6.078%.

Factor 5 (Family safety) included present when fellow officer was killed accidentally and receiving threats towards family as retaliation for police work. The Eigenvalue for family safety and accidental death of officer was 1.687 with a total variance of 5.272%.

Alcohol usage

Using a straight average of the variable factor loadings, the average for each factor component was entered into a multiple regression and family safety (p<.01) and personal safety (p<.05) were significant and then considered together had a relationship with alcohol usage (p<.01). Family safety had a positive slope indicating officers who were present when a fellow officer was killed accidentally and received threats towards their family as retaliation for police work were more likely to score higher on the Alcohol Use Disorders Identification Test (AUDIT). Personal safety had a negative slope indicating officers who had increased exposure to being seriously injured intentionally, seriously injured accidently, present when fellow officer was killed intentionally, present when fellow officer was seriously injured, present when fellow officer was seriously injured accidently, being threatened with a gun, being threatened with knife/weapon, being exposed to serious risk of AIDS/life-threatening disease, life threatened by aggressive/dangerous animal, exposed to life-threatening toxic substance, making mistake that led to serious injury/death of bystander, involved in high speed chase where life in danger, seeing someone dying, and encountering a mutilated body/human remains were less likely to score high on the AUDIT.

In further examination of the relationship between critical incident exposure and alcohol usage, the significant factors, personal safety and family safety, were entered into a multivariate model while controlling for the number of deployments and the total number of months since departed theater of last deployment. The model, seen in Table 20, maintained overall significance (F test = 5.440, p<.05, adjusted R^2 = .313) explaining 31 percent of the variation in the AUDIT scale while considering family safety (p<.05), personal safety (p<.05) and number of deployments (p<.05), rejecting the null hypothesis. The demographic variable of total number of months since departed theater of last deployment had no significance in the model. The null hypothesis for the relationships between critical incident exposure and the dependent variables, aggression, anxiety and PTSD/depression fails to be rejected.

Family safety maintained a positive slope while personal safety maintained a negative slope as in the previous model. The number of deployments had a negative slope indicating that the officers who had a greater number of deployments were less likely to score high on the AUDIT. The results are depicted in Table 21.

Table 20: Examination of the relationship between exposure to policing critical incidents and alcohol usage

Variable	Alcohol usage (Dependent variable)		
	b(SE)	β	t
Critical incident exposure (Independent variable)			
Family safety	2.322(.752)	.438***	3.087
Personal safety	-1.583(.666)	-.337**	-2.375
Adjusted R^2	.191		
F test	6.088		

p<.01***
p<.05**

Table 21: Examination of the relationship between exposure to policing critical incidents and alcohol usage with controlling variables

Variable	Alcohol usage (Dependent variable)		
	b(SE)	β	t
Critical incident exposure (Independent variable)			
Number of deployments	-.764(.292)	-.372**	-2.619
Family safety	1.997(.746)	.375**	2.678
Personal safety	-1.495(.631)	-.332**	-2.369
Adjusted R^2	.313		
F test	5.440		

p<.05**

Exposure perceived threat during deployment. It is expected that police officers who have a higher perception of fearing for their safety and well-being while deployed will experience more stress outcomes. Table 22 shows one element of post-deployment issues, alcohol usage (p<.10), that produced a significant result with the exposure to threat during deployment using factor analysis and multiple regression.

An examination of the Kaiser-Meyer-Olkin measure of sampling adequacy suggested the sample is not favorable for facatoring (KMO=.433), however, a Principal Component Analysis (PCA) with a Varimax rotation of fifteen variables was entered into the factor analysis producing three factors with a cumulative Eigenvalue of 53.512%. Factors 1 and 2 contained variables that all had positive loadings indicating that as each variable increases, the other variables increased as well. Factor 3 contained two variables, felt safe and felt secure they would come home that had negative loadings indicating that as the variables with the positive loadings increased, the two variables with negative loadings decreased.

Factor 1 (Sense of security) included feeling safe, unit would be attacked by the enemy, felt was in great danger, afraid would encounter booby trap, fear of being exposed to depleted uranium, biological protective equipment not working and worried about getting a disease while deployed. The Eigenvalue for sense of security from combat exposure was 3.472 with a total variance of 23.147%. Factor 2 (Environmental and medical concerns) included being concerned about the vaccinations received would make them sick, concerned tablets taken would cause sickness, pesticide concerns, and quality of air while being deployed. The Eigenvalue for environmental and medical concerns was 2.862 with a total variance of 19.077%. Factor 3 (Overall survival) included concerns about survival, concerned the enemy would use biological

weapons, worried about accidents during deployment and feeling secure that they would return home. The Eigenvalue for overall survival was 1.693 with a total variance of 11.287%.

Alcohol usage

Using a straight average of the variable factor loadings, the average for each factor component was entered into a multiple regression and overall survival ($p<.01$) had a significant relationship with the AUDIT. Overall survival had a negative slope indicating officers with increased perceived threats of thoughts they would not survive, concern enemy would use biological warfare, worried about accidents, and felt secure they would come home were less likely to score high on the AUDIT.

In further examination of the relationship between deployment concerns/perceived threats and alcohol usage, the significant factors, sense of security, environmental concerns and overall survival, were entered into a multivariate model while controlling for the of number of deployments and the total number of months since departed theater of last deployment. None of the models were significant when controlling for demographic variables. The null hypothesis regarding perceived threats while deployed and the post-deployment outcomes fails to be rejected.

Combat experiences. It is expected that police officers who reported a higher rate of combat exposure are more likely to experience more stress outcomes. One element of the post-deployment adjustment issues, aggression ($p<.05$), produced a significant result using factor analysis and multiple regression as reflected in Table 23.

Table 22: Examination of the relationship between perceived threats while deployed and alcohol usage

Variable	Alcohol usage (Dependent Variable)		
	b(SE)	β	t
Perceived threats while deployed (Independent variable)			
Overall survival	-1.677(.976)	-.256*	-1.719
Adjusted R^2	.044		
F test	2.956		

p<.10*

An examination of the Kaiser-Meyer-Olkin measure of sampling adequacy suggested the sample was factorable (KMO=.767). As a result, a Principal Component Analysis (PCA) with a Varimax rotation of fifteen variables was entered into the factor analysis producing two factors with a cumulative Eigenvalue of 49.959%. Both factors contained variables with positive loadings.

Factor 1 (Activites of battle) included taking part in the following missions while deployed; receiving friendly incoming fire, in vehicle that was under fire, part of a land unit that fired on the enemy, part of an assault on entrenched positions, took part in an invasion, engaged in battle which suffered casualties, personally witnessed ally member being wounded/killed, personally witnessed enemy being wounded/killed, wounded/injured in combat, fired weapon at the enemy and killed or think they killed someone in combat. The Eigenvalue for being fired upon, witnessed injuries/casualties and fired at enemy was 5.574 with a total variance of 37.163%. Factor 2 (Hostile combat missions) included going on combat missions, members of unit went on combat missions, received hostile incoming fire, and being attacked by terrorist/civilians while being deployed. The Eigenvalue for hostile combat missions was 1.919 with a total variance of 12.796%.

Aggression

Using a straight average of the variable factor loadings, the average for each factor component was entered into a multiple regression and hostile combat missions ($p<.05$) was significant in predicting aggression. Hostile combat missions had a negative slope indicating officers with increased combat missions, incoming fire and attacks by terrorist/civilians were less likely to score high on the Beck's Aggression Inventory.

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Table 23: Examination of the relationship between exposure to combat while deployed and aggression

Variable	Aggression (Dependent variable)		
	b(SE)	β	t
Combat experiences (Independent variable)			
Hostile combat missions	-12.851(5.202)	-.356**	-2.470
Adjusted R^2	.106		
F test	6.103		

p<.05**

In further examination of the relationship between combat experiences and aggression, the significant factor, hostile combat missions was entered into a multivariate model while controlling for the of number of deployments and the total number of months since departed theater of last deployment. The aggression model maintained overall significance (F test = 3.629, p<.022, adjusted R^2 = .168) explaining 17 percent of the variation in the Beck's Aggression scale while considering hostile combat missions (p<.009), rejecting the null hypothesis. The demographic variables of total number of months since departed theater of last deployment and number of deployments had no significance in predicting aggression. The null hypothesis for the relationships between combat exposure and the dependent variables, anxiety, alcohol usage, and PTSD/depression fails to be rejected. Hostile combat missions maintained a negative slope indicating officers with increased combat missions, incoming fire and attacks by terrorist/civilians are less likely to score high on the Beck's Aggression Inventory.

<div align="center">Life Events</div>

Pre-deployment life stressors outside of policing. In addition to the varying critical incidents potentially experienced by law enforcement officers, there are also various traumatic events unassociated with police work. It is expected that police officers who suffer through numerous traumatic life events will experience more stress outcomes. Two elements of the post-deployment adjustment issues, alcohol usage (p<.05) and anxiety (p<.05) produced significant results with pre-deployment life stressors using factor analysis and multiple regression reflected in Table 24.

An examination of the Kaiser-Meyer-Olkin measure of sampling adequacy suggested the sample is factorable (KMO=.580). As a result, a Principal Component Analysis (PCA) with a Varimax rotation of fifteen variables was entered into the factor analysis producing four factors

with a cumulative Eigenvalue of 53.144%. The first three components all contained variables with positive loadings. Factor 4 (External trauma) contained one variable with a positive loading (witnessed assault or someone killed) and two variables with negative loadings (divorce and unwanted sex).

Factor 1 (Personal stressors) included experiencing a war zone, parent substance abuse, loss of a job, emotional mistreatment, and hearing parents fighting before military deployment. The Eigenvalue for personal stressors was 3.585 with a total variance of 23.900%.   Factor 2 (Environmental stressors) included experiencing a natural disaster, mental illness of family/friends, and being robbed before military deployment. The Eigenvalue for environmental stressors was 1.780 with a total variance of 11.870%. Factor 3 (Personal punishment) included experiencing a death of someone close to them, and being physically punished or injured before deployment.   The Eigenvalue for personal punishment was 1.322 with a total variance of 8.814%. Factor 4, external trauma included experiencing divorce, witnessing violence such as an assault and unwanted sex. The Eigenvalue for external trauma was 1.284 with a total variance of 8.561%.

Alcohol usage

Using a straight average of the variable factor loadings, the average for each factor component was entered into a multiple regression and personal punishment (p<.05) and the exposure to the external trauma (p<.05) were significant and then considered together had a relationship to the AUDIT or alcohol usage (p<.05). Personal punishment had a positive slope indicating officers with increased exposure to the death of someone close to them, being physically punished, and physically injured before deployment were more likely to score high on the AUDIT. External trauma containing the variables, divorce, witness violence or someone

killed and unwanted sex before deployment had a negative slope indicating that officers with increased exposure to these traumatic events were less likely to score high on the AUDIT.

Anxiety

Using a straight average of the variable factor loadings, the average for each factor component was entered into a multiple regression and personal punishment ($p<.10$) was significant in predicting anxiety. Personal punishment had a positive slope indicating officers exposed to the death of someone close to them and being physically punished or injured before deployment were more likely to score high on the Beck's Anxiety Inventory.

In further examination of the relationship between pre-deployment life events and anxiety and alcohol usage, the significant factors personal punishment and external trauma were entered into a multivariate model while controlling for the number of deployments and the total number of months since departed theater of last deployment. Neither multivariate model using the factors from pre-deployment life events while controlling for the number of deployments and the total number of months since departed theater of last deployment had a relationship with anxiety or alcohol usage. The null hypothesis for the relationships between pre-deployment life events and the dependent variables aggression and PTSD/depression fails to be rejected.

Table 24: Examination of the relationship between the exposure to pre-deployment life events and alcohol usage and anxiety

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Variable	Alcohol usage (Dependent variable)		
	b(SE)	β	t

Pre-deployment life stressors (Independent variable)

Personal punishment	2.280(1.081)	.308**	2.110
External trauma	-3.278(1.511)	-.317**	-2.170
Adjusted R^2	.117		
F test	3.848		

Variable	Anxiety (Dependent variable)		
Personal punishment	6.264(3.427)	.271*	1.828
Adjusted R^2	.052		
F test	3.341		

p<.05**
p<.10*

Post-deployment life stressors. It is expected that police officers who suffer through numerous traumatic life events upon return from their deployment outside of law enforcement will experience more stress outcomes. Three elements of the post-deployment adjustment issues, aggression ($p<.05$) alcohol usage ($p<.10$), and anxiety ($p<.01$) produced significant results with post-deployment life stressors using factor analysis and multiple regression as reflected in Table 25.

An examination of the Kaiser-Meyer-Olkin measure of sampling adequacy suggested the sample is factorable (KMO=.537). As a result, a Principal Component Analysis (PCA) with a Varimax rotation of fourteen variables was entered into the factor analysis producing five factors with a cumulative Eigenvalue of 70.710%. All factors contained variables with positive loadings.

Factor 1 (Physical violence) included experiencing mental illness/life threatening illness of someone close, witnessed someone being assaulted/killed, been physically injured and gone through a divorce or left spouse since return from deployment. The Eigenvalue for physical violence was 3.557 with a total variance of 25.406%. Factor 2 (Personal violations) included experiencing a death of someone close, been robbed/home broken into, and has been emotionally mistreated since return from deployment. The Eigenvalue for personal violations was 2.052 with a total variance of 14.658%. Factor 3 (Disasters/serious medical issues) included experiencing a natural disaster, exposure to toxic substance, and having a serious operation since returning home from deployment. The Eigenvalue for disasters/serious medical issues was 1.806 with a total variance of 12.900%. Factor 4 (Family substance abuse) included a family member having a serious drug/alcohol problem and problems getting access to adequate healthcare since returning home. The Eigenvalue for family substance abuse was 1.466 with a total variance of

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10.472%.   Factor 5 (Legal issues) included experiencing combat/exposure to war zone and having stressful legal problems since returning home from deployment. The Eigenvalue for legal issues was 1.018 with a total variance of 7.274%.

Alcohol usage and aggression

Using a straight average of the variable factor loadings, the average for each factor component was entered into a multiple regression and personal violations ($p<.10$) had a relationship with aggression ($p<.05$) and alcohol usage ($p<.10$).   Personal violations had a positive slope indicating that officers with an increased rate of exposure of experiencing a death of someone close, being robbed/home broken into, or being emotionally mistreated since return from deployment were more likely to score high on the Buss-Perry Aggression Inventory and AUDIT.

Anxiety

Using a straight average of the variable factor loadings, the average for each factor component was entered into a multiple regression and physical violence ($p<.10$) and family substance abuse ($p<.001$) were significant and then considered together had a relationship with anxiety ($p<.01$).   Both physical violence and family substance abuse has a positive slope indicating officers who experienced exposure to the post-deployment stressors of the experiencing mental illness/life threatening illness of someone close, witnessing someone being assaulted/killed, being physically injured or gone through a divorce or left spouse since return from deployment along with family member(s) having a serious drug/alcohol problem and problems getting access to adequate healthcare since returning home were more likely to score high on the Beck's Anxiety Inventory.

In further examination of the relationship between post-deployment life events and the dependent variables of post-deployment outcomes, the significant factors personal violations, physical violence, and family substance abuse were entered into a multivariate model while controlling for the of number of deployments and the total number of months since departed theater of last deployment. The model between the factors and aggression maintained overall significance (F test = 2.959, p<.025, adjusted R^2 = .201) explaining 20 percent of the variation in the Beck's Aggression Inventory while considering personal violations (p<.01), date departed theater of last deployment (p<.10) and number of deployments (p<.10), rejecting the null hypothesis as shown in Table 26. Personal violations maintained a positive slope indicating that officers with an increased rate of exposure of experiencing a death of someone close, being robbed/home broken into, or being emotionally mistreated since return from deployment were more likely to score high on the Buss-Perry Aggression Inventory. The demographic variables of the number of deployments and date departed theater of last deployment had a negative slope indicating that the officers who had a greater number of deployments were less likely to score high on the Beck's Aggression Inventory and the longer the officer had been home from deployment the less likely they scored higher on the Beck's Aggression Inventory.

Table 25: Examination of the relationship between post-deployment life stressors and aggression, alcohol usage and anxiety

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Variable	Aggression (Dependent variable)		
	b(SE)	β	t

Post-deployment stressors (Independent variable)

Personal violations	16.077(6.119)	.376**	2.628
Adjusted R^2	.121		
F test	6.904		

Variable	Alcohol (Dependent variable)		
Personal violations	3.330(1.757)	.281*	1.895
Adjusted R^2	.057		
F test	3.593		

Variable	Anxiety (Dependent variable)		
Physical violence	6.854(3.575)	.259*	1.917
Family substance abuse	16.920(4.763)	.480****	3.553
Adjusted R^2	.229		
F test	7.387		

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$p<.001$****
$p<.05$**
$p<.10$*

The model between the factors and alcohol maintained overall significance (F test = 3.935, p<.01, adjusted R^2 = .273) explaining 27 percent of the variation in the AUDIT scale while considering personal violations (p<.01) and number of deployments (p<.000), rejecting the null hypothesis.   Personal violations maintained a positive slope indicating that officers with an increased rate of exposure of experiencing a death of someone close, being robbed/home broken into, or being emotionally mistreated since return from deployment were more likely to score high on the AUDIT scale. The demographic variable, number of deployments, had a negative slope indicating that the officers who had a greater number of deployments were less likely to score high on the AUDIT scale.

The model between the factors and anxiety maintained overall significance (F test = 3.366, p<.05, adjusted R^2 = .233) explaining 23 percent of the variation in the Beck's Anxiety Inventory while controlling for demographic variables.   Family substance abuse (p<.05) maintained significance in predicting anxiety, rejecting the null hypothesis.   In this model, death/personal violations were not significant in predicting anxiety. Family substance abuse maintained a positive slope indicating that officers experiencing family member(s) having a serious drug/alcohol problem and problems getting access to adequate healthcare since returning home were more likely to score higher on the Beck's Anxiety Inventory. The demographic variables in this model have no significance. The null hypothesis for the relationships between post-deployment life events and the dependent variable, PTSD/depression, fails to be rejected.

Table 26: Examination of the relationship between post-deployment life events and aggression, alcohol usage and anxiety with controlling variables

Variable	Alcohol usage (Dependent variable)		
	b(SE)	β	t
Post-deployment life events (Independent variable)			
Personal violations	4.645(1.681)	.406****	2.763
Number of deployments	-1.193(.304)	-.581***	-3.926
Adjusted R^2	.273		
F test	3.935		
Variable	**Aggression (Dependent variable)**		
Personal violations	19.267(6.535)	.454***	2.948
Number of deployments	-2.035(1.182)	-.267*	-1.722
Date departed theater	-.113(.059)	-.289*	-1.892
Adjusted R^2	.201		
F test	2.959		
Variable	**Anxiety (Dependent variable)**		
Family substance abuse	15.602(4.603)	.484***	3.389
Adjusted R^2	.233		
F test	3.366		

$p<.000$****
$p<.01$***
$p<.05$**
$p<.10$*

Life and family concerns. It is expected that police officers who report a higher rate of concerns about life and family disruptions due to military deployment will experience more stress outcomes. Table 27 shows the two elements of post-deployment adjustment issues, alcohol usage ($p<.001$) and PTSD/depression ($p<.01$), that produced significant results with life and family concerns using factor analysis and multiple regression.

An examination of the Kaiser-Meyer-Olkin measure of sampling adequacy suggested the sample was factorable (KMO=.733). As a result, a Principal Component Analysis (PCA) with a Varimax rotation of fourteen variables was entered into the factor analysis producing three factors with a cumulative Eigenvalue of 70.713%. All three components contained variables with positive loadings.

Factor 1 (Inability to be a part of daily activities) included being concerned about being left by spouse/significant other, missing out on children's growth/development, losing touch with friends, missing important events, well-being of family friends, inability to help family and friends with problems, inability to directly manage/control family affairs and care children were receiving while deployed. The Eigenvalue for factor the inability to be a part of daily activities was 5.731 with a total variance of 40.936%. Factor 2 (Concern over personal relationships) included being concerned about losing touch with co-workers, being unable to financially support family and harming relationship with spouse/significant other while being deployed. The Eigenvalue for concerns over personal relationships was 2.494 with a total variance of 17.816%. Factor 3 (Career damage) included missing out on promotion at job, missing out on opportunities to start new career, and damaging career due to being overseas for a long time

during deployment. The Eigenvalue for career damage was 1.675 with a total variance of 11.961%.

Alcohol usage

Using a straight average of the variable factor loadings, the average for each factor component was entered into a multiple regression and concerns over personal relationships (p<.05) and career damage (p<.05) were significant and then considered together had a relationship with the AUDIT or alcohol usage (p<.001). Concerns over personal relationships had a positive slope indicating officers with increased concerns losing touch with co-workers, being unable to financially support family and harming relationship with spouse/significant other while being deployed were more likely to score higher on the AUDIT. Career damage also had a positive slope indicating officers with increased concern about missing out on promotion at job, missing out on opportunities to start new career, and damaging career due to being overseas for a long time during deployment were more likely to score higher on the AUDIT.

PTSD/depression

Using a straight average of the variable factor loadings, the average for each factor component was entered into a multiple regression and career damage (p<.01) had a relationship with PTSD/depression. Career damage had a positive slope indicating officers with increased concern about missing out on promotion at job, missing out on opportunities to start new career, and damaging career due to being overseas for a long time during deployment were more likely to score higher on the PTSD/depression portion of the survey.

In further examination of the relationship between life and family concerns and the dependent variables of post-deployment outcomes, the significant factors career damage and concerns over personal relationships were entered into a multivariate model while controlling for

the of number of deployments and the total number of months since departed theater of last deployment. The model between the factors and alcohol usage maintained overall significance (F test = 7.790, p<.000, adjusted R^2 = .411) explaining 41 percent of the variation in the AUDIT while considering career damage (p<.01), concerns over personal relationships (p<.01) and number of deployments (p<.05), rejecting the null hypothesis as shown in Table 28. Career damage and concerns over personal relationships maintained a positive slope indicating that officers with increased concerns losing touch with co-workers, being unable to financially support family and harming relationship with spouse/significant other while being deployed were more likely to score higher on the AUDIT. In addition, officers with increased concern about missing out on promotion at job, missing out on opportunities to start new career, and damaging career due to being overseas for a long time during deployment were more likely to score higher on the AUDIT. The demographic variable of the number of deployments had a negative slop indicating that officers who had a greater number of deployments were less likely to score higher on the AUDIT.

The model between the factors and PTSD/depression maintained overall significance (F test = 3.634, p<.05, adjusted R^2 = .213) explaining 21 percent of the variation in the PTSD/depression scale while controlling for the demographic variables rejecting the null hypothesis. Career damage was the only variable significant in the model (p<.10) and maintained a positive slope indicating the more concerns over career damage the officer felt due to deployments the more likely they scored higher on the PTSD/depression scales. The null hypothesis for the relationships between post-deployment life events and the dependent variables aggression and anxiety fails to be rejected.

<u>Social Support</u>

Unit social support. It is expected that police officers who perceive that they had high levels of social support within their military unit while deployed will experience less stress outcomes. One element of the post-deployment adjustment issues, alcohol usage ($p<.05$) produced significant results with unit social support using factor analysis and multiple regression reflected in Table 29.

An examination of the Kaiser-Meyer-Olkin measure of sampling adequacy suggested the sample was factorable (KMO=.835). As a result, a Principal Component Analysis (PCA) with a Varimax rotation of twelve variables was entered into the factor analysis producing three factors with a cumulative Eigenvalue of 83.877%. All three components contained variables with positive loadings.

Factor 1 (Support of leadership) included the support received by the commanding officer of unit, quality of leadership, superiors treating officer like a person, commanding officers were supportive of officer's efforts, and that the efforts of the officers mattered to the military while deployed. The Eigenvalue for support of leadership was 6.999 with a total variance of 58.329%. Factor 2 (Unit peer support) included the unit was like family, camaraderie in unit, members of unit understood officer, unit was trustworthy and officer could go to most others in unit for help.

Table 27: Examination of the relationship between life and family concerns while deployed and alcohol usage and PTSD/depression

Variable	Alcohol usage (Dependent variable)		
	b(SE)	β	t
Life and family concerns (Independent variable)			
Concerns over personal relationships	.769(.330)	.336**	2.327
Career damage	.946(.451)	.303**	2.098
Adjusted R^2	.253		
F test	8.268		
Variable	**PTSD/depression (Dependent variable)**		
Career damage	5.936(1.908)	.433***	3.111
Adjusted R^2	.168		
F test	9.680		

$P<.01$***
$p<.05$**

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Table 28: Examination of the relationship between life and family concerns and alcohol usage and PTSD/depression with controlling variables

Variable	Alcohol usage (Dependent variable)		
	b(SE)	β	t
Family and life concerns (Independent variable)			
Concerns over personal relationships	.581(.343)	.247*	1.692
Career damage	1.361(.500)	.437***	2.721
Number of deployments	-.599(.278)	-.292**	-2.154
Adjusted R^2	.411		
F test	7.790		
Variable	**PTSD/depression (Dependent variable)**		
Career damage	4.445(2.545)	.324*	1.746
Adjusted R^2	.213		
F test	3.634		

p<.000****
p<.01***
p<.05**
p<.10*

The Eigenvalue for unit peer support was 1.991 with a total variance of 16.594%. Factor 3 (Military appreciation and support) included the military appreciated the officer's service and the support of the military during deployment. The Eigenvalue for military appreciation and support was 1.074 with a total variance of 8.954%.

Alcohol usage

Using a straight average of the variable factor loadings, the average for each factor component was entered into a multiple regression and unit peer support (p<.01) and military appreciation and support (p<.10) were significant and then considered together were of value in the relationship with the AUDIT or alcohol usage (p<.001). Unit social support had a positive slope indicating officers who perceived higher levels of unit member social support while deployed were more likely to score higher on the AUDIT. Military appreciation and support had a negative slope indicating officers who felt they were supported by the military during deployment were less likely to score higher on the AUDIT.

In further examination of the relationship between unit social support and the dependent variables of post-deployment outcomes, the significant factors unit peer support and military appreciation/support were entered into a multivariate model while controlling for the of number of deployments and the total number of months since departed theater of last deployment. The model between the factors and alcohol usage maintained overall significance (F test = 8.507, p<.000, adjusted R^2 = .435) explaining 43 percent of the variation in the AUDIT as seen in Table 30. The significant variables in predicting alcohol usage were unit peer support (p<.000), military appreciation/support (p<.01) and number of deployments (p<.01), rejecting the null hypothesis. Unit peer support maintained a positive slope indicating officers who perceived high levels of unit member social support while being deployed were more likely to score higher

on the AUDIT. Military appreciation/support and number of deployments had a negative slop indicating that officers felt they were supported by the military during deployment were less likely to score high on the AUDIT along with those with multiple deployments. The null hypothesis for the relationships between unit social support and the dependent variables aggression, anxiety, and PTSD/depression fails to be rejected.

Post-deployment social support. It is expected that police officers who benefit from post-deployment social support by their family, community, and co-workers will experience less stress outcomes. Table 31 shows the three elements of post-deployment adjustment issues, alcohol usage (p<.01), anxiety (p<.001) and PTSD/depression (p<.001) that produced significant results with post-deployment social support using factor analysis and multiple regression.

An examination of the Kaiser-Meyer-Olkin measure of sampling adequacy suggested the sample is factorable (KMO=.693). As a result, a Principal Component Analysis (PCA) with a Varimax rotation of fifteen variables was entered into the factor analysis producing two factors with a cumulative Eigenvalue of 49.788%. Factor 1 (Social appreciation for service and comfortable discussing experiences) contained variables with all positive loadings. Factor 2 (Understanding by others of deployment experiences) contained two variables, have problems I can't discuss and people do not understand experiences, with negative loadings indicating that as the positive variables increased, the two variables decreased.

Table 29: Examination of the relationship between unit support while deployed and alcohol usage

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Variable	Alcohol usage (Dependent variable)		
	b(SE)	β	t

Unit social support (Independent variable)

Unit peer support	.1.937(.635)	.484***	3.052
Military appreciation and support	-1.400(.517)	-.430*	-2.709
Adjusted R^2	.177		
F test	5.631		

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P<.01***
p<.10*

Table 30: Examination of the relationship between unit support while deployed and alcohol usage with controlling variables

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Variable	Alcohol usage (Dependent variable)		
	b(SE)	β	t

Unit social support (Independent variable)

Unit peer support	2.178(.532)	.569****	4.091
Military appreciation and support	-1.700(.517)	-.511***	-3.288
Number of deployments	-.984(.268)	-.480***	-3.288
Adjusted R^2	.435		
F test	8.507		

_____

P<.000****
p<.01***

Social appreciation for service and comfortable discussing experiences included reception when returned home made them feel appreciated, American people made them feel at home when they returned, people made them feel proud to serve the country, among friends/relatives there is someone to go to for advice, there are people they can talk to about deployment experiences, people they work with respect they have served, supervisors understand when time off is needed, friends/relatives would lend money if needed, and when ill family/friends will help out until well. The Eigenvalue for social appreciation for service and comfortable discussing experiences was 5.643 with a total variance of 37.623%. Understanding by others of deployment experiences included carefully listened to/understood by family, among friends/relatives there is someone that makes them feel better, have problems can not discuss with family/friends, people at home do not understand deployment experiences, and there is someone who can help with daily chores if unable. The Eigenvalue for understanding by others of deployment experiences was 1.825 with a total variance of 12.165%.

Alcohol usage

Using a straight average of the variable factor loadings, the average for each factor component was entered into a multiple regression and social appreciation for service and comfortable discussing experiences ($p<.01$) was significant with alcohol usage. Social appreciation for service and comfortable discussing experiences had a negative slope indicating that officers with an increased rate of support upon their homecoming reception from deployment and the ability to have someone to communicate combat experiences at home, were less likely to score high on the AUDIT.

Anxiety

Using a straight average of the variable factor loadings, the average for each factor component was entered into a multiple regression and understanding by others of deployment experiences (p<.001) was significant with anxiety. Understanding by others of deployment experiences had a negative slope indicating that officers with increased rate of these types of support were less likely to score high on the Beck's Anxiety Inventory.

PTSD/depression

Using a straight average of the variable factor loadings, the average for each factor component was entered into a multiple regression and understanding by others of deployment experiences (p<.001) was significant with PTSD/depression. Understanding by others of deployment experiences had a negative slope indicating that officers with an increased rate of these types of support were less likely to score high on the PTSD/depression scales.

In further examination of the relationship between post-deployment social support and the dependent variables of post-deployment outcomes, the significant factors understanding by others and social appreciation/comfortable discussing experiences were entered into a multivariate model while controlling for the of number of deployments and the total number of months since departed theater of last deployment. The model between the factors and alcohol usage maintained overall significance (F test = 4.212, p<.01, adjusted R^2 = .248) explaining 25 percent of the variation in the AUDIT. The variables with relationships to alcohol usage were social appreciation/comfortable discussing experiences (p<.05) and the number of deployments (p<.10), rejecting the null hypothesis as seen in Table 32.   Social appreciation/comfortable discussing experiences maintained a negative slope indicating that officers with an increased rate

of support upon their return from deployment were less likely to score high on the AUDIT along with those with a higher number of deployments.

The model between the factors and anxiety maintained overall significance (F test = 4.500, p<.01, adjusted R^2 = .264) explaining 26 percent of the variation in the Beck's Anxiety Inventory. The significant variable, understanding by others, was the only significant variable in the model, rejecting the null hypothesis. Understanding by others had a negative slope indicating that officers with an increase rate of these types of social support were less likely to score high on the Beck's Anxiety Inventory.

The model between the factors and PTSD/depression maintained overall significance (F test = 8.647, p<.000, adjusted R^2 = .440) explaining 44 percent of the variation in the PTSD/depression scale. The significant variables in this model were understanding by others and date departed theater, rejecting the null hypothesis. Both variables had a negative slope indicating that the longer the officer had been home since deployment and the more understanding they had of their experiences the less likely they were to score higher on the PTSD/depression scales.

Table 31: Examination of the relationship between post-deployment social support while deployed and alcohol usage, anxiety and PTSD/depression

Variable	Alcohol usage (Dependent variable)		
	b(SE)	β	t
Post-deployment social support (Independent variable)			
Social appreciation for service and comfortable discussing experiences	-2.160(.756)	-.403***	-2.858
Adjusted R^2	.143		
F test	8.167		

Variable	Anxiety (Dependent variable)		
Understanding by others of deployment experiences	-8.709(2.364)	-.494****	-3.685
Adjusted R^2	.226		
F test	13.577		

Variable	PTSD/depression (Dependent variable)		
Understanding by others of deployment experiences	-14.736(3.082)	-.594****	-4.782
Adjusted R^2	.337		
F test	22.864		

$p<.001$****
$p<.01$***

Table 32: Examination of the relationship between post-deployment social support while deployed and alcohol usage, anxiety and PTSD/depression with controlling variables

Variable	Alcohol usage (Dependent variable)		
	b(SE)	β	t
Post-deployment social support (Independent variable)			
Social appreciation for service and comfortable discussing experiences	-1.784(.812)	-.351**	-2.195
Number of deployments	-.23(.331)	-.303*	-1.882
Adjusted R^2	.248		
F test	4.212		

Variable	Anxiety (Dependent variable)		
Understanding by others of deployment experiences	-9.139(2.450)	-.554***	-3.730
Adjusted R^2	.264		
F test	4.500		

Variable	PTSD/depression (Dependent variable)		
Understanding by others of deployment experiences	-14.231(3.126)	-.590****	-4.552
Date departed theater	-.136(.065)	-.293**	-2.103
Adjusted R^2	.440		
F test	8.647		

$p<.001$****
$p<.01$***

Mental health assistance. It is expected that police officers who are reluctant to seek out mental health assistance will experience more stress outcomes. Two elements of the post-deployment adjustment issues, aggression ($p<.05$) and alcohol usage ($p<.01$) produced significant results with reluctance to seek mental health assistance using factor analysis and multiple regression as shown in Table 33.

An examination of the Kaiser-Meyer-Olkin measure of sampling adequacy suggests the sample was factorable (KMO=.735). As a result, a Principal Component Analysis (PCA) with a Varimax rotation of ten variables were entered into the factor analysis producing three factors with a cumulative Eigenvalue of 73.554%. All factors contained variables with positive loadings.

Factor 1 (Stigma) included being too embarrassed to seek mental health assistance, seeking help would harm career, seen as weak if accepted assistance, mental health assistance does not work, leadership will treat them differently and members of the department might have less confidence in them. The Eigenvalue for stigma was 4.501 with a total variance of 45.007%. Factor 2 (Logistics of getting help) included not knowing where to go to get help, not having adequate transportation to receive assistance and difficulty in scheduling an appointment. The Eigenvalue for logistics for getting help was 1.997 with a total variance of 19.973%. Factor 3 (No trust) included not trusting mental health professionals. The Eigenvalue for no trust was .857 with a total variance of 8.574%.

Aggression

Using a straight average of the variable factor loadings, the average for each factor component was entered into a multiple regression and no trust ($p<.05$) had a relationship with

aggression. No trust had a positive slope indicating that officers who mistrust mental health professionals were more likely to score higher on the Buss-Perry Aggression Inventory.

Alcohol

Using a straight average of the variable factor loadings, the average for each factor component was entered into a multiple regression and stigma (p<.01) was significant in predicting alcohol use (p<.01). Stigma had a positive slope indicating officers who are too embarrassed to get assistance, believe that seeking help would harm career or seen as weak if accepted assistance and that mental health assistance does not work, leadership will treat them differently and members of the department might have less confidence in them were more likely to score higher on the AUDIT.

In further examination of the relationship between mental health assistance and the dependent variables of post-deployment outcomes, the significant factors no trust and stigma were entered into a multivariate model while controlling for the of number of deployments and the total number of months since departed theater of last deployment. The model between the factors and alcohol usage maintained overall significance (F test = 5.633, p<.01, adjusted R^2 = .322) explaining 32 percent of the variation in the AUDIT as shown in Table 34. The variables with a relationship to alcohol use were stigma and the number of deployments. Stigma maintained a positive slope while the number of deployments had a negative slope indicating the higher number of deployments experienced by the officer the less likely scored higher on the AUDIT.

The relationship between the independent variable, no trust, and aggression was not significant when controlling for the demographic variables. The null hypothesis between reluctance to seek mental health assistance and anxiety and PTSD/depression fails to be rejected.

Table 33: Examination of the relationship between the reluctance to seek mental health assistance and aggression and alcohol usage

Variable	Aggression (Dependent variable)		
	b(SE)	β	t

Reluctance to seek mental health (Independent variable)

No trust	3.417(1.625)	.309**	2.102
Adjusted R^2	.074		
F test	4.420		

Variable	Alcohol usage (Dependent variable)		

Stigma	1.489(.522)	.394***	2.852
Adjusted R^2	.182		
F test	5.785		

p<.01***
p<.05**

Table 34: Examination of the relationship between the reluctance to seek mental health assistance and alcohol usage with controlling variables

Variable	Alcohol usage (Dependent variable)		
	b(SE)	β	t

Reluctance to seek mental health (Independent variable)

Stigma	1.313(.560)	.347**	2.345
Number of deployments	-.962(.283)	-.469***	-3.406
Adjusted R^2	.322		
F test	5.633		

p<.01***
p<.05**

<u>Summary</u>

The purpose of this section was to determine if critical incident exposure and deployment risk and resiliency factors had a relationship with post-deployment issues as defined by aggression, alcohol use, anxiety, and PTSD/depression while keeping in mind the potential for Type I errors given the sample size and homogeneity nature of the sample. Significant bivariate relationships included alcohol usage and family/life concerns, post-deployment social support, and reluctance to seek mental health. These relationships were maintained at a multivariate level. A significant bivariate relationship was present between aggression and perceived threat during deployment that was not maintained at a multivariate level. In addition, there was a significant bivariate relationship between anxiety and perceived threat during deployment and post-deployment life stressors. The bivariate relationship was maintained at the multivariate level between anxiety and post-deployment life stressor but not with perceived threat during deployment.

Several models were significant at a multivariate level shown in Table 35. Aggression was significant with the factors, combat exposure, post-deployment life stressors and reluctance to seek mental health assistance. Alcohol was significant with the factors, exposure to critical incidents, pre-deployment life stressors, life/family concerns, unit social support, perceived threat during deployment, post-deployment social support, and reluctance to seek mental health assistance. Anxiety was significant with the factors, pre-life stressors, post-deployment social support, post-deployment stressors, and reluctance to seek mental health assistance. PTSD/depression was significant with factors, life/family concerns, post-deployment social support, and reluctance to seek mental health assistance.

In conclusion, this chapter explored whether or not significant bivariate relationships would be maintained at the multivariate level. While this chapter reported the results, it is necessary to understand what the results mean in a way that will be useful from a public policy perspective. Therefore, the following chapter will provide a discussion of these findings.

Table 35: A summary of the multivariate relationship between the deployment risk and resiliency factors and post-deployment adjustment outcomes experienced by deployed police officers

Variables	Aggression	Alcohol	Anxiety	PTSD/depression
Critical incidents		Family safety *Personal safety *Number of deployments		
Combat exposure	*Hostile combat missions			
Pre-deployment life stressors		*External trauma/ Personal punishment	Personal punishment	
Post-deployment life stressors	Personal violations *Number of deployments *Date departed theater	Personal violations *Number of deployments	Family substance abuse or Physical violence	

Table 35: An examination of the multivariate relationship between the deployment risk and resiliency factors and post-deployment adjustment issues experienced by deployed police officers

Variables	Aggression	Alcohol	Anxiety	PTSD/depression
Life and family concerns		Concerns over personal relationships Career damage *Number of deployments		Career damage
Unit social support		Unit peer support *Military appreciation and support *Number of deployments		
Post-deployment social support		*Social appreciation for service/comfortable discussing experiences *Number of deployments	*Understanding by others of deployment experiences	*Understanding by others of deployment experiences *Date departed theater
Mental health Assistance	No trust	Stigma *Number of deployments		

* Inverse relationship

Chapter 5

Discussion

Prior research studies regarding war trauma has mainly focused on active duty military members of the Armed Forces along with the negative physical and mental outcomes as a result of combat exposure. While prior research has made tremendous contributions to the issue of posttraumatic stress disorder of active military members, there is little research that distinguishes the stress outcomes of active duty military from members of the National Guard/Reserves. There is even less research regarding the law enforcement population serving as part of the National Guard/Reserves who are exposed to both critical incident stress as part of their employment as well as combat stress.

To this author's knowledge, this is the first study using the Deployment Risk and Resiliency Inventory measures developed by King et al. (2006) and the Critical Incident History Questionnaire developed by Weiss et al. (2001) to explore the factors that contribute to the overall positive and negative outcomes of combat and police stress. It is important to not only examine the factors that contribute to the negative outcomes of combat exposure and critical incident exposure but also the factors that result in positive changes as a result of adversity. By understanding which factors impact veteran officers, police departments can design reintegration policies to address the strength and weaknesses of returning officers.

In addition to examining the factors that contribute to the overall stress outcomes of law enforcement veterans, this study also addresses the reluctance by law enforcement officers to seek out mental health assistance and how it relates to post-deployment stress outcomes. Consideration of mental health assistance is important since several studies show a substantial number of active duty military members who meet the criteria for a mental disorder do not seek

out mental health assistance due to the stigma attached to receiving mental health assistance (Hoge et al., 2004; Stecker et al., 2007).

This study revealed a number of relationships at the multivariate level resulting in the analysis of the following relationships:

(1) police officers who reported higher levels of exposure to critical incidents involving personal safety were more likely to report lower levels of alcohol usage while events concerning family safety were more likely to report higher rates of alcohol usage; police officers who reported higher levels of engagement in hostile combat missions during deployment were less likely to report higher levels of aggression;

(2) police officers who reported higher pre-deployment life stressors involving the death of someone close to them and physical injury/abuse were more likely to report higher levels of alcohol usage while pre-deployment exposure to external trauma were less likely to report higher levels of alcohol usage. In addition, police officers who reported a higher number of post-deployment life stressors involving the death of someone close to them and personal violations were more likely to report higher levels of aggression and alcohol use. Police officers who reported higher levels of anxiety also reported more experiences regarding family member illness, divorce, and witnessing violence post-deployment.

(3) police officers who reported higher levels of concern regarding their personal relationships while deployed were more likely to report higher levels of alcohol usage while officers concerned about their careers were more likely to report higher levels of alcohol usage and higher levels of PTSD/depression.

(4) police officers who reported higher levels of military appreciation and support during deployment were more likely to report lower levels of alcohol usage while officers who believed they were better supported by their unit peers were more likely to report higher usage of alcohol. In addition, police officers who benefited from higher levels of social support post-deployment in aspects as feeling appreciated and understood by others regarding their deployment experiences were less likely to report higher levels of alcohol usage, feelings of anxiety or PTSD/depression; and

(5) police officers who reported higher levels of mistrust of mental health personnel were more likely to score higher on aggression as well of officers who expressed a higher rate of concern over the stigma of asking for mental health assistance were more likely to report higher usage of alcohol.

As previously mentioned, multivariate models for deployment preparedness and exposure to the consequences of battle had no variables that were significant with aggression, anxiety, alcohol use or PTSD/depression. Perceived deployment threats had a low KMO value and will not be included in this discussion. Five of the nine DRRI scales used in this study along with the Critical Incident History Questionnaire and the mental health measure contained factors significant with one or more of the elements, aggression, anxiety, alcohol use and PTSD/depression at a multivariate level of analysis. Six of the DRRI scales, the Critical Incident History Questionnaire and mental health scale had factors significant with alcohol use.

After an examination of the models that were significant, a trend emerged regarding the exposure to stressful events and post-deployment adjustment outcomes within this sample population. Family related stressful events where there was little control, such as death of loved ones, relationships discord, and healthcare concerns, proved to be important factors in

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contributing to the higher rates of post-deployment adjustment outcomes. In contrast, exposure to job related critical incidents or military combat events had an inverse relationship to post-deployment adjustment outcomes. For example, respondents who reported higher levels of exposure to job related or military stressful events had lower levels of alcohol use and aggression. Certainly, this does not mean that job stress and military combat experiences are not important matters for consideration in stress outcomes. In fact, this relationship hints that other factors may create an element of resiliency or desensitization among this population. Further explanations for these findings are discussed in the individual subsections for the independent variables.

Other trends emerged regarding the demographic variables, age of the officer, number of years in law enforcement, number of deployments, and the date departed combat theater. The age of the officer and the number of years in law enforcement had no relationship with post-deployment stress outcomes while the number of deployments along with the date departed theater did have a relationship with post-deployment stress outcomes.

The number of deployments was a significant variable in every model with the dependent variable alcohol usage except for combat exposure and pre-deployment life stressors where there was no significant relationship. Number of deployments had a negative relationship with alcohol usage meaning multiple deployments by veteran officer predicted less alcohol usage. This finding is not only counterintuitive, but is contradictory to most research findings where repeated exposure to combat through multiple deployments places veterans at more risk for alcohol-related problems (Jacobsen et al., 2008). There are several plausible explanations for this finding. First, the small sample size could contribute to this finding. Secondly, it is possible the respondents who reported multiple deployments did not deploy to a combat setting on each

deployment, thus impacting their degree of stress exposure. Thirdly, it is conceivable that the greater number of deployments the respondents reported; the more accustomed they got to the environment and conditions in combat theater. Finally, the respondents in this study reported high levels of post-deployment social support. It is possible that social support mitigated the stress impact of multiple deployments.

The date departed theater was calculated in this study by adding the number of months since arrival home reported by the respondents to the time the survey was returned to the researcher. The date departed combat theater was a significant variable with aggression in the post-deployment life stressors model with the factor death and personal violations. In addition, date departed combat theater was significant with PTSD/depression in the post-deployment social support model with the factor understanding by others of deployment experiences. In both models, the date departed theater had a negative relationship with both dependent variables meaning the longer the respondent had been home from deployment, the lower levels of aggression and PTSD/depression.

In both models, social support plays a key role in the explanation for these findings. Post-life events such as experiencing the death of someone close or being emotionally mistreated are stressful events. It is proposed that the longer the veteran has been home from military deployment, the more time they have had to readjust to their surroundings as well as to their social support network. As previously mentioned, the respondents in this study reported high levels of social support post-deployment. The level of social support mitigates the level of aggression experienced by the respondents as a result of post-deployment life events.

The finding that the higher level of understanding of their deployment experiences by others is significant to lower levels of PTSD/depression while controlling for the date departed

theater is logical. Although there is considerable research regarding the delayed onset of PTSD symptoms after return from deployment (Wolfe et al., 1999; Milliken et al., 2007), there are also several studies that support the premise that social support is significant to the development, severity, and maintenance of PTSD (Andrews, Brewin, & Rose, 2003; Andrykowsky & Cordova, 1998; Barrett & Mizes, 1988; Beiser, Turner & Ganesan, 1989; Cook & Bickman, 1990; Jankowski et al., 2004; Kimerling & Calhoun, 1994; Schnurr, Lunney & Sengupta, 2004 and Solomon, Waysman & Mikulincer, 1990). It is certainly plausible that the longer the police officer veteran is home from deployment in addition to the high levels of understanding by their support system would lead to lower levels of PTSD symptoms.

<div align="center">Critical Incidents and Combat Exposure</div>

The study revealed that threats toward loved ones as retaliation for police work along with witnessing an accidental death of an officer had a relationship with higher levels of alcohol use. In contrast, issues regarding work personal safety such as high speed chases and being threatened with a weapon had a negative relationship with alcohol use, meaning the more exposure to such incidents while policing meant lower levels of alcohol use. A key element in both findings centers on the issue of control. In the first example, the police officers have little control over threats toward family members or accidental officer deaths while work related threats involve more control by the officer. Control over a situation is paramount in policing and reinforced through police training.

While the relationship of more exposure to incidents involving danger and less alcohol use seem counterintuitive, several studies provide explanations for such findings (Cullen et al., 1983; Lawrence 1978; & Wenz, 1979). The studies show that police officers believe their job is dangerous; however, the source of stress does not come from the inherent dangers of the job.

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The source of the stress stems from the degree of control or mastery they have over a situation. The more control or mastery they have, the less stress they feel. In addition to the level of mastery and control, police officers have reported low levels of death anxiety even though their jobs are relatively dangerous (Wenz, 1979). In this study, only four (9.1%) police officers thought they would not survive during their military deployment, 93.2 % reported no fear of dying and 79.5% reported that being scared was not particularly bothersome during the past month of taking the survey. These findings support the relationship between danger and the degree of control and mastery of a situation. It appears that although police officers find their jobs inherently dangerous, they enjoy mastering the dangers.

The sample population in this study also reported the more exposure to hostile combat missions such as receiving incoming fire and being attacked by terrorist/civilians during combat missions, had lower levels of aggression. Again, this finding is not surprising due to the previous discussion regarding police critical incidents and the level of control and mastery of a situation. In fact, for this particular group of individuals, combat experiences have allowed them to use police tactics practiced previously in training environments and use them in real life during combat. As a result, many officers reported an increased level of stress tolerance and confidence in reacting to stressful situations due to their combat experiences (IACP, 2009). This increase in confidence and stress tolerance can be an asset for the police departments if the police veteran can share their knowledge with other non-deployed officers.

<center>Life Events</center>

Pre-deployment and post-deployment life stressors were included in this study for the purpose of assessing the degree of exposure to trauma that is unrelated to work or combat and how these types of stressors impact post-deployment stress outcomes. Specifically, pre-

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deployment life stressors can contribute to pre-existing conditions which make an individual more vulnerable to post-deployment stress outcomes (King et al., 1996). Although this study did not address the relationship between combat exposure and pre-deployment life events in predicting post-deployment stress outcomes, other studies have shown significant relationships between the variables and the importance in examining stress outcomes, specifically PTSD, from a multivariate approach (Bremer et al., 1993; Green et al., 1990; Zaidi & Foy, 1994; King et al., 1996).

In this study, experiencing the death of someone close, being physically punished by a caregiver, and being injured before deployment, were significant in alcohol use and anxiety. These findings are consistent with that of previous researchers who have found a relationship between traumatic events, especially uncontrollable events and alcohol use (Volpicelli, 1987; Mcfarlane, 1998; Boscarino, 1986; Dengerink, H.A. & Fagan, 1978; Brailey et al., 2007; Stewart, 1996).

In contrast, getting divorced or being left by a significant other, unwanted sexual contact and witnessing a violent assault or death had a lower alcohol use relationship. This finding is counterintuitive since these events are stressful for most individuals. One explanation for this finding is responding to violent assaults or homicides are part of a police officer's job and being exposed to such incidents pre-deployment is to be expected as compared to other occupations. The particular scale used in this study does not differentiate between experiencing the event before the respondent became law enforcement officers or while they were police officers before deployment. Both possibilities could contribute to the negative relationship of this factor with the dependent variable alcohol use.

In addressing pre-deployment divorce, the survey question is written in such a way that it is not possible to determine how long ago the respondent experienced the divorce. It is plausible the respondents who reported getting divorced are currently in a new, satisfying relationship during the same pre-deployment time frame captured in the survey when they experienced the divorce. As a result, it is possible that the question is worded in such a way as that does not capture the true emotional responses involved in a divorce or being left by a significant other.

Post-deployment life stressors involving death and personal violations such as being robbed or burglarized and emotionally mistreated, showed higher levels of aggression and alcohol use. Although there was not a significant relationship with PTSD/depression, it is worth noting that research shows a link between the hyperarousal cluster of PTSD and general aggression and the use of alcohol to self-medicate in efforts to reduce distress (Taft et al., 2007). In this study, 64% of the respondents reported an inability to relax, and five of the nine questions in the 17-item PTSD checklist with a response rate of over 50% were in the hyperarousal cluster. These findings are consistent with qualitative data gathered where returning police veterans notice their hypersensitivity to sudden, loud noises (Gavin & Purcell, 2007; IACP, 2009).

Post-deployment life stressors involving family, illness, healthcare concerns, and divorce had a relationship with higher levels of anxiety. These findings are logical and theoretically plausible. The events in this factor create a sense of loss of control involving family. Post-deployment divorce or being left by a significant other implies the separation is more recent than pre-deployment divorce.

<p align="center">Life and Family Concerns</p>

The sample population in this study reported high levels of concern regarding their career and family while deployed. Concerns their career will be damaged as a result of being overseas

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for an extended period of time and concern over personal relationships were factors in higher levels of alcohol use. In addition, concerns their career will be damaged as a result of deployments was also a factor in higher levels PTSD/depression. These findings are consistent with that of previous researchers who have found that members of the National Guard/Reserves report higher levels of concern regarding life and family than active military members. These concerns have strong relationships with posttraumatic stress symptomatology and other stress outcomes such as an increase in alcohol use (Jacobsen et al., 2008; Vogt et al., 2008; Stretch, Marlowe & Wright, 1996; Wolfe et al., 1999).

Members of the National Guard/Reserves may be less equipped to deal with the separation from family and work environments in contrast to active duty military members where long family separations and deployments are expected. Consistent with these findings, during focus groups conducted by IACP in 2009, police veterans expressed an increased level of frustration while they were deployed in handling family issues. The root of the frustration stemmed from the inability to control or take an active, physical role in solving the problem due to the distance and communication limitations. In addition, many of the police veterans felt an added burden of trying to solve family issues while fighting in a combat zone. Upon returning from deployment, many officers experienced challenges in determining how they fit back into their family unit and which family responsibilities were to be assumed by the veteran officer (Garvin & Purcell, 2007).

In addition to family concerns, the National Guard/Reserves have full time civilian jobs and every deployment means putting their careers on hold. The concerns about missing out on promotions or opportunities for specialty positions are of particular significance for law enforcement officers. Law enforcement agencies are similar to a pyramid in structure where

there are fewer positions at the upper levels of management making promotions through the ranks very competitive. Long absences from the police department make it difficult for the deployed officer to meet the criteria for assessment in the promotional process or for consideration regarding a specialty position.

<u>Social Support</u>

The sample population reported high levels of social support within their unit while deployed as well as by their families in a post-deployment environment. Being supported and appreciated by the military during deployment was a factor in lower levels of alcohol use. In addition, post-deployment social support factors regarding the understanding by others of their deployment experiences as well as the appreciation from the American public regarding their military service led to lower levels of alcohol use, anxiety and PTSD. These findings are consistent with that of previous researchers who have found a positive relationship between the amount of social support and the well-being of individuals who are exposed to acute stress as well as the lack of social support as being a predictor of the development and maintenance of PTSD (Andrews, Brewin, & Rose, 2003; Andrykowsky & Cordova, 1998; Barrett & Mizes, 1988; Beiser, Turner & Ganesan, 1989; Cook & Bickman, 1990; Jankowski et al., 2004; Kimerling & Calhoun, 1994; Schnurr, Lunney & Sengupts, 2004; Solomon, Waysman & Mikulincer, 1990).

Contradictory to the positive link between social support and stress outcomes, one factor, unit peer support, had an inverse relationship with alcohol use. The study revealed that higher reported support by peers in their unit during deployment had a significant relationship with higher scores on the AUDIT portion of the survey. This relationship seems to be counterintuitive since higher levels of social support, especially by peers during deployment, should indicate less

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stress outcomes to include less alcohol use. One explanation for this finding is that social drinking is very much a part of the police culture. Getting together after work for a shift party is a source of bonding between officers and is common practice which builds camaraderie within the police culture (Ellison, 2004; Kraft et al., 1993). It is not surprising in this study with the high levels of unit peer support reported, this method of bonding assimilates into the military culture as well for this particular group.

<center>Mental Health Assistance</center>

This study included an assessment concerning the beliefs of mental health assistance following military deployment and whether or not it is an important factor in post-deployment adjustment outcomes. Thirteen police officers in the sample population (29.5%) trusted mental health professionals while nineteen (43.2%) did not trust mental health professionals and twelve (27.3%) were neutral in their response. Results of the study show the higher levels of mistrust of mental health professionals were factors in higher levels of aggression.

There are several plausible explanations for law enforcement's mistrust of mental health professionals and the relationship to aggression. Research has shown the professions of mental health and law enforcement draw from two opposite personality and temperaments (Buchanan & Hankins, 1986). Mental health professionals want to understand the motivations and feelings while law enforcement professionals are more interested in the concreteness of a situation. The law enforcement culture also tends to be closed and reluctant to let outsiders into their community. Law enforcement job experiences are very different from other occupations and most law enforcement officers do not believe that outsiders will understand those experiences especially the mental health profession. In addition, mental health professionals historically are responsible for fitness for duty examinations of police officer. A problematic evaluation by a

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mental health professional may lead to being reassigned to administrative duties or other assignments that is unwanted by the officers. For these reasons, law enforcement does not trust the mental health profession and the benefits from counseling are not recognized. Counseling or debriefings allow for the venting and discussion of traumatic experiences promoting the processing of the emotions that accompany such events. If law enforcement officers are not receptive to counseling, suppressed emotions are not recognized potentially leading to aggressive actions supported by the findings of this study.

Along with the mistrust of mental health professionals, almost half of the respondents reported that seeking out mental health assistance may harm their career and that members of the police department might have less confidence in their abilities if they sought out treatment. Findings in this study show the higher levels of the concern regarding the stigma attached to receiving mental health assistance and higher levels of alcohol use. These findings are consistent with previous research regarding military members and police officers where stigma was the primary concern to receiving mental health care particularly among those with positive mental disorders (Stecker et al., 2007; Hogue et al., 2004; IACP, 2009; Kline et al., 2010). The element of stigma highlights the concern of being seen as weak among peers and superiors for receiving mental health assistance and the conflict police officers have with society's perception of police being problem solvers and not having problems of their own.

When ranking their preference of where they would seek out mental health assistance, private psychologist/private social worker was ranked first, personal clergy second, and third was the police chaplain. The least preferred were the last two rankings including police department services offered through the Employee Assistance Program and police department psychologist/social worker. Based on the preferences and the lack of trust of mental health

professionals, there seems to be a concern regarding the confidentiality in seeking out mental health assistance. The confidentiality concern is consistent with IACP's (2009) findings where several officers expressed a level of mistrust regarding their agency's Employee Assistance Program.

Policy Implications

September 11, 2001, created a paradigm shift in many aspects of policing and some of the new strategies for fighting terrorism required the military activation of sworn and unsworn law enforcement personnel. Combating terrorism will continue to involve such deployments in efforts to support the terrorism strategies and policies of the United States. The initial military activation for law enforcement personnel in support of Operation Iraqi Freedom and Operation Enduring Freedom came quickly with little advanced notice. As a result, police departments were not equipped to deal with the activations of their personnel. During the last few years, police departments have developed strategies and policies to assist police officers and their families with military deployments and the reintegration process. Even with policies and strategies in place, there are still opportunities for growth as further research is conducted in exploring the post-deployment outcomes of police officer veterans.

In this study, the findings report significant concerns by veteran police officers over their family and career as a result of their military activations. An explanation previously provided for such findings include the perceived loss of control over situations that involve family and careers during their deployment. There are several policies or strategies that could be implemented to ease these concerns. First, a briefing before deployment outlining the resources provided by the police department throughout the deployment process would be invaluable. By offering this type of briefing to police officers and their families, both would know what to expect from the

police department. It would be even more useful if the briefing was presented by a peer who has already served in a military deployment. This would provide an opportunity for police officers and family members to ask questions from a trusted source that has previously experienced a military deployment.

Career concerns could be addressed in this briefing by discussing promotional opportunities or specialty positions that may become available during deployments and how the department will include the officers in those processes. In addition, it is important that officer understands what type of reintegration plans the police department will utilize upon his return. It would be advantageous for officers to know that as part of returning to the department after deployment, departmental policy would dictate a transition period, refresher training provided, and education on combat stress. If this information is provided before deployment, police officer veterans may not feel signaled out or damaged as a result of combat when they return to the department.

Although this study did not obtain data from family members, their inclusion in pre-deployment matters is important as well. By including the family members, there is a shared sense of commitment by the police department in assisting the officer and their families through the deployment process. In addition, during the pre-deployment briefing, a police department liaison could be assigned to the family for the purpose of assisting the family while the officer is deployed. Since there are little resources available to National Guard/Reserves as it related to family readiness issues as compared to active military units, it may provide a level of comfort to the activated police officer that resources will be available to their family while they are deployed.

During deployment, to alleviate concerns by the deployed police officers, the police department could continue to maintain contact with officers while activated. Communication may include regular emails from co-workers, departmental newsletters, or various newsworthy articles about the community. It is imperative that deployed police officers are also included in any promotional processes that may be taking place in his or her absence addressing the concern over career damage discovered in this study.

There are several reintegration suggestions being offered in the post-deployment environment as a result of the findings of this study. The results of the post-deployment social support measure and findings related to combat exposure and critical incidents, shed some insight into strategies that may be useful for this population. A large percentage of the respondents reported high levels of post-deployment social support to include acknowledgement of their military service as being appreciated by police officer veterans. As a result, it may be useful for the police departments to recognize the police officers' service to their country through an honor wall at the police department, a special pin worn on their uniform reflecting their military service, or by some other means.

The departmental policies aiding in the transition from combat to urban policing can be addressed as previously mentioned as part of the pre-deployment briefing, however, there should be some flexibility in the plan. The amount of time needed as part of the transition from combat to policing may vary. Several of the respondents in the study by IACP (2009) indicated the amount of time needed before returning to policing depends on the individual. As one of the officers stated, "There really is no magic number – it depends on the veteran, his age, maturity, the degree of close personal combat experienced, his/her family situation. There are a multitude of factors to consider" (IACP, 2009, p. 28). Keeping this in mind, it may be useful for police

department leadership to encourage the officers to take as much time as needed before returning to work. This flexibility would enable police departments to individualize transition periods depending on the officer's personal situation and circumstances.

In this study, the events that were related to combat and critical incidents had an inverse relationship with aggression and alcohol use. Several police officer veterans in the IACP study (2009), stated their military experiences improved their abilities in assessing a situation and making decisions quickly enabling them to respond to police incidents appropriately. One officer stated, "The military prepared me to be very organized, so when I am on a traumatic scene I am very calm about those things. In just a few seconds, I figure it out and start to manage the crisis. That is a major advantage of the military. Those that have been in major crises and have survived them handle them better (IACP, 2009, p. 36)." Although many officers cite that skills used during combat have transferred to domestic policing, there are still some challenges in adjusting from an enemy environment to a community policing environment. Specifically, the differences in the use of force thresholds and basic operating procedures such as searches and detainments used while in combat versus in urban policing take time for adjustment. "For a short time upon return (estimates of two to six months), veterans react, mentally and/or physically, to the environmental indicators of danger they encountered in combat environments (IACP, 2009, p. 33)."

To assist police officer veterans in transitioning, a post-deployment training plan is essential. Reviewing updated policies and procedures and becoming reacquainted with equipment used in an urban policing environment is crucial. As part of the post-deployment training program, the returning police officer veterans could ride with a Field Training Officer (FTO) to re-familiarize themselves with their locality and assist in relearning responses

appropriate for urban policing. The FTO should be a peer veteran or an officer with the same number of years on the job as the returning veteran. It may appear condescending or offensive to be trained by an FTO with less time on the job than the returning veterans. At some point, the police department might consider using the skills police officer veterans have mastered in combat in a specialty position, such as firearms instructor or SWAT team leader that would benefit the department.

In this study, there were serious concerns by the respondents in trusting mental health professionals and also the stigma in receiving mental health assistance. As part of the post-deployment training, education regarding the psychological and biological responses of combat exposure could be presented by mental health professionals as well as police peers who have experienced combat. By using an educational approach, police officers may be more willing to receive this information than from a mandatory meeting with a psychologist which could be misinterpreted as a fit for duty examination. In addition, it would be useful to provide the information to family members as well. Oftentimes it is the family members who are the first to notice changes in their returning veteran. If the family is aware of some of the biological and psychological responses to combat, it may make the reintegration of the returning veteran into the family unit less problematic.

It is difficult to overcome the long standing concerns by law enforcement personnel about the stigma that is attached to seeking out mental health assistance. Even if police departments encouraged outside assistance from a mental health professional with a voucher system to guarantee confidentiality, there is still the trust issue regarding mental health professionals.

Limitations and Future Directions

There are several limitations worth noting in this study, such as small sample size, generalizability issues and social desirability of police officer responses. Along with the small sample size, the respondents in this study were limited to a small geographic region. Furthermore, the cross sectional design of the study only captured the respondents' feelings and level of exposure at the time they completed the survey. As with any level of emotions or feelings, they can be dynamic in nature and not static over time. Finally, the models in this study have a large amount of unexplained variance and as a result, the findings should be considered with caution.

The results of this study provide a foundation for future studies in examining risk and resiliency factors that may be unique in predicting post-deployment outcomes for those in law enforcement who served as part of the National Guard/Reserves. Although the present study shows these constructs have limited potential in predicting aggression, anxiety and PTSD/depression, more exhaustive studies could be advantageous to our understanding of these factors and relationships especially at a multivariate level.

In addition, future studies should consider utilizing qualitative methods, such as asking police officers open-ended questions to gain a better understanding of their experiences as law enforcement officers serving in combat. It would be beneficial to hear directly from police officer veterans in their own words the challenges and potential skill sets that contributed or hindered their reintegration from combat to urban policing. It may also be useful to obtain qualitative information from family members since this study revealed significant relationships between family issues and post-deployment outcomes for police office veterans. A different

perspective offered from a family members viewpoint, may provide valuable information regarding the reintegration process.

Finally, the descriptive data in this exploratory study yielded interesting findings. Hopefully, police chiefs and administrative staff members of police departments will be encouraged to participate in further studies of this nature. It is only through the cooperation of the command staff of police departments that the most effective policies and procedures regarding the reintegration of law enforcement officers can be formulated through research efforts.

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Appendix A

INFORMATION SHEET FOR PARTICIPATION IN THE
RE-INTEGRATION STUDY

Purpose of Project:

I understand that the purpose of this study is to provide my thoughts and feelings about combat and police experiences as it relates to my return to urban policing after military deployment.

Procedures:

The survey given to me includes questions about my thoughts and feelings about combat and police experiences and overall post-deployment re-integration issues. It will take about 45 minutes to complete and I may refuse to answer any questions. My responses will not be shared with anyone else outside the research study team.

Confidentiality:

The answers I give will be available to the principal researcher and the doctoral student only. I will be given a code in place of my name and all information collected will be stored in locked file cabinet or in secured computerized files that only the two researchers will have access to. These files will be deleted one year after the completion of the research. Responses will not be made available to anyone outside of the two member research team and Virginia Commonwealth University's Office of Research Subjects Protection. My individual responses will NOT impact my employment with my police department in any way.

What we find from this study may be presented at meetings or published papers, but my name will not be used in these presentations or papers. All findings will be presented in aggregate and not reported based on individual police departments' results.

Risk:

There is minimal risk involved in participating in this study. In answering the survey questions, I may provide information about my feelings regarding my exposure to combat or critical incidents. There is a chance that survey questions may cause some distress if I am particularly anxious or sensitive about some of the issues surrounding such events. I understand that I can refuse to answer any questions and may stop completing the survey at any time during the administration. No other risks are anticipated.

Benefits and
Freedom to withdraw: The results of this study could lead to a better
understanding of the needs and concerns of officers as they
return from combat and re-integrate into urban policing.
As a result, the outcomes may guide strategies for
designing programs or improving current re-integration
policies in law enforcement agencies. I may elect not to
participate in the survey without any impact on my
employment with the police department. I understand I may
ask questions about the survey at any time by calling Paula
Barrows at (757) 544-6520 or Dr. Janet R. Hutchinson at
(804) 828-8041

Contact Information
Of Prinicipal Investigator: Janet R. Hutchinson, Ph.D.
VCU- 915 W. Franklin Street
Richmond, VA 23284
(804)-828-8041

Contact information   Office for Research Subjects Protection, Virginia
for questions about   Commonwealth
your rights as a   University, 800 Leigh Street, Suite 111,
participant in   P. O. Box 980568,
this study: Richmond,VA 23298
(804) 828-0868

Resources: Military One Source
1-800-342-9647   24 hours/7 days a week service
www.militaryonesource.com

Book: Down Range to Iraq and Back
Authors: B.C. Cantrell and Chuck Dean
ISBN: 1-933150-06-8

Book: Courage after Fire
Authors: K. Armstrong, S. Best, and P. Domenici
ISBN: 1-56975-513-2

Completion of the survey indicates your consent to participate in this study.

Appendix B

Questionnaire

Section I pertains to events that occurred prior to your military deployment. You will be asked about experiences in your childhood, adulthood, as well experiences during your career as a law enforcement officer.

<u>Section I</u>

<u>PRE-DEPLOYMENT LIFE EVENTS</u>
The statements below refer to events you may have experienced BEFORE YOU WERE DEPLOYED. Please circle "yes" or "no" for each item below.

Before I was deployed, I experienced . . .

1. . . . a natural disaster (for example, a flood or hurricane, (a fire, or an accident in which I was hurt or my property was damaged.	Yes	No
2. . . . exposure to a toxic substance (such as dangerous chemicals, radiation).	Yes	No
3. . . . combat or exposure to a war zone (in the military or as a civilian).	Yes	No
4. . . . the mental illness (for example, clinical depression, anxiety disorder), or life-threatening physical illness (for example, cancer, or heart disease) of someone close to me.	Yes	No
5. . . . a parent who had problems with drugs or alcohol.	Yes	No
6. . . . the death of someone close to me.	Yes	No

Before I was deployed, I had . . .

7. . . . been through a divorce or been left by a partner or significant other.	Yes	No
8. . . . witnessed someone being assaulted or violently killed.	Yes	No
9. . . . been robbed or had my home broken into.	Yes	No

Before I was deployed, I had . . .

10. . . . lost my job.		Yes	No
11. . . . been emotionally mistreated (for example, shamed, embarrassed, ignored, or repeatedly told I was no good).		Yes	No
12. . . . seen or heard physical fighting between my parents or caregivers.		Yes	No
13. . . . been physically punished by a parent or primary caregiver.		Yes	No
14. . . . been physically injured by another person (for example, hit, kicked, beaten up).		Yes	No
14a. . . . [IF YES] did this occur (circle all that apply):	in childhood	in adulthood	
15. . . . experienced unwanted sexual activity as a result of force, threat of harm, or manipulation.		Yes	No
15a. . . . [IF YES] did this occur (circle all that apply):	in childhood	in adulthood	

Continue to the next page.

EXPOSURE TO CRITICAL INCIDENTS AS A POLICE OFFICER

INSTRUCTIONS: Below is a list of critical incidents to which police officers may be exposed at some time during their career. Please read each item and in the left-hand column, give your best estimate of the number of times that you have personally experienced that incident IN THE LINE OF DUTY. Next, in the right-hand column, please give your opinion about how difficult it would be for police officers to cope with each type of incident, NOT how difficult you think it would be for you personally. Please make an estimate for each incident, even if you have never experienced it.

Please indicate how many times you have experienced each incident in the line of duty by writing on the line the number if it is between 0 and 9, OR if it is more than 10, by circling the appropriate numeric range.	In your opinion, how difficult would it be for police officers to cope with this type of incident?

				Not at All	A little bit	Moder- ately	Quite a bit	Extre- mely

1. Being seriously injured intentionally.

   Write in if
    from 0-9 _____ 10-20 21-50 51+   0   1   2   3   4

2. Being seriously injured accidently.

   Write in if
    from 0-9 _____ 10-20 21-50 51+   0   1   2   3   4

3. Being present when a fellow officer was killed intentionally.

   Write in if
    from 0-9 _____ 10-20 21-50 51+   0   1   2   3   4

4. Being present when a fellow officer was seriously injured intentionally.

   Write in if
    from 0-9 _____ 10-20 21-50 51+   0   1   2   3   4

					Not at All	A little bit	Moder-ately	Quite a bit	Extre-mely

Please indicate how many times you have experienced each incident in the line of duty by writing on the line the number if it is between 0 and 9, OR if it is more than 10, by circling the appropriate numeric range.

In your opinion, how difficult would it be for police officers to cope with this type of incident?

	Not at All	A little bit	Moder-ately	Quite a bit	Extre-mely

5. Being present when a fellow officer was seriously injured accidentally.

Write in if
from 0-9 _____ 10-20 21-50 51+   0   1   2   3   4

6. Being present when a fellow officer was killed accidentally.

Write in if
from 0-9 _____ 10-20 21-50 51+   0   1   2   3   4

7. Being seriously beaten.

Write in if
from 0-9 _____ 10-20 21-50 51+   0   1   2   3   4

8. Being taken hostage.

Write in if
from 0-9 _____ 10-20 21-50 51+   0   1   2   3   4

9. Receiving serious threats towards your loved ones as retaliation for your police work.

Write in if
from 0-9 _____ 10-20 21-50 51+   0   1   2   3   4

10. Being shot at.

Write in if
from 0-9 _____ 10-20 21-50 51+   0   1   2   3   4

11. Being threatened with a gun.

Write in if
from 0-9 _____ 10-20 21-50 51+   0   1   2   3   4

	Please indicate how many times you have experienced each incident in the line of duty by writing on the line the number if it is between 0 and 9, OR if it is more than 10, by circling the appropriate numeric range.	In your opinion, how difficult would it be for police officers to cope with this type of incident?

		Not at All	**A little bit**	**Moder- ately**	**Quite a bit**	**Extre- mely**

12. Being threatened with a knife or other weapon.

    Write in if
    from 0-9 _____ 10-20 21-50 51+   0   1   2   3   4

13. Being trapped in a potentially life-threatening
    situation.

    Write in if
    from 0-9 _____ 10-20 21-50 51+   0   1   2   3   4

14. Being exposed to serious risk of AIDS or other
    life-threatening diseases.

    Write in if
    from 0-9 _____ 10-20 21-50 51+   0   1   2   3   4

15. Having your life threatened by an aggressive
    and dangerous animal.

    Write in if
    from 0-9 _____ 10-20 21-50 51+   0   1   2   3   4

16. Being exposed to a life-threatening toxic
    substance.

    Write in if
    from 0-9 _____ 10-20 21-50 51+   0   1   2   3   4

17. Having to kill or seriously injure someone in
    the line of duty.

    Write in if
    from 0-9 _____ 10-20 21-50 51+   0   1   2   3   4

.

				Not at All	A little bit	Moder- ately	Quite a bit	Extre- mely

18. Having to shoot at someone in the line of duty, without injuring them.

Write in if
from 0-9 _____ 10-20 21-50 51+

				0	1	2	3	4

19. Making a mistake that lead to the serious injury or death of a fellow officer.

Write in if
from 0-9 _____ 10-20 21-50 51+

				0	1	2	3	4

20. Making a mistake that lead to the serious injury or death of a bystander.

Write in if
from 0-9 _____ 10-20 21-50 51+

				0	1	2	3	4

21. Being involved in a high-speed chase where lives were in danger.

Write in if
from 0-9 _____ 10-20 21-50 51+

				0	1	2	3	4

22. Seeing someone dying.

Write in if
from 0-9 _____ 10-20 21-50 51+

				0	1	2	3	4

23. Encountering the body of someone recently dead.

Write in if
from 0-9 _____ 10-20 21-50 51+

				0	1	2	3	4

24. Encountering a decaying corpse.

Write in if
from 0-9 _____ 10-20 21-50 51+

				0	1	2	3	4

	Please indicate how many times you have experienced each incident in the line of duty by writing on the line the number if it is between 0 and 9, OR if it is more than 10, by circling the appropriate numeric range.	In your opinion, how difficult would it be for police officers to cope with this type of incident?

	Not at All	A little bit	Moder- ately	Quite a bit	Extre- mely

25. Encountering a mutilated body or human remains.

Write in if
from 0-9 _____ 10-20 21-50 51+

	Not at All	A little bit	Moder- ately	Quite a bit	Extre- mely
	0	1	2	3	4

26. Making a death notification.

Write in if
from 0-9 _____ 10-20 21-50 51+

	0	1	2	3	4

27. Encountering a child who has been sexually assaulted.

Write in if
from 0-9 _____ 10-20 21-50 51+

	0	1	2	3	4

28. Encountering a child who has been badly beaten.

Write in if
from 0-9 _____ 10-20 21-50 51+

	0	1	2	3	4

29. Encountering an adult who had been sexually assaulted.

Write in if
from 0-9 _____ 10-20 21-50 51+

	0	1	2	3	4

30. Encountering an adult who had been badly beaten.

Write in if
from 0-9 _____ 10-20 21-50 51+

	0	1	2	3	4

Please indicate how many times you have experienced each incident IN THE LINE OF DUTY IN THE PAST 6 MONTHS by writing the number in the box. If you have not experienced a particular incident, please write 0.

In your opinion, how difficult would it be for police officers to cope with this type of incident?

	Not at All	A little bit	Moder- ately	Quite a bit	Extre- mely

31. Encountering a child who was severely neglected or in dire need of medical attention because of neglect.

Write in if
from 0-9 _____ 10-20 21-50 51+   0   1   2   3   4

32. Seeing animals that had been severely neglected, intentionally injured, or killed.

Write in if
from 0-9 _____ 10-20 21-50 51+   0   1   2   3   4

33. Having your life endangered in a large-scale man-made disaster.

Write in if
from 0-9 _____ 10-20 21-50 51+   0   1   2   3   4

34. Having your life endangered in a large-scale natural disaster.

Write in if
from 0-9 _____ 10-20 21-50 51+   0   1   2   3   4

This portion of the survey contains questions regarding your experiences during your military deployment. No one has had exactly the same experiences that you have had, so your input is very important. There are no right or wrong answers. Be sure to read every statement and circle your response.

TRAINING AND DEPLOYMENT PREPARATION

Below are several statements about how well prepared you were by the military for your deployment. Please describe how much you agree or disagree with each statement by circling the number that best fits your answer.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
1. I had all the supplies and equipment needed to get my job done.	1	2	3	4	5
2. The equipment I was given functioned the way it was supposed to.	1	2	3	4	5
3. I received adequate training on how to use my equipment.	1	2	3	4	5
4. I knew how to treat animal bites, insect stings, or allergic reactions to plants in the region.	1	2	3	4	5
5. I received adequate training on what to do in case of a nuclear, biological, or chemical (NBC) attack.	1	2	3	4	5
6. I had enough gear to protect myself in case of a nuclear, biological, or chemical (NBC) attack.	1	2	3	4	5
7. I received adequate training on how to perform daily life activities while wearing nuclear, biological, or chemical (NBC) protective gear.	1	2	3	4	5

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
8. I was adequately prepared to deal with the region's climate.	1	2	3	4	5
9. I was accurately informed about what to expect from the enemy.	1	2	3	4	5
10. I saw as much combat as I expected.	1	2	3	4	5
11. I was informed about the role my unit was expected to play in the deployment.	1	2	3	4	5
12. When I was deployed I had a pretty good idea of how long the mission would take to complete.	1	2	3	4	5
13. I was accurately informed of what daily life would be like during my deployment.	1	2	3	4	5
14. I was adequately trained to work the shifts required of me during my deployment.	1	2	3	4	5

LIFE & FAMILY CONCERNS

The following set of statements refers to concerns you may have had related to your life and family back home while you were deployed. These questions do not ask if these events actually occurred, but only how concerned you were that they might happen while you were deployed. Please describe how concerned you were for each item by circling the number that best fits your answer.

While I was deployed, I was concerned about. . . .	Not applicable	Not at all	A little	Moderately	A great deal
1. . . . missing out on a promotion at my job back home.	0	1	2	3	4

While I was deployed, I was concerned about . . .	Not applicable	Not at all	A little	Moderately	A great deal
2. . . . missing out on opportunities to start a career while I was away.	0	1	2	3	4
3. . . . damaging my career because I was overseas for a long time.	0	1	2	3	4
4. . . . losing touch with my co-workers or supervisors back home.	0	1	2	3	4
5. . . . being unable to financially support my family while I was away.	0	1	2	3	4
6. . . . harming my relationship with my spouse/significant others.	0	1	2	3	4
7. . . . being left by my spouse/significant other.	0	1	2	3	4
8. . . . missing out on my children's growth and development while I was away.	0	1	2	3	4
9. . . . losing touch with my friends.	0	1	2	3	4
10. . . . missing important events at home such as birthdays, weddings, funerals graduations, etc.	0	1	2	3	4
11. . . . the well-being of my family or friends while I was away.	0	1	2	3	4
12. . . . my inability to help my family or friends if they had some type of problem.	0	1	2	3	4
13. . . . my inability to directly manage or control family affairs.	0	1	2	3	4
14. . . . the care that my children were receiving while I was away.	0	1	2	3	4

UNIT SUPPORT

The statements below are about your relationships with other military personnel while you were deployed. Please read each statement and describe how much you agree or disagree by circling the number that best fits your answer.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
1. My unit was like family to me.	1	2	3	4	5
2. I felt a sense of camaraderie between myself and other soldiers in my unit.	1	2	3	4	5
3. Members of my unit understood me.	1	2	3	4	5
4. Most people in my unit were trustworthy.	1	2	3	4	5
5. I could go to most people in my unit for help when I had a personal problem.	1	2	3	4	5
6. My commanding officer(s) were interested in what I thought and how I felt about things.	1	2	3	4	5
7. I was impressed by the quality of leadership in my unit.	1	2	3	4	5
8. My superiors made a real attempt to treat me as a person.	1	2	3	4	5
9. The commanding officer(s) in my unit were supportive of my efforts.	1	2	3	4	5
10. I felt like my efforts really counted to the military.	1	2	3	4	5
11. The military appreciated my service.	1	2	3	4	5
12. I was supported by the military.	1	2	3	4	5

DEPLOYMENT CONERNS

The statements below are about the amount of danger you felt you were exposed to while you were deployed. Please read each statement and describe how much you agree or disagree with each statement by circling the number in the column that best fits your answer.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
1. I thought I would never survive.	1	2	3	4	5
2. I felt safe.	1	2	3	4	5
3. I was extremely concerned that the enemy would use nuclear, biological, chemical agents (NBCs) against me.	1	2	3	4	5
4. I felt that I was in great danger of being killed or wounded.	1	2	3	4	5
5. I was concerned that my unit would be attacked by the enemy.	1	2	3	4	5
6. I worried about the possibility of accidents (for example, friendly fire or training injuries in my Unit).	1	2	3	4	5
7. I was afraid I would encounter a mine or booby trap.	1	2	3	4	5
8. I felt secure that I would be coming home after the war.	1	2	3	4	5
9. I thought that vaccinations I received would actually cause me to be sick.	1	2	3	4	5

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
10. I was concerned that tablets I took to protect me would make me sick.	1	2	3	4	5
11. I felt that I would become sick from the pesticides or other routinely used chemicals.	1	2	3	4	5
12. I was concerned about the health effects of breathing bad air.	1	2	3	4	5
13. I thought that exposure to depleted uranium would negatively affect my health.	1	2	3	4	5
14. I was afraid that the equipment I was given to protect me from nuclear, biological, chemical agents (NBCs) would not work.	1	2	3	4	5
15. I worried about getting an infectious disease.	1	2	3	4	5

COMBAT EXPERIENCES

The statements below are about your combat experiences during deployment. Please circle "yes" if the statement is true or "no" if the statement is false.

While deployed:

1. I went on combat patrols or missions.	Yes	No
2. I or members of my unit encountered land or water mines and/or booby traps.	Yes	No
3. I or members of my unit received hostile incoming fire from small arms, artillery, rockets, mortars, or bombs.	Yes	No

While deployed:

4. I or members of my unit received "friendly" incoming fire from small arms, artillery, rockets, mortars, or bombs.	Yes	No
5. I was in a vehicle (for example, a truck, tank, APC, helicopter, plane or boat that was under fire.	Yes	No
6. I or members of my unit were attacked by terrorists or civilians.	Yes	No
7. I was part of a land or artillery unit that fired on the enemy.	Yes	No
8. I was part of an assault on entrenched or fortified positions.	Yes	No
9. I took part in an invasion that involved naval and/or land forces.	Yes	No
10. My unit engaged in battle in which it suffered casualties.	Yes	No
11. I personally witnessed someone from my unit or an ally unit being seriously wounded or killed.	Yes	No
12. I personally witnessed soldiers from enemy troops being seriously wounded or killed.	Yes	No
13. I was wounded or injured in combat.	Yes	No
14. I fired my weapon at the enemy.	Yes	No
15. I killed or think I killed someone in combat.	Yes	No

POST-BATTLE EXPERIENCES

Next are statements about your experiences **AFTER** battle. Please indicate if you ever experienced the following events anytime while you were deployed by circling either "yes" or "no."

1. I observed homes or villages that had been destroyed.	Yes	No
2. I saw refugees who had lost their homes and belongings as a result of battle.	Yes	No
3. I saw people begging for food.	Yes	No
4. I or my unit took prisoners of war.	Yes	No

5. I interacted with enemy soldiers who were taken as prisoner of war.	Yes	No
6. I was exposed to the sight, sound, or smell of animals that had been wounded or killed from war-related causes.	Yes	No
7. I took care of injured or dying people.	Yes	No
8. I was involved in removing dead bodies after battle.	Yes	No
9. I was exposed to sight, sound, or smell of dying men and women.	Yes	No
10. I saw enemy soldiers after they had been severely wounded or disfigured in combat.	Yes	No
11. I saw the bodies of dead enemy soldiers.	Yes	No
12. I saw civilians after they had been severely wounded or disfigured.	Yes	No
13. I saw the bodies of dead civilians.	Yes	No
14. I saw Americans or allies after they had been severely wounded or disfigured in combat.	Yes	No
15. I saw the bodies of dead Americans or allies.	Yes	No

Continue to the next page.

SECTION III
This portion of the survey contains questions regarding your experiences after returning home from military deployment.

POST-DEPLOYMENT LIFE EVENTS
The next statements refer to events you may have experienced SINCE RETURNING FORM YOUR DEPLOYMENT. These questions are similar to the items you have answered previously about events before your deployment. For this page, please circle "yes" or "no" for each of the items below.

Since returning home, I have experienced. . . .

1. . . . a natural disaster (for example, a flood or Hurricane) a fire, or an accident in which I was hurt or my property was damaged.	Yes	No
2. . . . exposure to a toxic substance (such as dangerous chemicals, radiation).	Yes	No
3. . . . combat or exposure to a war zone (in the military or as a civilian).	Yes	No
4. . . . a serious operation.	Yes	No
5.. . . . the mental illness (for example, clinical depression, anxiety disorder), or life-threatening physical illness (for example, cancer, or heart disease) of someone close to me.	Yes	No
6. . . . the death of someone close to me.	Yes	No

Since returning home, I have . . .

7. . . . experienced stressful legal problems (for example, being sued or suing someone else.	Yes	No
8. . . . witnessed someone being assaulted or violently killed.	Yes	No
9. . . . been robbed or had my home broken into.	Yes	No
10. . . . had a family member with a serious drug or alcohol problem.	Yes	No

11. . . . been unemployed and seeking employment for at least 3 months.	Yes	No
12. . . . been emotionally mistreated (for example, shamed, embarrassed, ignored, or repeatedly told I was no good).	Yes	No
13. . . . experienced unwanted sexual activity as a result of force, threat of harm, or manipulation.	Yes	No
14. . . . been physically injured by another person (for example, hit, kicked, beaten up).	Yes	No
15. . . . lost my job.	Yes	No
16. . . . gone through a divorce or been left by a partner or significant other.	Yes	No
17. . . . had problems getting access to adequate healthcare.	Yes	No

2. Using the 5 point rating system shown below, indicate how uncharacteristic or characteristic each of the following statements is in describing you. Circle the number in each column that corresponds with your rating for each statement.

Extremely uncharacteristic of me	**Somewhat uncharacteristic of me**	**Neither uncharacteristic nor characteristic**	**Somewhat characteristic of me**	**Extremely characteristic of me**
1	2	3	4	5

Some of my friends think I am a hot head.	1	2	3	4	5
If I have to resort to violence to protect my rights, I will.	1	2	3	4	5
When people are especially nice to me, I wonder what they want.	1	2	3	4	5
I tell my friends openly when I disagree with them.	1	2	3	4	5
I have become so mad that I have broken things.	1	2	3	4	5

Extremely uncharacteristic of me	Somewhat uncharacteristic of me	Neither uncharacteristic nor characteristic	Somewhat characteristic of me	Extremely characteristic of me
1	2	3	4	5

I can't help getting into arguments when people disagree with me.	1	2	3	4	5
I wonder why sometimes I feel so bitter about things.	1	2	3	4	5
Once in a while, I can't control the urge to strike another person.	1	2	3	4	5
I am an even-tempered person.	1	2	3	4	5
I am suspicious of overly friendly strangers.	1	2	3	4	5
I have threatened people I know.	1	2	3	4	5
I flare up quickly but get over it quickly.	1	2	3	4	5
Given enough provocation, I may hit another person.	1	2	3	4	5
When people annoy me, I may tell them what I think of them.	1	2	3	4	5
I am sometimes eaten up with jealousy.	1	2	3	4	5
I can think of no good reason for ever hitting a person.	1	2	3	4	5
At times I feel I have gotten a raw deal out of life.	1	2	3	4	5
I have trouble controlling my temper.	1	2	3	4	5

	Extremely uncharacteristic of me	Somewhat uncharacteristic of me	Neither uncharacteristic nor characteristic	Somewhat characteristic of me	Extremely characteristic of me
	1	2	3	4	5
When frustrated, I let my irritation show.	1	2	3	4	5
I sometimes feel that people are laughing at me behind my back.	1	2	3	4	5
I often find myself disagreeing with people.	1	2	3	4	5
If somebody hits me, I hit back.	1	2	3	4	5
I sometimes feel like a powder keg ready to explode.	1	2	3	4	5
Other people always seem to get the breaks.	1	2	3	4	5
There are people who pushed me so far that we came to blows.	1	2	3	4	5
I know that "friends" talk about me behind my back.	1	2	3	4	5
My friends say that I am somewhat argumentative.	1	2	3	4	5
Sometimes I fly off the handle for no good reason.	1	2	3	4	5
I get into fights a little more than the average person.	1	2	3	4	5

Continue to the next page.

3. Below is a list of problems/complaints that people sometimes have in response to stressful life experiences. Please read each one carefully, then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past month.

	Not at all	A little bit	Moderately	Quite a bit	Extremely
Repeated, disturbing *memories, thoughts,* or *images* of a stressful experience from the past?	1	2	3	4	5
Repeated, disturbing *dreams* of a stressful experience from the past?	1	2	3	4	5
Suddenly *acting* or *feeling* as if a stressful experience *were happening again* (as if you were reliving it)?	1	2	3	4	5
Feeling *very upset* when *something reminded you* of a stressful experience from the past?	1	2	3	4	5
Having *physical reactions* (e.g., heart pounding, trouble breathing, sweating) when *something reminded you* of a stressful experience from the past?	1	2	3	4	5
Avoiding *thinking about* or *talking about* a stressful experience from the past or avoiding *have feelings* related to it?	1	2	3	4	5
Avoiding *activities* or *situations* because *they reminded you* of a stressful experience from the past?	1	2	3	4	5
Trouble *remembering important parts* of a stressful experience from the past?	1	2	3	4	5
Loss of interest in activities that you used to enjoy?	1	2	3	4	5

	Not at all	A little bit	Moderately	Quite a bit	Extremely
Feeling *distant* or *cut off* from other people?	1	2	3	4	5
Feeling *emotionally numb* or being unable to have loving feelings for those close to you?	1	2	3	4	5
Feeling as if your *future* will somehow be *cut short?*	1	2	3	4	5
Trouble *falling* or *staying asleep*?	1	2	3	4	5
Feeling *irritable* or having *angry outbursts?*	1	2	3	4	5
Having *difficulty concentrating*?	1	2	3	4	5
Being *"super-alert"* or watchful or on guard?	1	2	3	4	5
Feeling *jumpy* or easily startled?	1	2	3	4	5

Please answer the following questions:

4a. Are you using alcohol more than you mean to? ○ Yes ○ No

b. Lately, have you felt that you wanted to or needed
    cut down on your drinking? ○ Yes ○ No

c. How often do you have a drink containing alcohol?

○ Never ○ Monthly or less ○ 2-4 times a month

○ 2-3 times a week ○ 4 or more times a week

d. How many drinks containing alcohol do you have on a typical day when you are
    drinking?

○ 1 or 2 ○ 3 or 4 ○ 5 or 6 ○ 7 to 9 ○ 10 or more

e. How often do you have six or more drinks on one occasion?

○ Never ○ Less than monthly ○ Monthly ○ Weekly ○ Daily

5. Over the PAST MONTH, have you been bothered by the following problems?

	Not at all	Few or several days	More than half the days	Nearly every day
a. Little interest or pleasure in doing things	○	○	○	○
b. Feeling down, depressed, or hopeless	○	○	○	○

6. Please rate the below possible concerns that might affect your decision to receive mental health counseling or services if you ever had a problem.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
a. I do not trust mental health professionals.	1	2	3	4	5
b. I do not know where to get help.	1	2	3	4	5
c. It would be too embarrassing.	1	2	3	4	5
d. It would harm my career.	1	2	3	4	5
e. I would be seen as weak.	1	2	3	4	5
f. Mental health does not work.	1	2	3	4	5
g. I do not have adequate transportation.	1	2	3	4	5
h. It is difficult to schedule an appointment.	1	2	3	4	5
i. My leadership might treat me differently.	1	2	3	4	5
j. Members of the police department might have less confidence in me.	1	2	3	4	5

k. If you were to seek out mental health counseling or services rank from 1-5, 1 being most likely to 5 being least likely that you would obtain services from.

_____ Police Department Employee Assistance Program: Peer Support

_____ Private Psychologist/Social Worker

_____ Police Department Psychologist/Social Worker

_____ Police Department Chaplain

_____ Personal Clergy

7. POST-DEPLOYMENT SOCIAL SUPPORT
The next set of statements refers to social support after deployment. Please decide how much you agree or disagree with each statement and circle the number that best fits your choice.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
a. The reception I received when I returned from my deployment made me feel appreciated for my efforts.	1	2	3	4	5
b. The American people made me feel at home when I returned.	1	2	3	4	5
c. When I returned, people made me feel proud to have served my country in the Armed Forces.	1	2	3	4	5
d. I am carefully listened to and understood by family members or friends.	1	2	3	4	5
e. Among my friends and relatives there is someone who makes me feel better when I am feeling down.	1	2	3	4	5
g. I have problems that I can't discuss with family or friends.	1	2	3	4	5

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
h. Among my friends or relatives, there is someone I go to when I need good advice.	1	2	3	4	5
i. People at home just do not understand what I have been through while in the Armed Forces.	1	2	3	4	5
j. There are people to whom I can talk about my deployment experiences.	1	2	3	4	5
k. The people I work with respect the fact that I am a veteran.	1	2	3	4	5
l. My supervisor understands when I need time off to take care of personal matters.	1	2	3	4	5
m. My friends or relatives would lend me money if I needed it.	1	2	3	4	5
n. My friends or relatives would help me move my belongings if I needed to.	1	2	3	4	5
o. When I am unable to attend to daily chores, there is someone who will help me with these tasks.	1	2	3	4	5
p. When I am ill, friends or family members will help out until I am well.	1	2	3	4	5

Continue to the next page.

8. Below is a list of common symptoms of anxiety. Please carefully read each item in the list. Indicate how much you have been bothered by that symptom during the PAST MONTH, including today, by circling the number in the corresponding space in the column next to each symptoms.

	Not At All	Mildly but it did not bother me much.	Moderately – it was not pleasant at times	Severely – it bothered me a lot
Numbness or tingling	0	1	2	3
Feeling hot	0	1	2	3
Wobbliness legs	0	1	2	3
Unable to relax	0	1	2	3
Fear of worst happening	0	1	2	3
Dizzy or lightheaded	0	1	2	3
Heart pounding/racing	0	1	2	3
Unsteady	0	1	2	3
Terrified or afraid	0	1	2	3
Nervous	0	1	2	3
Feeling of choking	0	1	2	3
Hands trembling	0	1	2	3
Shaky/unsteady	0	1	2	3
Fear of losing control	0	1	2	3
Difficulty in breathing	0	1	2	3
Fear of dying	0	1	2	3
Scared	0	1	2	3
Indigestion	0	1	2	3
Faint/lightheaded	0	1	2	3
Face flushed	0	1	2	3
Hot/cold sweats	0	1	2	3

Continue to the next page.

Study ID_____   Date completed_____

Section IV

Gender   **Age**   **Marital Status**

____ Male   What is your age?   _____ Never Married

____ Female   _____   _____ Married

                                              _____ Separated

Number of years in law enforcement   _____ Divorced

                                              _____ Widowed

_____

Total Deployments in the Past 5 Years

____ 1-5   ____ OIF   ____ OEF   ____ Other

____ 6-10   ____ 1   ____ 1   ____ 1

____ 11-15   ____ 2   ____ 2   ____ 2

____ 16-20   ____ 3   ____ 3   ____ 3

____ over 21   ____ 4   ____ 4   ____ 4

                            ____ 5 or   ____ 5 or   ____ 5 or
                            more   more   more

Location of Operation   **Date departed theater of LAST deployment**

To what areas were you mainly deployed
(land-based operations more than 30 days)?   _____
Please mark all that apply, including the   month/day/year
Number of months spent at each location.

Country 1 _____ Months _____   **Ethnicity**:

Country 2 _____ Months _____   O   White

Country 3 _____ Months _____   O   African American

Country 4 _____ Months _____   O   American Indian

Country 5 _____ Months _____   O   Asian

                                               O   Pacific Islander

                                               O   Hispanic

Vita

Paula Barrows
July 23, 1962
Springfield, Illinois, USA

Education	Ph.D. in Public Policy and Public Administration, with a concentration in Homeland Security, Virginia Commonwealth University, anticipated graduation May 2012. Dissertation title: "Assessing Deployment Risk and Resiliency Factors and the Adjustment Outcomes of Police Officers Serving in Operation Iraqi Freedom and Operation Enduring Freedom " Dr. Janet R. Hutchinson, Advisor.
	Master of Science, DePaul University, 1998.
	Federal Bureau of Investigation (FBI Academy), Special Agent, 1995.
	Illinois State Police Academy, State Trooper, 1986.
	B.S. in Criminal Justice and Sociology, Western Illinois University, 1983.

Teaching Experience

Adjunct Faculty Member, University of Virginia, Federal Bureau of Investigation Academy, National Academy
- Behavioral Science Unit – Instructor for Stress Management in Law Enforcement (BS 475) Summer 2003 to Summer 2007
- Leadership Development Unit – Instructor for Introduction to Police Management in Law Enforcement (MS 325) Spring 2001 to Summer 2003

Hampton Roads Criminal Justice Training Academy
- Visiting instructor – Crisis Negotiation, Stress Management in Law Enforcement, Police Suicide, and the Re-integration to Urban Policing after Military Deployment (1997 to present)

Virginia State Police Academy
- Visiting instructor – Stress Management in Law Enforcement (2004 to 2007)

Illinois State Police Academy
- Visiting instructor – Interview and Interrogation (1989 to 1995)

Research Experience

"A Paradigm Change in Training State Troopers." This project allowed me the opportunity to design, develop, and execute primary research to determine key findings in the evaluation of competency-based training for state troopers from state police agencies across the United States. Springfield, Illinois, *1997-1998*

Research Assistant for DePaul University: This project involved the evaluation of the Chicago Police Department's community policing model, The Chicago Alternative Policing Strategy (CAPS). Responsibilities included gathering data from citizens during beat meetings at various Chicago Police Precincts. *1993-1994*

Work experience	Federal Bureau of Investigation, Special Agent, 1995 to present.
	Illinois State Police, State Trooper, Sergeant, 1986 to 1995.
	Illinois Department of Corrections, Parole Agent, 1984 to 1986.

Presentations	"Re-integration to Urban Policing after Military Deployment." The Commission on Accreditation for Law Enforcement Agencies (CALEA), National Conference. Hampton, Virginia, July, 2009.
	"Re-integration to Urban Policing after Military Deployment." The Virginia National Academy Annual Re-trainer. Blacksburg, Virginia, September 2008.
	"Re-integration to Urban Policing after Military Deployment." The Tidewater, Virginia, Chief's Meeting. Newport News, Virginia, July, 2008.
	"Critical Incident Stress and Police Suicide." The Northern Illinois National Academy Annual Re-trainer. Chicago, Illinois, May, 2008.
	"Police Stress." The Tennessee Chapter of the National Academy Annual Re-trainer. Gatlinburg, Tennessee, December, 2004.
	"Stress Behind the Badge." The Foundation of Officers Recovering from Traumatic Events Annual Conference. St. Louis, Missouri, September, 2004.
	"Stress in Everyday Policing." The Florida Chapter of the National Academy Annual Re-trainer. Destin, Florida, July 2004.
	"Leadership vs. Management in Policing." The FBI International Academy. Budapest, Hungary, May, 2002.
	"Interviewing and Interrogation." The FBI International Academy. Tallinn, Estonia, June, 2001.

Awards United States Attorney's Public Service Award, Eastern District of Virginia, 1996, 1997, 1998, 2000, 2008, 2009, 2010, and 2011.