Occurrence and Effects Of Repeated Trauma Exposure In Emergency Medical Personnel

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OCCURRENCE AND EFFECTS OF REPEATED TRAUMA EXPOSURE IN
EMERGENCY MEDICAL PERSONNEL

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Dissertation supervised by Dr. David Delmonico, Ph.D.

This study focuses on the prevalence and severity of post-traumatic stress symptoms in Emergency Medical Services (EMS) personnel. Summative PTSD Checklist (PCL-C) scores were collected and analyzed from 102 active, adult EMS professionals working in Pennsylvania. Data analysis shows EMS professionals are experiencing severe post-traumatic stress symptoms at a higher rate than the general public. The severity and prevalence of EMS post-traumatic stress symptoms are comparable to those of American veterans returning from active combat zones in Iraq. Based on the results, several suggestions are proposed regarding how to effectively minimize the experience of post-traumatic stress symptoms in EMS professionals.
DEDICATION

This thesis is dedicated to the EMS professionals who sacrifice their well-being to serve the communities and to the families who support them.
ACKNOWLEDGEMENT

First, I would like to thank Drs. Delmonico, Casile, and Krushinski, the members of my defense committee, who guided me through this process and pushed me to excel, exceeding my own expectations. I would also like to thank the staff of Saint Vincent College’s Psychology Department, my alma mater, who instilled in me the importance of research and allowed me to discover a new passion. Finally, I would like to thank my husband and family. Without their support, I would not have been able nor had the courage to pursue my educational endeavors and see this study through to fruition.
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CHAPTER 1

Introduction

This study focuses on the potential effects of repeated trauma exposure in Emergency Medical Services (EMS) personnel. EMS is a growing occupation in the United States; yet, the research on this field is somewhat limited. Many of the current studies focus on the physical health of individuals in the EMS field and there is a lack of information on the mental health aspects of the profession (Vogel, Cohen, Habib, & Massey, 2005). Post September 11, 2001 research suggests this occupation is frequently exposed to repeated trauma due to the nature of the profession (Vogel et al., 2005; Alexander & Klein, 2001; Galvango, Haut, Zafar, Millin, Efron, Koenig, Baker, Bowman, Pronovost, & Haider, 2012). However, research is lacking on the potential ramifications of such repeated exposure on EMS personnel.

The Problem

EMS Profession and Culture. The Department of Labor (DOL) classifies field of Emergency Medical Services (EMS) as a “High Risk or Safety Sensitive” occupation (United States Department of Labor: Connecticut, 2010). Similar “High Risk or Safety Sensitive” occupations include law enforcement officers and professional firefighters (United States Department of Labor: Connecticut, 2010). The EMS field primarily consists of Emergency Medical Technicians (EMTs) and Paramedics, although other medical personnel may fall into classification of EMS depending on the geographic location. For example, in Pennsylvania, where this study was conducted, individuals working in the EMS field are usually employed by a company independently owned, operated, and contracted to provide services for a designated area or through hospital-
based services, which is a common practice is common throughout the Northeastern United States. However, in other parts of the country EMS personnel are consolidated under an umbrella that includes with firefighters and other crisis workers.

According to the U.S. Bureau of Labor Statistics (BLS), EMS personnel experience work-related injuries or illnesses at a rate higher than average (United States Department of Labor: Bureau of Labor Statistics, 2012). The high occurrence of work-related injuries or illness can be attributed to the nature of the occupation. EMS personnel have a higher likelihood of being exposed to contagious diseases, including strains of hepatitis and HIV/AIDS. EMS personnel are also more at risk of being physically assaulted by mentally ill and otherwise combative patients and bystanders than employees in other occupational fields (United States Department of Labor: Bureau of Labor Statistics, 2012). Yet, according to the Occupational Outlook Handbook (OOH) prepared by the BLS, the EMS field is projected to experience a 33% increase in job growth over the next decade. Such a drastic increase is much higher than that what is expected for most other occupational fields (United States Department of Labor: Bureau of Labor Statistics, 2012).

Those familiar with the EMS occupation tend to accept the trauma exposure as part of the culture. Gallows humor and colloquialisms, such as “making friends with the dead,” are often used to cope with the stress resulting from a traumatic event (Vogel et al., 2005). However, there is little done in the way of wide scale formal evaluation of trauma exposure and potential difficulties resulting from exposure for EMS personnel. Because of this, there is a concern within the profession that EMS personnel may be
experiencing trauma reactions, similar to those indicative of PTSD, but are not receiving adequate support in recognizing and managing those symptoms.

**Current Research**

The current body of research specifically focused on EMS personnel is limited. Limitations can be traced to several factors. The most prevalent of which appears to be trauma exposure research in first responders is largely focused on law enforcement and firefighter professionals. While these professions are similar to the EMS field, they are not entirely comparable. Despite this fact, EMS, law enforcement, and firefighters tend to be categorized together. There are few studies which focus solely on EMS professionals and those which do tend to focus on the physical safety and occupational efficacy of the personnel, rather than their personal and emotional well-being (Vogel *et al.*, 2005).

**Research Questions**

With such a dramatic expected increase within the EMS field by 2020, an in-depth look at the profession is warranted. Growth within a specific population frequently results in the need for mental health professionals to increase their awareness of issues specific to the population in order to better serve clients.

This study will address the following research questions:

What is the prevalence and severity of post-traumatic stress symptoms in Emergency Medical Services professionals?

Are there differences in reported post-traumatic stress symptoms of Emergency Medical Services professionals based on certain demographic characteristics?

**Study Purpose**

The purpose of this study is to measure the presence and severity of post-traumatic stress symptoms in active Emergency Medical Services personnel. Based on
current research, it is understood EMS personnel are exposed to more traumatic events than other first responders. This repeated trauma exposure could have a negative impact on the professionals. If trauma symptoms are going unrecognized or unaddressed, these symptoms could impact the ability of EMS professionals to function efficiently in the field. While the inability to function efficiently affects the professional, it also directly affects the patients for whom they care. Distracted or otherwise impaired professionals are more likely to make choices that negatively impact the patient by detracting from the quality of care the patient receives than their unimpaired peers. Quality care is generally associated with consumer satisfaction. However in the EMS field, quality care directly impacts the safety and at times survival of the patients.

Hypotheses

This study hypothesizes:

1) Emergency Medical Services professionals are experiencing post-traumatic stress symptoms at a higher rate and with greater severity than the general population,

2) Paramedics report experiencing post-traumatic stress symptoms of greater intensity than their Emergency Medical Technician counterparts,

3) Emergency Medical Services workers in rural settings report experiencing post-traumatic stress symptoms of greater intensity than peers who work in an urban setting,

4) Male Emergency Medical Services workers report experiencing post-traumatic stress symptoms of greater intensity than their female counterparts, and
5) There is a correlation between the severity of measured post-traumatic stress symptoms and the length of time employed in the Emergency Medical Services profession.

*Study Design*

Conceptually, the study was based on current protocols used by the United States Department of Veteran Affairs (VA) to identify PTSD symptoms in veterans returning from active duty. The procedures and measures used by the VA are concise, allowing for easy, accurate implementation. The measures also have the ability to generalize to other populations outside of veterans while maintaining validity and reliability (U.S. Department of Veteran Affairs, 2011).

This study focuses on active EMS professionals. This allows for the data collected to be clearly related to the trauma exposure experienced while delivering EMS care; whereas, former studies included law enforcement officers and firefighters. By gathering data from individuals who act in multiple roles (i.e. firefighter/EMS, etc.), data became difficult to interpret accurately. In studies with participants operating in dual roles, it was unclear if the trauma exposure occurred while the individual was acting in EMS role or the other role. There is also the potential that the combination of the firefighter and EMS roles contributed to the prevalence of trauma symptoms. For the purpose of this study, only individuals who were employed by a company solely providing medical services and no other crisis services were surveyed. By surveying professionals who only work with medical crises, this study was better able to create a homogeneous group for research purposes. The creation of a homogenous group allowed for better interpretation.
and generalization of data as well as identification of trauma responses specific to the EMS field.

**Potential Limitations**

As with any research, there are limitations to consider with this particular study. First and foremost, the population surveyed presents a unique set of considerations. One of the shortcomings of the current data on effects of trauma exposure is EMS personnel are unduly categorized in with occupations such as firefighters and law enforcement (Vogel *et al*., 2005; Alexander & Klein, 2001). Classifying these different professions under one category may create limitations on the ability to generalize the findings of this particular study, as other studies may not have made a distinction between professions. This study focused solely on active EMS personnel and did not include their law enforcement and firefighter counterparts. As a result, some of the findings may seem to stand in stark contrast to the current body of data.

Another limitation to be considered would be directly related to the methodology of the study. The study used an electronic system to deliver and gather information during the data collection. The response rate may have been higher and more varied if the study was conducted in person or the period of data collection was longer. A small homogenous sample size was anticipated. The expectation of a small sample size was based on the electronic delivery system and the small window of time in which the survey will be offered. Homogeneity was expected because participants were mainly recruited from Southwestern Pennsylvania, which is dominated by male Caucasian EMS professionals. A small homogenous sample size may limit the generalizability of the results.
Additionally, the accuracy of the self-reported data may be questionable. EMS personnel operate within a closed culture. It is possible participants will provide answers they view as more favorable to avoid disclosing accurate data. There are several reasons as to why a participant would provide inaccurate data. Empirical data shows EMS personnel pride themselves on being capable and impervious to the perils of the occupation. Such a characteristic would make them susceptible to the “halo” or Hawthorne effect.

This effect can be seen when a participant reacts in a certain way because they are being observed. Participants affected by the “halo” effect may alter their responses to appear more favorable to the observer. Therefore, a personnel member may change his or her survey responses in order to appear unaffected by trauma exposure. Admitting one is affected by trauma would be considered countercultural or abnormal in the EMS profession and potentially make an individual vulnerable to criticism by peers. Furthermore, a respondent may have chosen to change seemingly unfavorable responses to responses seen as “normal” for fear of the information being released to their employer, placing their job in jeopardy.

While EMS professionals have extensive training in human physiology, their training in the mental health field is limited. This gap in knowledge can be viewed as a limitation. Because EMS professionals are unfamiliar with recognizing mental health trauma symptoms, they may not notice or misjudge these symptoms in themselves and their peers. It is possible EMS professionals are experiencing problematic trauma exposure responses and are not attributing these symptoms to trauma exposure. It is also
possible EMS personnel are unable to recognize the full scope of impact these responses are having on their work and life.

**Definition of Key Terms**

There are several key terms used within the study requiring clarification. The first is EMS or Emergency Medical Services. This term refers to the occupation which focuses on delivering pre-hospitals services to individuals experiencing a medical crisis (UCLA Center for Prehospital Care, 2012). Within the EMS field, there are different classifications of care providers, the study primarily focused on Emergency Care Technicians, commonly referred to as EMTs, and Paramedics, or Medics. EMT and Paramedic positions are similar; however, they are differentiated by skill set and training.

EMTs require 120-150 hours of training, depending on the state in which they are practicing (UCLA Center for Prehospital Care, 2012). This position is considered an introductory position. Individuals who hold an EMT position receive training to administer Basic Life Support services. Such services include: administration of oxygen, CPR, and provide treatment for conditions such as diabetes, asthma, and allergic reactions (UCLA Center for Prehospital Care, 2012). As a rule of thumb, EMTs are not permitted to provide any treatment which requires invasive procedures or the breaking of skin. Paramedics; however, undergo more intensive, in-depth training. The course work for this position ranges from 1,200-1,500 hours and extensive education of anatomy, pharmacology, and medical intervention (UCLA Center for Prehospital Care, 2012). Individuals with Paramedic training are responsible for providing care in Advanced Life Support situations; such as: trauma incidents, heart attacks, and advanced airway management (UCLA Center for Prehospital Care, 2012).
Both EMTs and Paramedics were invited to participate in the study. By including personnel from both positions, potential differences in trauma exposure and reactions within the EMS profession could be investigated. Furthermore, the study used the American Psychiatric Association’s definitions for trauma and Post-Traumatic Stress Disorder. This allowed universally accepted definitions which could be easily generalized and compared to other studies focused on these areas.

Summary

This study was built to attempt to bridge the gap in the current research. By separating EMS personnel from the rest of the first responders, the study was able to identify areas of concern and interest unique to the EMS profession. Identification of such concerns is critical to the growing EMS field. A clearer understanding of the connection between the EMS occupation and trauma will allow for a more effective management of trauma reactions in EMS personnel.
CHAPTER 2

Overview

This chapter focuses on trauma, Post-Traumatic Stress Disorder (PTSD), and the Emergency Medical Services (EMS) culture. Understanding the characteristics of trauma and PTSD was essential in contextualizing the prevalence and severity of post-traumatic stress responses collected. Identifying cultural considerations allowed for a better understanding of potential barriers in making the connection between trauma exposure and trauma reactions in EMS personnel.

Trauma

According to the American Psychiatric Association, trauma is an emotional response to a terrible event like an accident, rape or natural disaster (Kazdin, 2000). Exposure to a traumatic event is expected to produce responses such as denial and shock in the individual who experienced the exposure. These emotional responses are not only expected but viewed as a healthy response. However, prolonged emotional responses or maladaptive behaviors in a response to a traumatic event are most often viewed as being abnormal or unhealthy. In some cases, these negative responses can interrupt a person’s life and cause additional stress for the individual and his or her loved ones (Kazdin, 2000). The diagnosis of Acute and/or Post-Traumatic Stress Disorder is generally considered in cases of trauma exposure which may result in long-term, maladaptive responses to the traumatic event.

Post-Traumatic Stress

Post-Traumatic Stress Disorder or PTSD is defined by a specific set of criteria set forth by the APA. In order to be given a diagnosis of PTSD, an individual must meet four criteria: (A) stressor, (B) re-experiencing, (C) numbing and/or avoidance, and (D)
hyperarousal (American Psychiatric Association, 2000). If an individual meets the four specified criteria, he or she can be formally diagnosed with the PTSD. The APA defines the stressor or activating event by identifying two components. The first or A1 criteria is defined as types of events which would be characterized as traumatic. The second, A2 criteria defined as the experience of fear, helplessness, or horror at the time of the event (American Psychiatric Association, 2000).

If an event can be defined as traumatic and the person identifies as having experienced fear, helplessness, or horror while the event was taking place, the individual presents with both components of the stressor. While the APA identifies only fear, helplessness, and horror as emotions predictive of PTSD in the A2 criteria, research suggests anger, shame, and guilt associated with a traumatic event show a high correlation with the development of PTSD (Lee, Scraggs, & Turner, 2001; Brewin, Andrews, & Rose, 2000; & Wilson, Drozdek, & Turkovic, 2006).

Research shows individuals who meet the A2 criteria are at an increased likelihood of meeting the criteria for a PTSD diagnosis (Craemer, McFarlene, & Burgess, 2005). Those who meet both the A1 and A2 criteria experience PTSD at a rate of 12.0% as opposed to those who meet only the A1 criteria, who experience a PTSD prevalence rate of 9.3% (Craemer et al., 2005). “Traumatic events” are often likened to events such as combat, natural disasters, and victimizing events. Once a stressor has been identified, criteria B through D can be assessed.

Simply defined, PTSD is an anxiety disorder which stems from exposure to an exceptionally traumatic event (Kazdin, 2000). Individuals with a PTSD diagnosis can have a variety of symptoms which meet the aforementioned criteria. The criteria of re-
experiencing can be experienced in terms of flashbacks and/or dreams. Re-experiencing may also present as intrusive and unwanted thoughts. Individuals struggling with symptoms related to avoidance behaviors may find themselves circumventing people, places, and things which remind them of the event. Numbing may present as self-medicating and emotional distancing. Similarly, hyperarousal can also present in a variety of ways. Individuals may find they are acting overly vigilant or overly cautious or be faced with other strong, unwanted emotions which cause disruption in their daily life.

**Trauma and First Responders**

It is generally accepted among the research community that first responders are more at risk for being exposed to trauma due to their line of work. The data also supports the idea that individuals in this profession are also experiencing trauma reactions at a higher rate than other professions.

First responders are generally considered to be individuals who provide primary support in crisis or disaster events, including law enforcement, firefighters, and EMS personnel. These professions encounter a high level of unpredictability by nature. The environment in which first responders find themselves changes drastically from call to call. As a result, first responders are trained to work in a variety of challenging and dangerous situations over which they have little to no control and to quickly adapt from one crisis situation to the next. Many situations which first responders encounter are considered to be traumatic events. According to the Trauma Center at the Justice Resource Institute (2011):

First responders are exposed to highly stressful events in the course of their routine duties. There are specific situations that increase one’s vulnerability to
traumatic stress: having no control over the volume of calls; having to continue responding to calls regardless after an especially disturbing call; being in the service for a long time, since stress is cumulative; being in a situation where one feels helpless in the face of overwhelming demands, such as a prolonged, failed, rescue; having a partner, or a peer killed or seriously injured in the line of duty; the suicide of a peer; being at serious risk oneself as in losing the wall or running out of air in a working fire; witnessing horrifying things, such as Responders to 9/11 saw, is another risk factor; experiencing the death of a child in the line of duty; responding to a call for a victim who is known to the responder; working without the support of administration, or having administration question one’s actions in an investigation.

This ever-changing, adrenaline-fueled environment results in an overstimulation of the “fight or flight” response in the professionals responding to the crisis calls (Marmar, McCaslin, Metzler, Best, Weiss, Fagan, Liberman, Pole, Otte, Yehuda, Mohr, Meylan, 2006). In turn, the overstimulation results in a consolidating of traumatic calls into one overarching experience as well as an exaggerated fear response. These reactions are indicative of both Acute and Post-Traumatic Stress Disorder (Marmar et al., 2006). It is also common for individuals who repeatedly find themselves in high stress, volatile situations to commit every minute detail to memory (Hyler, 2011). By memorizing the minutiae, first responders are able to learn from the situation and better able to prepare for similar situations in the future. However, it also means they have more material to revisit if they experience a trauma reaction.
Research supports the idea that first responders experience a variety of trauma response symptoms ranging from unwanted emotional response to a diagnosis of PTSD. It has been found that as much as 64% of first responders have experienced “significant emotional distress” directly related to an incident occurring in the line of duty (Hyler, 2011). While these distressing incidents include the trauma calls to which these individuals respond, it also includes other areas. It has been found that these professionals are 40% more likely to experience mass casualties firsthand than other professions, nearly 70% more likely to be assaulted, and 56% more likely to find themselves in a situation that puts their life at risk (Hyler, 2011).

These types of experiences are most commonly seen as two types of stress in the first responder community, the primary emotional stress caused by the crisis call and the secondary emotional distress caused by internalizing the primary distress (Hyler, 2011). For example, when responding to a mass casualty, first responders must suppress their initial emotional response to the situation in order to provide support to those experiencing the crisis. As result of this response, the first responder may find it difficult to properly express emotions in the family or other social setting. It has been found that these types of stress result from “obviously” traumatic calls, such as mass casualties, as well as “routine” calls, such as automobile accidents.

Studies have shown that as high as 19% of police who encountered a duty-related trauma exposure met full criteria and were formally diagnosed with PTSD (Marmar, et al., 2006). Interestingly enough, studies have also shown that up to 7% of first responders experienced symptoms significant enough to meet full PTSD diagnosis criteria and as many as 34% experienced “clinically significant subsyndromal PTSD” symptoms.
Despite not meeting full diagnostic PTSD criteria, individuals in this 34% reported that the symptoms they were experience were significantly impairing their lives (Hyler, 2011).

**Trauma and PTSD in EMS Professionals**

Studies using the Peritraumatic Dissociative Experiences Questionnaires, suggest that EMS personnel are experiencing a higher rate of trauma related symptoms than other first responders (Marmar et al., 2006). Research suggests of all the first responders, who experience PTSD at a prevalence rate of approximately 7% as a whole, EMS personnel experience a widest variety and greatest intensity of symptoms. As a point of reference, according to epidemiological studies conducted by the American Psychiatric Association (APA), PTSD occurs at a rate of 8% for the average American (American Psychiatric Association, 2000). Epidemiological studies of veterans returning from Operation Enduring Freedom, commonly known as the war in Afghanistan and Iraq, suggests of the American veterans returning from Iraq, 20% are diagnosed with PTSD within the first year and 12% are experiencing active PTSD symptomology within 5 years of return (U.S. Department of Veterans Affairs, 2013). It is hypothesized the intensified experience of trauma related symptoms in EMS personnel is a direct result of having prolonged, intimate contact with injured and dying individuals (Hyler, 2011).

Furthermore, more than 23% of ambulance crews who experienced a violent assault while attempting to provide medical care to a patient develop PTSD (Richards, 2001). In this regard, the prevalence of PTSD among EMS personnel is markedly higher than their non-EMS counterparts. Comparatively speaking, violent crime victims in the
general public experience the development of PTSD at a rate of 20% (Brewin et al., 1998).

According to Emergency Medical Services Institute (EMSI), every 50 seconds a request is made for Emergency Medical Services in Southwestern Pennsylvania (The Emergency Medical Services Institute, 2012). Additionally, the Resuscitation Outcome Consortium (ROC) identifies trauma as the leading cause of death for individuals aged 1 to 44 years old in the United States, with a significant portion of these deaths resulting from system shock caused by bleeding or severe brain injury (Callaway, 2010). Similarly, cardiac arrest is universally identified as the leading cause of death for individuals in North America. For every 100,000 people, it is estimated 57 are treated by EMS personnel for cardiac arrest with a 94% fatality rate (Callaway, 2010).

Given the nature of the EMS occupation, personnel are more likely to witness a death than a person in a non-EMS profession. Through the course of their career, Paramedics are exposed to multiple patient deaths, which can be intensely graphic such as those experienced in automobile accidents and violent crimes. Patients transported by a ground have a mortality rate of 11% as opposed to a 12.6% of those transported by an air unit (Galvagno et al., 2012). However, EMS ground crew personnel experience more patient deaths despite the lower mortality rate because these units transport more patents than the air crews (Galvagno et al., 2012). The PTSD prevalence rate of 23% does not account for EMS workers who were not directly exposed to violent assaults. While EMS personnel are assaulted and exposed to threats of physical violence, research suggests violent assaults on EMS crews are one of the least common types of trauma exposures.
Although violence is less common than other trauma exposures, the experience of a violent attack may be contributing the development of post-traumatic stress symptoms.

**Cultural Considerations**

The culture of the occupation also is of notable significance when studying the effects of trauma exposure in EMS personnel. Many aspects of the cultural implications of working within the EMS field were brought to light through post September 11, 2001 research. One of the aspects of the EMS culture which potentially has a direct impact on effects of trauma exposure is the general attitude regarding mental health professional. EMS personnel as a whole view themselves as capable care providers. On the other hand, they tend to view mental health professionals as “touchy, feely” or “shrinks” (Vogel et al., 2005). This perspective is in direct opposition to the view EMS personnel hold of themselves and their coworkers. Furthermore, EMS personnel are reluctant to seek out professional mental health services. The reluctance often stems from concerns their career will be negatively impacted or seeking professional help implies weakness (Alexander & Klein, 2001). Such concerns are compounded by the negative view of the mental health professionals and decrease the likelihood of EMS personnel seeking out mental health services on an individual basis.

Another prominent aspect of the culture is the belief EMS personnel are unappreciated by the general public. The feeling of under appreciation can partly be attributed the general public’s lack of knowledge concerning the EMS profession. It is not uncommon for the highly trained EMS personnel to be referred to as “ambulance drivers” by individuals outside of the profession, which is viewed by EMS personnel as a derogatory statement (Vogel et al., 2005). This misguided concept of EMS personnel
being glorified chauffeurs is perpetuated by continued inaccurate representations of the profession in mainstream media.

The feeling of being misunderstood or undervalued can also be linked to the family units in which the EMS personnel operate. Case studies have shown EMS workers are hesitant to discuss their work with their significant others, children, and other family members (Vogel et al., 2005). The concern of sharing their work life with their families is a multifaceted one. Some EMS workers feel their spouses cannot understand the medical complexity or unique stress of the working environment, while others do not want to expose their families to the traumatic details of the calls (Vogel et al., 2005). However, the stress of the occupation surfaces in other capacities within the context of the family unit. It is not uncommon for the EMS workers to isolate from their families after experiencing a “bad call” or to become overly concerned about their family’s physical well-being, especially that of their children (Vogel et al., 2005).

**Summary**

The closed culture of the EMS profession makes it difficult to assess the impact of trauma exposure. While it is understood that trauma exposure is a regular occurrence within the profession, the attitudes and norms of the culture do not easily allow for the exposure to be processed. As a result, many of the trauma reactions go unaddressed, impacting the emotional well-being of the EMS personnel who experienced the trauma. The unaddressed trauma reactions could cause the impacted professionals to become a liability to their employers and a risk to the community. Untreated trauma symptoms have been shown to dramatically affect people’s lives in a variety of fashions, including sleep loss, poor concentration, and exaggerated startle responses. EMS personnel with
unaddressed trauma responses who are actively experiencing symptoms such as sleep loss, poor concentration, exaggerated startle response, and intrusive thoughts become a liability when these symptoms interfere with their ability to provide prompt, quality care to their patients. Furthermore, the poorly addressed reactions bleed over into multiple areas of the individuals’ lives, such as family systems and social environment, causing a snowball effect.
CHAPTER 3

Overview

This chapter focuses on the protocol and procedures of this study. The study used instruments specifically designed to identify potential trauma reactions as well as measuring the intensity of those reactions. Furthermore, the recruitment protocols and participant breakdowns are included in this chapter. Approval was obtained from Duquesne University’s Institutional Review Board (IRB) in order to conduct this study. Relevant IRB documents can be found in Appendix A1.1.

Hypotheses

This study hypothesizes:

1) Emergency Medical Services professionals are experiencing post-traumatic stress symptoms at a higher rate and with greater severity than the general population,

2) Paramedics report experiencing post-traumatic stress symptoms of greater intensity than their Emergency Medical Technician counterparts,

3) Emergency Medical Services workers in rural settings report experiencing post-traumatic stress symptoms of greater intensity than peers who work in an urban setting,

4) Male Emergency Medical Services workers report experiencing post-traumatic stress symptoms of greater intensity than their female counterparts, and

5) There is a correlation between the severity of measured post-traumatic stress symptoms and the length of time employed in the Emergency Medical Services profession.
Should these hypotheses prove to be supported, the repercussions could be significant, indicating a review of the current trauma exposure protocols in the EMS field.

**Procedures**

Data was collected from adults who identified themselves as an active professional member of the EMS profession. The participants were recruited from multiple sites in southwestern Pennsylvania.

Although the study screened for symptoms indicative of PTSD, it in no way attempted to diagnose participants with PTSD or any other disorder. Self-identified occurrence of symptoms, such as hypervigilence, avoidance behaviors, and nightmares, were used to classify problematic and healthy responses to the traumatic events which the EMS personnel were exposed to and impacted by.

**Recruitment Procedures**

Recruitment was carried out electronically. Respondents were sent an e-mail through their respective affiliations’ company list serve. The e-mail contained a brief description of the study and an electronic link through which they could voluntarily participate. The recruitment e-mail can be found in Appendix A1.2.

Those email recipients who chose to participate in the study were prompted to follow the electronic link to the instruments. Once the link was accessed, participants were directed to an informed consent page. By marking the box at the bottom of the screen, participants indicated acknowledgment of the consent and were permitted to access the demographic form. The informed consent can be found in Appendix A1.3.
No identifying information (i.e. name, DOB, address, etc.) was collected from participants. Identifying information was not collected as a means to further ensure the anonymity of the participants. Taking additional steps to ensure anonymity encouraged participation and accurate reporting of respondents.

**Resource List**

A resource list was offered at the beginning of the survey. Participants were encouraged to save or print a copy of this resource list for their personal files. It was important to provide support resources at the beginning of the survey in the event a participant experienced an unwanted emotional reaction and chose to withdraw from the study by exiting the survey before completion. By adding a resource list at both the beginning and end of the study, participants were provided access to potential support regardless of their willingness and ability complete the study in its entirety. The resource list can be found in Appendix A1.4

**Demographic Form**

The demographic form was designed specifically for the study. It focuses on general demographic information (e.g. age, race, gender, etc.) as well as areas of specific interest to the researchers such as career length and chronic health issues. Appendix A1.5 contains the form in its entirety. Once the participants completed demographics reporting, they were directed to the next instrument.

**Primary Care PTSD Screen (PC-PTSD)**

The Primary Care PTSD Screen (PC-PTSD) is a 4 item measure used by professionals to conduct initial screenings for PTSD. For each item, the respondent can answer either “Yes” or “No.” Currently, the PC-PTSD is used by primary care providers
in order to determine if a referral is needed for further assessment and is the primary initial assessment administered by the National Center for PTSD and the Veterans Association. Written permission was obtained from the National Center for PTSD of the United States Department of Veterans Affairs to use the PC-PTSD assessment. The complete PC-PTSD assessment can be seen in Appendix A1.6.

The PC-PTSD has high test-retest reliability with a Spearman correlation of .87 with a CI of .05 (Kimerling & Trafton, 2005). By implementing a cut-off score of 3 out of 4, the PC-PTSD reports a maximized efficacy and specificity scores of .85 and a sensitivity score .83 (Calhoun et al., 2010). The PC-PTSD is currently the only screen used by the VA for identifying veterans in need of additional screenings due to its high validity and reliability scores (U.S. Department of Veteran Affairs, 2011).

Should an individual being screened for PTSD in the general public have a “positive” screen, a screen on which the respondent answers “Yes” to 3 or more questions, it is recommended he or she undergo more extensive assessments, including a structured interview by a professional for rule out diagnosis of PTSD. However, all study participants were directed to an additional screen containing the Post-traumatic Stress Disorder Checklist-Civilian Version (PCL-C). At this time, the participants were instructed to provide more information about the traumatic experience by completing the PCL-C. Participants who had a “negative” PC-PTSD were also asked to complete the PCL-C in order to compare their summative scores to participants with a “positive” screen.

*Post-traumatic Stress Disorder Checklist-Civilian Version (PCL-C)*
The PCL-C is a self-administered measure containing 17 items used to identify the degree to which an individual is experiencing trauma response reactions. The Post-traumatic Stress Disorder Checklist has three version available for administration, Military, Civilian, and Specific. Written permission was obtained from the National Center for PTSD of the United States Department of Veterans Affairs to use the PCL-C assessment.

The Military version is used to screen war veterans returning from active duty for combat related trauma. The Specific version is used for individuals who have been exposed to a singular “stressful” event (i.e. natural disaster, terroristic act, violent crime). The Civilian version of the PCL is the most general assessment and can be used with any individual suspected of experiencing a trauma exposure. The Civilian version of the assessment is used identify trauma exposure in individuals. The exposure does not have to be related to a specific event but rather asked about general “stressful” experiences encountered. Responses can be based on a specific event or a compilation of events at the discretion of the respondent. The PCL-C was administered to study participants because they participants were not providing care in a warzone nor were they being asked to respond to their experience of a singular experience. The PCL-C, which can be found in its entirety in Appendix A1.7, was most appropriate of the three versions to collect accurate information on a variety of possible traumatic events.

Participants were directed to respond to the 17 items of the PCL-C by rating them on a five-point Likert scale ranging from “1” or “Not At All” to “5” or “Extremely.” Respondents were also instructed to respond to the items within the context of their occupation, disregarding other “stressful” events they may have experienced outside of
the workplace. While the measure collected general information about any trauma exposure, participants were given the opportunity to identify one specific event they considered most troublesome.

Responses to the items comprise the total symptom severity score for the PCL-C, which can range from 17 to 85 based on the summation of individual items. There is a suggested cutoff for total symptom severity score of 44 for those in the general population to qualify for a presumptive PTSD diagnosis; however, significant impairing symptoms can be identified with a score ranging from 35-43 (National Center for PTSD, 2012). Symptoms experienced with a severity range of 35-43 are considered to be subsyndromal for a PTSD. The suggested cutoff scores were used to measure both prevalence and severity of the participants’ symptoms. Individuals with a total symptom severity score of 44 or higher were considered to have a presumptive PTSD diagnosis per the PCL-C administration and assessment manual. Similarly, participants with a severity score ranging between 35 and 44 were considered to be experiencing significant subsyndromal responses or “at risk” for the purposes of this study.

A presumptive PTSD diagnosis is given to those with a symptom severity score exceeding the population’s suggested cutoff in the absence of a structured interview such as the Clinician Administered PTSD Scale (CAPS) (National Center for PTSD, 2012). Due to the fact a CAPS or other structured interview was not administered in this study, only informal, presumptive diagnoses could be given to participants to be used a means of comparison.

A follow-up question was added to the end of the PCL-C inquiring as to whether the participant believed he or she was experiencing trauma symptoms after completing
the study. These responses were compared to the participants’ initial responses on the demographic form.

**Participant Debriefing**

After completing the PCL-C, participants were directed to a debriefing page. The debriefing page extended the researchers’ gratitude for the participants’ time, as well as provided a list of resources should the participant experience any troubling emotions related to their participation. Appendix A1.8 contains the debriefing statement. These resources included local crisis hotline phone numbers, suicide prevention hotline phone numbers, and information about contacting their facility’s EAP. Appendix A1.9 contains a copy of the PTSD Care Note that was offered to participants via hyperlink. This resource contains basic information on PTSD and treatment options.

**Participation Risk Factors**

Participant risk was considered to be minimal for this particular study. The respondents were not asked to provide identifying information in order to ensure the confidentiality of the participants. One potential risk associated with completing the study was connected to the subject matter of the surveys. There was a potential to raise difficult or troublesome thoughts and emotions related to the trauma exposure. As a precaution, a list of local support and crisis resources were provided to the participants. These resources were capable of providing appropriate support for the any respondents experiencing unwanted thoughts or emotions as a result of their participation.

**Participants**

For the purpose of this study, individuals currently working on an active EMS ground transport team where surveyed. Responses were gathered from both EMTs and
Paramedics. While EMTs work on the same crews as Paramedics, they are less likely to be directly exposed to the same type of events. Due to the level of education, training and expertise, Paramedics are charged with providing direct care for Advanced Life Support patients. Such patients have been screened by 911 operators and determined to be experiencing a medical crisis of a greater intensity or complexity and/or with a higher occurrence of fatality than patients identified as Basic Life Support, who present in a more stable condition. Generally speaking, EMTs provide direct care for Basic Life Support patients. Additionally, Paramedics have actively worked in the EMS field for a longer period of time than their EMT counterparts. Because Paramedics often have a more extensive work history, they also have a higher likelihood to have been exposed to a variety patients and events than an EMT.

Data Analysis

Several variables and factors were compared during the analysis of the data collected. In consideration of the study’s research question, the prevalence rate of PTSD of the EMS respondents was compared to that of the prevalence rate of the general public of the United States. The EMS rate was based on the number of respondents that were given a presumptive diagnosis of PTSD based on the responses they provided during their study participation.

The EMS respondents were then divided into several subgroups. EMT and Paramedic respondents were separated in order to compare their scores in order to further investigate the second research question. Additional comparisons were made between subgroups within the EMT and Paramedic categories. Respondents were further divided into the following categories based on their demographic responses: gender, job position,
and primary working area. Analysis was also conducted to determine whether or not a correlation between career length and severity of post-traumatic stress symptoms existed. Participants’ responses regarding their belief of whether or not they are currently experiencing trauma symptoms were gathered before and after the completion of the instrumentation and compared.

**Summary**

The study separated the information gathered from EMS personnel into a variety of subcategories for more efficient and in-depth data analysis. The summative PCL-C scores were used as the primary means of comparison of these subgroups. By separating participants into subcategories (i.e. gender, primary work area, and job title), data was extracted which used to directly address the hypotheses and research questions.
CHAPTER 4

*Overview*

This chapter focuses on the participants’ demographic information and instrument responses. Data in this section has been reported and analyzed. Information has been organized in regards to the various hypotheses.

*Demographic Variables*

There were 119 respondents to the electronic survey. Of those 119 respondents, 102 completed the survey in its entirety. The 17 participants, who failed to complete the Post-traumatic Checklist (PCL-C), were not included in the data analysis because their responses did not provide a summative score for the PCL-C. Because they had no summative score, their results could not be compared to the other participants’ results. The exclusion of these 17 participants resulted in an 85.71% completion rate.

Of the remaining 102 participants, 34 were female and 68 were male. Participants’ ages ranged from 18 to 59, (m=42, SD=10). The population was homogenous in terms of race as all participants identified themselves as being Caucasian. Family make-up for the participants ranged from 0 to 7 children, (m=1.14). Data regarding marital status and chronic health conditions can be found in Tables 1 and 2 below.

It is important to note that participants were able to identify more than one chronic health problem. Participants were also able to identify chronic health issues which were not listed under the “other” option. In this section, participants reported experiencing asthma, Crohn’s Disease, Grave’s Disease, colitis, various cardiac problems, fibromyalgia, chronic pain, and anorexia/bulimia.
Table 1  
*Marital Status According to Gender*

<table>
<thead>
<tr>
<th>Gender</th>
<th>Single</th>
<th>Married</th>
<th>Divorced</th>
<th>Remarried</th>
<th>Widowed</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>12</td>
<td>13</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>34</td>
</tr>
<tr>
<td>Male</td>
<td>17</td>
<td>36</td>
<td>12</td>
<td>2</td>
<td>0</td>
<td>68</td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>49</td>
<td>17</td>
<td>5</td>
<td>2</td>
<td>102</td>
</tr>
</tbody>
</table>

(N=102)

Table 2  
*Chronic Health Problems*

<table>
<thead>
<tr>
<th>Total (N=102)</th>
<th>None</th>
<th>Anxiety</th>
<th>Cancer</th>
<th>Depression</th>
<th>Diabetes</th>
<th>HBP</th>
<th>Obesity</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>33</td>
<td>5</td>
<td>29</td>
<td>6</td>
<td>26</td>
<td>30</td>
<td>14</td>
<td></td>
</tr>
</tbody>
</table>

The other area the study gathered information concerning the participants' career.

Information regarding PCL mean summative scores can be found below in Tables 3 and 4. The career length of the participants ranged from .5 years to 44 years, (m=16.51, SD=10.05).

Table 3  
*PCL Scores According to Cutoff Ranges*

<table>
<thead>
<tr>
<th># of Participants</th>
<th>17-34</th>
<th>35-43*</th>
<th>44+ **</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total (N=102)</td>
<td>70</td>
<td>10</td>
<td>22</td>
</tr>
</tbody>
</table>

*“At Risk” Score  **Presumptive Dx. Score*

Table 4, seen below, can be used a reference for data concerning Hypotheses Two through Four throughout the remainder of this chapter.
Table 4

*Mean PCL Scores According to Demographics*

<table>
<thead>
<tr>
<th>Demographic Factor</th>
<th>Mean (M)</th>
<th>SD</th>
<th>N (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>32.76</td>
<td>14.07</td>
<td>68</td>
</tr>
<tr>
<td>Female</td>
<td>29.76</td>
<td>12.72</td>
<td>34</td>
</tr>
<tr>
<td>Primary Work Setting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>34.14</td>
<td>14.56</td>
<td>58</td>
</tr>
<tr>
<td>Urban</td>
<td>29.30</td>
<td>12.87</td>
<td>44</td>
</tr>
<tr>
<td>Position</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EMT</td>
<td>33.03</td>
<td>13.92</td>
<td>34</td>
</tr>
<tr>
<td>Paramedic</td>
<td>31.13</td>
<td>14.04</td>
<td>68</td>
</tr>
<tr>
<td>Total (N =102)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Trauma-Related Variables**

Participants were asked to complete a Primary Care PTSD Screen. Individuals who responded “yes” to 3 or more of the 4 questions are generally referred for a formal PTSD evaluation. Of the 102 participants, 33 answered “yes” to 3 or more of the 4 questions and would qualify for a formal PTSD evaluation. All of the 22 participants with a qualifying summative score for a presumptive PTSD diagnosis on the PCL-C had a positive screen on the Primary Care PTSD Screen.

**Hypothesis One**

Summative PCL-C scores for the respondents ranged from 17 to 69, (M=31.76, SD=13.96). In general, summative PCL-C scores range from 17 to 85, with individuals scoring 44 or higher qualifying for a presumptive diagnosis of PTSD. Of the 102 participants, 22 had a PCL-C summative score of 44 or higher, or 21.57%. Comparatively speaking, there is a prevalence rate of approximately 8% for PTSD in the general population of the United States. Additionally, 10 participants, or 9.8%, scored between 35 and 43. These participants were considered to be experiencing significant
subsyndromal symptoms as a result of their trauma exposure. Study results suggest EMS personnel report experiencing PTSD and significant subsyndromal symptoms at a rate higher than their non-EMS counterparts.

**Hypothesis Two**

This study also hypothesized Paramedics report experiencing post-traumatic symptoms of greater severity than EMTs. Results suggest as a whole, EMTs have a higher average summative score than Paramedics. EMTs had a mean summative PCL-C score of 33.03 with a SD of 13.92; whereas, Paramedics had a mean summative PCL-C score of 31.13 with a SD of 14.04. Based on t-test results, no statistically significance difference was found in the PCL-C scores of Paramedics and EMTs and hypothesis two was not supported ($t$($100$) $= .520$, $p > .05$, ns).

**Hypothesis Three**

It was also hypothesized that EMS personnel in rural areas report experiencing post-traumatic stress symptoms of greater severity than their urban counterparts. Based on t-test results, no statistically significance difference was found in the PCL-C scores of participants from rural areas and those in urban areas ($t$($100$) $= .120$, $p > .05$, ns). EMS personnel working in rural settings had mean summative score of 34.14 with a standard deviation of 14.56 and those working in urban settings had a mean summative score of 29.30 with a standard deviation of 12.87. Hypothesis three was not supported.

**Hypothesis Four**

The study hypothesized male participants would report experiencing more severe post-traumatic symptoms than female respondents. Male participants had a higher overall summative PCL-C score ($m=32.76$, $SD=14.07$) than female participants ($m=29.76$, $SD=12.87$).
Based on t-test results, no statistically significance difference was found in the PCL-C scores of male and female participants and hypothesis four was not supported ($t(100) = .309, p > .05, \text{ns}$).

**Hypothesis Five**

The study hypothesized that there would be a correlation between the career length and reporting of post-traumatic stress related symptoms. The study results suggest, 20 of the 22 qualifying summative PCL-C scores fall within one standard deviation of the mean career length, ($m=16.51, SD=10.05$). Based on Pearson correlation analysis results, no statistical correlation was found to exist between severity of measured post-traumatic stress symptoms and length of time working in the EMS field ($r(102) = -.04, p > .05, \text{ns}$). Hypothesis five was not supported.

**Perception of Current Coping Ability**

Participants were also asked, “I believe I am currently experiencing difficulty coping with a traumatic event that occurred at work; yes or no?” This question was asked before participants were prompted to complete the PCL-C and repeated after they completed the PCL-C. Before completing the PCL-C, 17 respondents felt they were experiencing difficulties coping with a traumatic event and 85 felt they were not experiencing difficulties coping with traumatic experiences. After completing the PCL-C, 21 respondents felt they were experiencing difficulties coping with a traumatic event and 81 felt they were not experiencing difficulties.

During data analysis, participants’ responses to the perception of coping difficulties and the PCL summative scores were also compared. Of the 17 individuals who reported feeling as if they were experiencing difficulty coping with trauma
symptoms before completing the PCL-C, 10 of those individuals had a qualifying summative score for a presumptive PTSD diagnosis. Of those 10 individuals who believed they were having difficulties coping and had a qualifying summative score, 9 reported feeling as if they were having difficulty coping after completing the PCL. There were 12 respondents who reported having no difficulty coping with trauma related symptoms before completing the PCL-C who had a qualifying summative score for a presumptive PTSD diagnosis. Of those 12 respondents, 10 reported they had no difficulty coping with trauma related symptoms after completing the PCL-C.

Summary

Data analysis suggests the first hypothesis, which was designed to address the first research question, was supported. The remaining hypotheses, designed to address the second research question, were not supported due to lack of statistical significance. Interpretation of data analysis, study limitations, and researcher suggestions can be found in Chapter 5.
CHAPTER 5

Introduction

The study focused on two primary research questions:

What is the prevalence and severity of post-traumatic stress symptoms in Emergency Medical Services (EMS) professionals?

Are there differences in reported post-traumatic stress symptoms of Emergency Medical Services professionals based on certain demographic (gender, primary working area, job position, or length of career) characteristics?

In order to address the first research question, the study focused on the PTSD Checklist (PCL-C) summative scores for participants as these scores could be used to categorize severity of post-traumatic symptoms as well as track prevalence rates.

To address the second research question, the study again looked the PCL-C summative scores, breaking them down into the demographic categories of gender, primary work area, job position, and length of career in order to determine whether or not a significant difference would be found in the summative scores of participants based on their demographic information. T-test and Pearson correlation data analysis found no significant statistical difference in the summative scores of the participants. Hypotheses two through five suggesting there would be a difference in summative scores based on demographics (i.e. gender, job title, primary work environment, and career length) were not supported.

Hypothesis One

It was hypothesized that EMS personnel are experiencing severe post-traumatic stress symptoms at a higher rate than individuals in the general population. PCL-C
summative scores for study participants show 22 of the 102 participants submitted responses that resulted in a summative score which would qualify for a presumptive Post-traumatic Stress Disorder (PTSD) diagnosis. Based on these scores, approximately 21% of the EMS participants meet criteria for a presumptive diagnosis of PTSD. The PCL summative scores of the EMS respondents suggest PTSD prevalence rate higher than the general American population and other first responders. The study participants’ qualifying PCL summative scores are comparable to those of veterans, a group which has been historically touted as one of the most at-risk populations for PTSD. American veterans returning from active combat zones are more likely than be given a diagnosis of PTSD than an individual in the general population. Research suggests of the American veterans returning from Iraq, 20% are diagnosed with PTSD within the first year and 12% are experiencing active PTSD symptomology within 5 years of return (Department of Veteran Affairs, 2013). Additionally, 9.8% of study respondents were found to be “at risk” for PTSD based on their PCL summative scores, which suggested these individuals were experiencing significantly impairing subsyndromal symptoms as a result of their trauma exposure. The findings of the study suggest EMS personnel are experiencing post-traumatic stress symptomology which meets diagnostic criteria for PTSD at a higher rate than the general population as well as other first responders, supporting the first hypothesis.

**Hypothesis Two**

The second hypothesis proposed that Paramedics report experiencing post-traumatic symptoms of greater intensity than their Emergency Medical Technician (EMT) counterparts. T-test analysis determined no statistically significance difference in
PCL summative scores for these groups. While there was no significant difference in mean scores, it is interesting to note Paramedics had more instances of qualifying scores for presumptive PTSD diagnosis than the EMTs. It was hypothesized that Paramedics would experience more severe symptoms due to their direct exposure to more Advanced Life Support (ALS) calls, which are generally considered more traumatic. However, there are several possible explanations as to why EMTs had a higher average score.

Based on the overall data produced by the study, it is believed the general milieu of the environment contributed to the EMTs overall experience. Paramedics are generally considered to have greater trauma exposure due to the fact that they are providing direct care to individuals in need of ALS services. However, EMTs are still present and indirectly responding to ALS calls. The EMTs’ higher average summative score could be a result of a perception related to lack of control. While EMTs are present for ALS calls, Paramedics are charged with providing with direct services, essentially rendering the EMT a bystander. If an EMT perceives himself as having less control over a traumatic experience, he may have greater post-traumatic stress response than the Paramedic with whom he is working.

It is also possible the EMTs are vicariously responding to the post-traumatic stress symptoms of their Paramedic partner. The long shifts and close quarters in which EMS workers operate make Paramedic and EMT partners readily available peer supports. Being that Paramedics had more instances of presumptive PTSD diagnoses than EMTs, it is reasonable to assume some of the Paramedics’ post-traumatic symptoms are impacting their EMT counterparts. The EMTs’ post-traumatic stress experience may be influenced by Paramedics’ discussion of the post-traumatic stress symptoms they are experiencing.
Future research may be able to determine whether or not difference in perception of control impact EMTs’ and Paramedics’ experience of trauma exposure responses.

**Hypothesis Three**

The third hypothesis proposed EMS workers in rural settings report experiencing post-traumatic stress symptoms of greater intensity than peers who work in an urban setting. T-test analysis of data determined no significant difference in the scores of participants who primarily worked in the rural areas and those who primarily work in urban areas. However, based on the data, the lack of statistical significance can potentially be attributed to the small sample size. Based on results of the t-test, a larger sample size would have likely supported the hypothesis.

Study results determined EMS personnel working in primarily rural areas had more instances of presumptive PTSD diagnoses than those working in primarily urban areas. This may be because they have fewer resources than urban EMS personnel. Notably rural EMS personnel have less access to Employee Assistance Programs (EAPs). Many of the rural EMS facilities in southwestern Pennsylvania, where the study was conducted and presumably where most of the respondents work, are small and do not have EAP services. These small companies seem to primarily rely on peer supports and Critical Incident reporting, both of which have proven to be largely ineffective due to poor implementation. Conversely, it is believed urban EMS personnel have more access to services such as EAPs. This is thought to be especially true for participants working in Pittsburgh’s urban setting as many of these professionals are affiliated with one of the country’s most highly acclaimed medical communities. Individuals who work for one of the hospitals in this system have access to EAPs and other high quality care.
**Hypothesis Four**

The fourth hypothesis proposed male EMS workers report experiencing post-traumatic stress symptoms of greater intensity than their female counterparts. T-test analysis of the average PCL-C summative scores shows the difference was not statistically significant. Again, the lack of statistical significance is being contributed to a small sample size. The data suggests the results were trending towards supporting a significant difference, had there been a larger sample size statistical significant would likely have been supported.

It is not surprising that the male participants had more instances of presumptive PTSD diagnoses than female participants. In general, research suggests men are more susceptible to post-traumatic stress symptoms than women. Additionally, men within the EMS culture are generally less likely to seek support when experiencing problematic symptoms. The EMS culture perceives the experience of trauma symptoms as an occupational hazard which they accept as normal rather than address. It also appears that the experience of post-traumatic stress symptoms is regarded as a hallmark or a rite of passage for EMS workers. The experience of symptomology grants the professional full initiation into the closed EMS culture, a culture which discourages seeking support from those outside of the cultural milieu.

**Hypothesis Five**

The final hypothesis proposed there would a correlation between the severity of measured post-traumatic stress symptoms and the length of time employed in the EMS profession. Pearson analysis supports neither a positive or negative correlation between severity of post-traumatic stress symptoms and length of time employed in the EMS field.
The lack of statistical significance is both interesting and important to note. Had there been a correlation, postulations could be made regarding how the frequency of the trauma exposure impacts the experience of trauma response symptoms. One notable trend regarding impact of career length on summative scores was a majority of the summative scores qualifying for a presumptive PTSD diagnosis fell within one standard deviation above the mean for career length. This trend would suggest while there is no notable correlation, there seems to be a window of time where EMS professionals are particularly susceptible to post-traumatic stress symptoms. Alternately, the high frequency of presumptive diagnoses may have little to do with the fact that these professionals have been in the field between 16 and 27 years. There may be a particular characteristic these professionals share or lack that is contributing to the severity of their post-traumatic stress symptoms.

**Study Limitations**

One of the most notable limitations of the study was the low response rate. The lack of statistical significance may be attributed to low participation. While statistical significance was not supported based on the responses submitted by the 102 participants, there is a possibility that statistical significance would be supported with a larger response rate.

The second most notable limitation is the lack of racial diversity. Homogeneity of the participants makes it difficult to interpret the generalizability of the results. The study was conducted in Pennsylvania with many the respondents presumably hailing from rural Southwestern Pennsylvania, an area primarily dominated by Caucasian population. The study results could presumably be generalized easily and accurately to this area and
similar areas. However, it is uncertain how the results accurately the results would generalize to other areas of the country which have a more diverse racial breakdown.

**Future Research Recommendations**

There are too few studies which focus solely on the EMS field and post-traumatic stress experience of its personnel. The United States Department of Labor projects a 33% increase in EMS personnel over the next decade. Being that the study findings suggest EMS personnel are frequently experiencing post-traumatic stress symptoms suggestive of PTSD, further research is warranted. The expansion of the EMS field means an influx of individuals into an at-risk population. An influx could potentially stress an already underserved population operating in an environment with multiple barriers to treatment. An extension of the existing body of research would provide a clearer understanding of the challenges this particular population faces in regards to experiencing and successfully addressing post-traumatic responses.

Based on the findings, there are several suggestions. The first suggestion is to conduct the study again with a larger targeted population. By expanding the population to which the study is offered the likelihood of finding statistical significance between demographic subgroups increases. Such findings could provide invaluable insight into the post-traumatic stress experience of EMS personnel. Additionally, repeating the study may result in a more heterogeneous sample in terms of racial diversity. While the sample for this particularly study was racially homogeneous, it is important to note that the demographic breakdown is representative for the southwestern Pennsylvanian EMS field. A more racially diverse pool of respondents; however, would bolster the generalizability
to other areas which have more variability than southwestern Pennsylvania. Both statistical significance and generalizability of results are essential when building upon the current body of research.

Future studies could also potentially focus on how the experience of post-traumatic stress impacts the professional and personal lives of EMS personnel. Given that PTSD can radically impact different areas of the lives of those diagnosed, it is not unreasonable to assume the lives of EMS personnel are being impacted by their post-traumatic stress symptoms. If the post-traumatic symptoms EMS personnel are experiencing are impacting their ability to provide consistent care or their interpersonal relationships, there could be a radiating impact on not only the EMS field, but on the family units to which these professionals belong.

If future research is conducted there needs to be an additional focus placed on studying the impact of frequency, duration and intensity of trauma exposure on EMS personnel. These three factors have been proven to influence the experience of post-traumatic stress. However, the based on the results of this study, there does not appear to be a correlation between frequency, duration and intensity of trauma exposure and the reported post-traumatic stress symptoms. EMS personnel are experiencing a high rate of severe post-traumatic stress symptoms as a whole regardless of job and career length. The results suggest there is something inherent to the EMS profession that influences severity and prevalence of post-traumatic stress symptoms which was not identified in the study. This unaddressed variable is not immediately apparent. It may be a trait which EMS professionals share or lack. A targeted study focused on EMS personnel who have been in the profession between 16 and 27 years, the group of individuals who experienced the
highest frequency of presumptive PTSD diagnoses, may hold the key to identifying this unknown variable.

Research must also begin to explore more effective practices for treating post-traumatic stress symptoms in EMS personnel. It is essential for future researchers to build an in-depth understanding of evidence-based practices which can be implemented on a wide-scale to combat the growing issue of trauma exposure responses in this occupation. Identifying the core of the issue is only the first step in rendering support to these professionals. The research community and mental health professionals are charged with the task of developing effective practices. Without studies focused on the efficacy of evidenced-based practices, mental health professionals are left with little direction on how to best approach the issue in question. There has been an attempt in the field to use practices such as Critical Incident reporting; however, based on the current body of research these practices are poorly implemented and found to be largely ineffective. Future researchers should strive to identify screening practices which are more effectively implemented within the EMS field. Once effective screening practices have been found, the focus of the research needs to shift to searching for cost-effective treatment modalities to treat the identified symptoms.

Research focusing on post-traumatic growth (PTG) has identified some promising theories that could lend themselves well to this type of research. PTG focuses on positive changes some individuals experience after experiencing a traumatic event. Theories suggest there are certain characteristics individuals who experience PTG exhibit. Research suggests there are cost-effective, easily implemented practices which can be used to develop and strengthen these traits in individuals. Being that the trauma
exposure cannot be eliminated from the EMS field due to the nature of the profession, PTG offers a useful alternative. Instead of eliminating or minimizing trauma exposure, EMS administrators can focus on implementing programs which foster the development of the personality characteristics and habits associated with PTG.

**Policy Change Recommendations**

In addition to conducting more research, wide-scale policy changes in the EMS field can be used to address the issue of post-traumatic stress symptoms. When considering the implementation of new policies EMS administrators need to focus on two distinct groups; those who are currently employed and active in the profession and those who will be joining the profession over the next decade. The needs of these two groups are distinctively different, thus requiring different approaches in order to effectively meet their needs.

It is apparent individuals who are currently working in EMS field are experiencing severe post-traumatic stress symptomology at a high rate. Such data highlights the need for decisive and immediate action on the part of EMS administrators and the Department of Health, which influences the development of policies governing EMS and pre-hospital professionals. One policy change which can be used to address post-traumatic stress symptoms in currently active EMS professionals is increasing and streamlining access to EAP services. If EMS professionals can easily access services through their employer, they may be more likely to seek services than they would be if they have to make arrangements to access services without the guidance and support of their facility. Increasing the knowledge regarding what symptoms employees are experiencing and the impact of those symptoms gives companies the ability to implement
more effective screening tools. The use of EAP services will also allow companies to focus on specific recurring themes within their company by developing targeted services to address the difficulties their employees are facing.

On a wider scale, the Department of Health can make changes to the EMS licensing requirements. Continuing Education Credits can easily be used to address the knowledge deficit that seemingly exists in the field. Participants in this study appeared to have some awareness they are experiencing problematic symptoms but seem lack the knowledge regarding how those symptoms are indicative of chronic conditions such as PTSD. This theory was developed based on participants’ responses to the perception of coping ability posed before and after the completion of the PCL-C. Continuing Education courses can be used to educate EMS professionals on identifying problematic trauma exposure responses and PTSD. It is theorized better informed professionals will have an increased awareness of how their symptoms are impacting their overall life experience. An increased awareness can empower EMS employees to seek support before problematic symptoms develop into a chronic condition which has a significant impact on their lives.

In terms of minimizing the experience of post-traumatic stress symptoms in future EMS professionals, an early intervention approach is suggested. While Continuing Education courses can be used to address the issue in active EMS professionals, the addition of courses to the required licensing curriculum can be used with aspiring EMS professionals. The addition of courses focusing on identifying post-traumatic stress responses and the importance of professional self-care will build a foundational knowledge base before the professionals are exposed to trauma in the field. It is also
believed that by adding such courses to the initial EMS curriculum a new mindset will develop within the upcoming generation of EMS professionals. Early intervention and education will remove the stigma from seeking support. If rising professionals do not view seeking professional support for trauma exposure responses as being stigmatizing, they are more likely to reach out for support when they encounter a problematic response to the trauma exposure they will inevitably experience in the field.

There are also suggestions for policy changes which will benefit both the currently active and rising EMS professionals. The first suggestion is to change how support services are offered to professionals experiencing difficulties in order to make the services more effective. A multilayered approach is suggested. It would seem that facilities currently rely heavily on peer support. Such an approach offers invaluable and irreplaceable support for EMS professionals as peer supports are professionals from within the EMS culture who are intimately familiar with the EMS experience. However, it is possible these supports can be used in a more effective manner. In addition to the informal support which is offered from co-workers, the development of support groups would offer an arena within the culture for professionals to share their experience. Not only would a group offer additional support to EMS professionals, but it would normalize and de-stigmatize the experience of trauma responses. A support group facilitated by a retired EMS professional or an EMS course instructor could provide a powerful, meaningful experience for an active professional who is addressing post-traumatic stress symptoms. A retired professional or course instructor understands the EMS culture and experience but is far enough removed to offer objective insight.
Companies can also require regular psychological screenings in addition to their annual physicals. Addressing the issue in terms of a required screening places the responsibility on the company to detect problematic symptoms rather than on the individual employees. If employees are reluctant or fearful to seek services on their own, they can rely on the annual screen to alert their care provider of potential issues, who will then intervene. Similar screenings are required by law enforcement and have proven to be beneficial in regards to identifying problematic responses after a trauma exposure. Also, by making it a requirement, companies demonstrate a commitment to the well-being of their employees and highlight the importance of self-care. This commitment has long-term benefits for the company. Not only will it ensure a healthier, more productive workforce, it can be used to mitigate the liabilities which arise from an unhealthy workforce which may be providing substandard care.

Offering regular access to mental health professionals adds an additional layer of support to the multilayered support structure which is suggested. Professional supports outside of the peer support provide another dimension in addressing post-traumatic symptoms more effectively. Peer supports offer invaluable insight into and a common language surrounding the EMS experience; however, the support of a mental health professional offers an objective, clinical perspective. Mental health professionals also are more likely to have access to resources and referrals EMS peer supports lack.

Mental health professionals also have the ability to successfully bridge the gap between the EMS culture and the outside community. This is especially important for EMS professionals who are experiencing trauma responses which are impacting their life outside of work. Given the nature of post-traumatic response symptoms, it is likely EMS
professionals experiencing severe symptoms are experiencing difficulties within their families, other interpersonal relationships, and daily functioning. Seeking the support of a mental health professional gives these professionals the platform through which they can address the implications for their lives outside of their profession in an effective manner. Similarly, it gives their family members and other supports to explore how the post-traumatic stress experience has impacted them and their relationship with the EMS professional. The involvement of a mental health professional also serves as a conduit through which families can learn about post-traumatic stress symptoms, specifically how to provide support to a loved one who is working to address problematic post-traumatic stress responses.

One potential barrier to successfully implementing the proposed policy changes is cost. The policy changes of adding classes to the training curriculum, annual screenings, and professional support results in companies and professionals incurring additional fees. However, early intervention can be cost effective long-term. Early intervention of this nature gives professionals the tools to recognize and address issues before they develop into chronic conditions. This recognition could result in fewer professionals experiencing unaddressed post-traumatic stress symptoms which impact their health, ability to work, and interpersonal relationships. It would follow that professionals experiencing fewer symptoms of less intense severity would result in a healthier, more reliable workforce. Healthier workforces more cost effective and profitable than their impaired counterparts. In short, the cost of early intervention policy changes should be framed as a profitable long-term investment.
Another policy change suggested based on the study results is the development of a Western Pennsylvania EMS and Pre-Hospital PTSD Taskforce. This committee could spearhead policy changes while developing early intervention protocols and education curriculum. If created by the Pennsylvania Department of Health or the Emergency Medical Services Institute, the taskforce would also be to obtaining funding on a much larger scale than any individual facility would be able to obtain. Ultimately, the availability of funds will drive what policy changes can be implemented and what research can be conducted. An undertaking of this magnitude will require a great deal of funding, which is not realistically available without the support of entities such as the Department of Health. As a reference, the Department of Veteran Affairs spent in excessive of $2 billion in 2012 to research and treat PTSD in veterans, a population with similar PTSD prevalence rate (Congress Budget Office, 2012). A taskforce would be able to gather the measurable data needed to obtain a significant amount of funding, which could ultimately provide the supports needed to institute the policy changes to successfully address the issues of post-traumatic stress in the EMS profession.

Conclusion

Based on the study findings and the existing body of research, EMS personnel experience or are “at risk” for experiencing problematic trauma exposure responses at a higher rate than the average American citizen. Additionally, the severity of the trauma response symptoms among EMS personnel is indicative of a high prevalence rate of PTSD. As the EMS occupation continues to expand through the year 2020, the importance of successfully addressing the occurrence of post-traumatic stress symptoms within this field will also grow.
References


UCLA Center for Prehospital Care (2012). What’s the difference between an EMT and a paramedic? Retrieved from https://www.cpc.mednet.ucla.edu


Appendix

A1.1

IRB Approval Letter

DUQUESNE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
310 ADMINISTRATION BUILDING • PITTSBURGH, PA 15282-0202

Dr. Linda M. Goodfellow
Chair, IRB-Human Subjects
Office of Research
Phone (412) 396-6326 Fax (412) 396-5176
e-mail: goodfellow@duq.edu

December 14, 2013

Re: Protocol 13-192 Occurrence and Effects of Repeated Trauma Exposure in Emergency Medical Personnel

Dr. David Delmonico
School of Education
Duquesne University
Pittsburgh PA 15282

Dear Dr. Delmonico,

Thank you for submitting the research proposal of your student, Casie Probst, to the IRB. Based on the review of IRB representative, Dr. Carol Parke, and my own review, your study is approved as Exempt based on 45-Code of Federal Regulations-46.101.b.2 regarding research involving the use of survey procedures.

The consent form is attached with approval date. If you are able to upload this form with approval date to Survey Monkey, please do so. If not, then please add at the end of the consent form the following statement: This study has been approved by Duquesne University Institutional Review Board. The approval pertains to the submitted protocol. If you or Ms. Probst wish to make changes to the research, you must first submit an amendment and receive approval from this office. In addition, if any unanticipated problems arise in reference to human subjects, you should notify the IRB chair before proceeding. In all correspondence, please refer to the protocol number shown after the title above.
Once the study is complete, please provide our office with a short summary (one page) of your results for our records.

Thank you for contributing to Duquesne’s research endeavors.

Sincerely yours,
Linda M. Goodfellow, PhD, RN
C: David Delmonico
Carol Parke
IRB Records
Recruiting Email

Hello,
My name is Casie Probst and I am a student at Duquesne University completing my Master’s degree in Counseling. You are being invited to participate in a study focusing on the potential effects of repeated trauma exposure in EMS personnel. This study is open to all EMTs and Paramedics in Pennsylvania. If you are interested in participating, there are a few things you should know:

1) Your participation is completely voluntary, meaning there is no penalty for not participating and you can withdraw from the study at any time without consequence.

2) Your participation is anonymous. Your company will not know who clicked the link and who did not. Further, the researcher will not know your identity and; therefore, cannot share your responses with anyone, including your employer. This is an anonymous survey. Your data will be kept in encrypted electronic files in a secure facility so only the researchers have access to it.

3) Your information is anonymous. No information is requested that will allow anyone to link your response directly to you. Great care will be taken when reporting the results to not include any information that would identify you or the company for which you work.

If you decide you would like to participate, just click on the link below. There you will be given easy to follow instructions on how to get started. It will take an estimated 20 minutes to complete all of the surveys.

https://www.surveymonkey.com/s/emsptsdstudy2014

If you have any questions, please contact me at emsptsdstudy2013@gmail.com

Thank you for your time.

Sincerely,

Casie Probst, Co-Investigator
David L. Delmonico, Ph.D.
Principal Investigator
Duquesne University School of Education
Counseling Department,
(412) 396-4032
CONSENT TO ACT AS A PARTICIPANT IN A RESEARCH STUDY

TITLE: Effects of Repeated Trauma Exposure in Emergency Medical Personnel

PRINCIPAL INVESTIGATOR: David L. Delmonico; Duquesne University; 110-C Canevin Hall; Pittsburgh, PA 15282; (412) 396-4032; delmonico@duq.edu

CO-INVESTIGATORS: Casie Probst; Duquesne University; School of Education: Counseling Department; Canevin Hall; Pittsburgh, PA 15282; emsptsdstudy2013@gmail.com

Why is this research being done?
Based on current research, it is thought that Emergency Medical Services personnel are exposed to more traumatic events than other first responders. The purpose of this study is to measure the presence and severity of post-traumatic stress symptoms in Emergency Medical Services personnel.

Who is being asked to take part in this research study?
You are being invited to take part in this research study because you work within the Emergency Medical Services field in Pennsylvania. People invited to participate in this study must be over the age of 18 and active personnel in the Emergency Medical Services field. Emergency Medical Technicians (EMTs) and Paramedics are being asked to participate in this study.

What procedures will be performed for research purposes?
If you decide to take part in this research study, you will be asked to complete several instruments electronically. These assessments will include: a Demographics Information form, designed to collect basic identify information about you, a Primary Care PTSD Screen, used to determine if you are currently experiencing any symptoms related to trauma exposure, and a PTSD Checklist (PCL), used to determine the severity of symptoms you may be experiencing. It will take an estimated 20 minutes to complete all of these surveys.

Screening Procedures:
In order to participate in this study, you must verify that you are:
1) over the age of 18,
2) an “active” EMT or Paramedic, or an EMT or Paramedic working a minimum of 24 hours per week, and
3) working in Pennsylvania.

What are the possible risks, costs, and side effects of this research study? 
There is little known risk associated with participating in this study. It is possible you will experience some stress, discomfort, or unpleasant thoughts after completing the assessments. Research staff will provide literature and resource numbers for you to help minimize any discomforts. Participation in this study will be available to you free of charge. However, should you decide to seek professional care for any of the trauma exposure discussed in the assessments, you may incur a personal expense.

What are possible benefits from taking part in this study? 
You will likely receive no direct benefit from taking part in this research study. Should the study prove that EMS personnel are more at risk for experiencing repeated trauma related symptoms, it is possible that you may receive some benefit from future treatments to mitigate these symptoms. However, such a benefit cannot be guaranteed. You will not be paid for your participation.

Who will know about my participation in this research study? 
Any information obtained about you from this research will be anonymous. All records related to your involvement in this research study will be stored on a password protected computer. No identifying information will be collected and data will be reported as summaries. This means researchers will not be able to connect you to any of your answers.

Is my participation in this research study voluntary? 
Your participation in this research study is completely voluntary. Whether or not you provide consent to participate in this research study will have no effect on your ability to participate in future research studies or on your employment. You are not under any obligation to participate in this study.

May I withdraw my consent for participation in this research study in the future? 
You may withdraw, at any time, your consent for participation in this research study. Your decision to withdraw your consent for participation in this research study will have no effect or consequences on you or your employment.

To withdraw from the study, simply close the webpage before submitting your answers. Once you complete the survey, there will be no way to withdraw since there will be no way to separate your specific answers from other participants.

************************************************************************

VOLUNTARY CONSENT

I understand that I am encouraged to ask questions about any aspect of this research study during the course of this study, and that such future questions will be answered by a qualified individual or by the investigator(s) listed on the first page of this consent document at emsptsdstudy2013@gmail.com. I understand that I may always request that my questions, concerns or complaints be addressed by a listed investigator.
I understand that I may contact Dr. Linda Goodfellow at Duquesne University’s IRB Office at 412-396-6326 to discuss problems, concerns, and questions, obtain information, offer input, or discuss situations that have occurred during my participation.

By clicking on the “NEXT” button below, I verify that I am 18 years old or older and an EMT or Paramedic who works a minimum of 24 hours per week in the state of Pennsylvania.
A1.4

Resource List

While you complete the instruments for this study, you will be asked to recall experiences which may be difficult for some people. Below is a list of services that can provide you support. These services proved 24 hour support, 365 days a year to individuals experiencing minor difficulties to major crises. It is encouraged that you print or save this list of resources for your personal records.

Re: Solve Crisis Hotline 1-888-796-8226
Allegheny County Peer Support Warmline 1-866-661-9276
Allegheny Department of Human Services 1-888-424-2287
National Hopeline Network 1-800-784-2433
National Suicide Prevention Lifeline 1-800-273-8255
Demographics Form

Please answer the following questions as accurately as possible:

Gender:       _____ Male       _____ Female

Age:          

Race:         _____ White       _____ African American
              _____ Other

Marital Status: _____ Single (Never Married)       _____ Married
              _____ Divorced       _____ other (Please specify: ____________)

Number of Children:      _____ Children’s’ Ages: _______________________

Highest Level of Education:

              _____ High School Diploma/GED       _____ Technical Training/Certificate
              _____ Associate’s Degree       _____ Some College (No Degree)
              _____ Bachelor’s Degree (BS or BA)       _____ Other (Please specify: ________)

Job title:      _____ EMT       _____ Paramedic       _____ Other (Please specify: ________)

Length of Time Working in Emergency Medical Field:       _____ years       _____ months

The area I work in is primarily:       _____ Rural       _____ Urban
Health (Please check all that may apply):  

- Anxiety
- Cancer
- Depression
- Diabetes
- HBP
- Obesity
- Other (Please specify: ____________________________)

I believe I am currently experiencing trauma symptoms

- Yes
- No
A1.6

Primary Care PTSD Screen (PC-PSTD)

Instructions: While providing medical care for a patient during the performance of your job, have you had any experience which was so frightening, horrible, or upsetting that, in the past month, you:

1. Have had nightmares about it or thought about it when you did not want to?
   Yes/No

2. Tried hard not to think about it or went out of your way to avoid situations that reminded you of it?
   Yes/No

3. Were constantly on guard, watchful, or easily startled?
   Yes/No

4. Felt numb or detached from others, activities, or your surroundings?
   Yes/No
A1.7

PTSD Checklist (PCL-C)

If you have been exposed to a traumatic, troubling, or stressful event while providing or attempting to provide medical care for a patient, please complete the items below. If you did not experience the event directly but were witness to a traumatic, troubling, or stressful event while working, please answer the items listed below. If you have been exposed to more than one traumatic, troubling, or stressful event while working, please choose the event that is most troublesome to you now.

The event you experienced was ___________________________ on __________.

          Event                     Date

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

1: NOT AT ALL        2: A LITTLE BIT       3: MODERATELY
4: QUITE A BIT       5: EXTREMELY

1. Repeated disturbing memories, thoughts, or images of the stressful experience?

   1   2   3   4   5

2. Repeated, disturbing dreams of the stressful experience?

   1   2   3   4   5

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

   1   2   3   4   5
4. Feeling very upset when something reminded you of the stressful experience? 
   1 2 3 4 5

5. Having physical reactions (e.g., heart pounding, trouble breathing, or sweating) when something reminded you of the stressful experience? 
   1 2 3 4 5

6. Avoiding thinking about or talking about the stressful experience or avoiding having feelings related to it? 
   1 2 3 4 5

7. Avoiding activities or situations because they remind you of the stressful experience? 
   1 2 3 4 5

8. Trouble remembering important parts of the stressful experience? 
   1 2 3 4 5

9. Loss of interest in activities that you used to enjoy? 
   1 2 3 4 5

10. Feeling distant or cut off from other people? 
    1 2 3 4 5

11. Feeling emotionally numb or being unable to have loving feelings for those close to you? 
    1 2 3 4 5

12. Feeling as if your future will somehow be cut short? 
    1 2 3 4 5

13. Trouble falling or staying asleep? 
    1 2 3 4 5

14. Feeling irritable or having angry outbursts? 
    1 2 3 4 5

15. Having difficulty concentrating? 
    1 2 3 4 5

16. Being “super alert” or watchful or on guard? 
    1 2 3 4 5

17. Feeling jumpy or easily startled? 
    1 2 3 4 5

I believe I am currently experiencing trauma symptoms

___Yes

___No
Debriefing Statement

Thank you for your participation. This study is designed to assess the severity of PTSD symptoms in EMS personnel. Researcher shows people working in the EMS field are more likely to be repeatedly exposed to traumatic events throughout their career. It is hypothesized people repeatedly exposed to traumatic events, like EMS personnel, are more likely to experience difficulties as a result of witnessing multiple traumatic events. It is possible for people to develop Post-Traumatic Stress Disorder or PTSD as a result of trauma exposure.

The questions you answered today are not designed to diagnose you or anyone else with PTSD or any other diagnosis. The answers you provided were used to gauge your reaction to the traumatic events to which you were exposed.

If you feel you need help coping with your reaction to the events you experienced, please use the Resources List to contact a local service that may render you immediate help. Additionally, please take time to access the “Understanding PTSD” to help you better understand how PTSD can impact an individual and how PTSD symptoms can be treated.

Please take a moment to save or print the Resource List for your personal use. If you have any questions about the study please feel free to contact, Casie Probst at emsptsdstudy2013@gmail.com, Dr. David Delmonico (412-396-4032), or Dr. Linda Goodfellow at Duquesne University’s IRB Office at 412-396-6326.

Thank you.

Resources List and PTSD Care Note

If you find you are having difficulty such anxiety, troubling thoughts, or other negative reactions after completing this study, it is important you seek immediate support. Below is a list of services that can provide you support. These services proved 24 hour support, 365 days a year to individuals experiencing minor difficulties to major crises.

Re: Solve Crisis Hotline 1-888-796-8226

Allegheny County Peer Support Warmline 1-866-661-9276
Allegheny Department of Human Services 1-888-424-2287
National Hopeline Network 1-800-784-2433
National Suicide Prevention Lifeline 1-800-273-8255

For more information on understanding PTSD, please visit Understanding PTSD. This link will provide information concerning PTSD symptoms and treatment. You may also save this document or print it for your personal use.
Have you, or someone you love

Been through combat?

Lived through a disaster?

Been raped?

Experienced any other kind of traumatic event?

Have you ever thought that painful memories of that experience were still causing problems for you or a loved one?

You may have heard of PTSD—posttraumatic stress disorder—on the news or from friends and family, and wondered what it is, or whether you or someone you know has it.

This booklet will help you understand what PTSD is. You’ll learn how to get help for yourself, a friend, or a family member. It includes stories from people who have gotten help for their PTSD and have returned to their normal lives, activities, and relationships.

The important thing to remember is that effective treatment is available.

You don’t have to live with your symptoms forever.
PTSD

Posttraumatic stress disorder, or PTSD, can occur after someone goes through, sees, or learns about a traumatic event like:

- Combat exposure
- Child sexual or physical abuse
- Terrorist attack
- Sexual/physical assault
- Serious accident
- Natural disaster

Most people have some stress-related reactions after a traumatic event. If your reactions don’t go away over time and they disrupt your life, you may have PTSD.

See the next few pages for common reactions to trauma and PTSD symptoms.

How Common Is PTSD?

Many Americans have had a trauma. About 65% of men and 50% of women experience at least one traumatic event. Of those who do, about 8% of men and 20% of women will develop PTSD. For some events like combat and sexual assault, more people develop PTSD.
What Are Some Common Stress Reactions after a Trauma?

It is normal to have stress reactions after a traumatic event. Your emotions and behavior can change in ways that are troubling to you.

**Fear or anxiety**
In moments of danger, our bodies prepare to fight our enemy, flee the situation, or freeze in the hope that the danger will move past us. But those feelings of alertness may stay even after the danger has passed. You may:
- feel tense or afraid
- be agitated and jumpy
- feel on alert

**Sadness or depression**
Sadness after a trauma may come from a sense of loss—of a loved one, of trust in the world, faith, or a previous way of life. You may:
- have crying spells
- lose interest in things you used to enjoy
- want to be alone all the time
- feel tired, empty, and numb

**Guilt and shame**
You may feel guilty that you did not do more to prevent the trauma. You may feel ashamed because during the trauma you acted in ways that you would not otherwise have done. You may:
- feel responsible for what happened
- feel guilty because others were injured or killed and you survived

**Anger and irritability**
Anger may result from feeling you have been unfairly treated. Anger can make you feel irritated and cause you to be easily set off. You may:
- lash out at your partner or spouse
- have less patience with your children
- overreact to small misunderstandings

**Behavior changes**
You may act in unhealthy ways. You may:
- drink, use drugs, or smoke too much
- drive aggressively
- neglect your health
- avoid certain people or situations

Most people will have some of these reactions at first, but they will get better at some time. If symptoms last longer than three months, cause you great distress, or disrupt your work or home life, you should seek help.
What Are the Symptoms of PTSD?

PTSD has four types of symptoms.

Reliving the event (also called reexperiencing)
Memories of the trauma can come back at any time. You may feel the same fear and horror you did when the event took place. You may have nightmares or feel like you’re going through it again. This is called a flashback. Sometimes there is a trigger—a sound or sight that causes you to relive the event.

- Seeing someone who reminds you of the trauma may bring back memories of the event.
- You may think about the trauma at work or school when you need to concentrate on something else.

Avoiding situations that remind you of the event
You may try to avoid situations or people that trigger memories of the traumatic event. You may even avoid talking or thinking about the event.

- You may avoid crowds, because they feel dangerous.
- If you were in a car accident or if your military convoy was bombed, you may avoid driving.
- Some people may keep very busy or avoid seeking help. This keeps them from having to think or talk about the event.

Feeling numb
You may find it hard to express your feelings. This is another way to avoid memories. It may also be hard to remember or talk about parts of the trauma.

- You may find it hard to experience your emotions.
- You may not have positive or loving feelings toward other people and may stay away from relationships.
- You may not be interested in activities you used to enjoy, like spending time with family and friends.

Feeling keyed up (also called hyperarousal)
You may be jittery, or always on the alert and on the lookout for danger. You might suddenly become angry or irritable. This is known as hyperarousal.

- You may want to have your back to a wall in a restaurant or waiting room.
- A loud noise can startle you easily.
- If someone bumps into you, you might fly into a rage.

Real Stories: Teresa

“Now I’ve got a great support team. I owe a tremendous thanks to my counselor.”

On a military mission, the truck in front of Teresa’s went over a roadside bomb, and there were no survivors. She was badly injured in the explosion, but the person in the seat where Teresa was supposed to have been was injured much worse. Teresa felt guilty about that.

After returning home, Teresa started having nightmares and panic attacks. The awful images of that day haunted her. The medicines she was prescribed for her anxiety and sleep problems didn’t seem to help. She didn’t want to leave the house, go to work, or do anything. One day she lost control and verbally abused her platoon leader. Her first sergeant stepped in and insisted that she see a psychiatrist.

Teresa was diagnosed with PTSD. She’s doing better thanks to treatment at her local VA. Although Teresa’s problems have not gone away, she now has a great support team to help her.
What Other Problems Do People with PTSD Experience?

People with PTSD may feel hopelessness, shame, or despair. Employment and relationship problems are also common. Depression, anxiety, and alcohol or drug use often occur at the same time as PTSD. In many cases, the PTSD treatments described in the Getting Help section will also help these other disorders, because the problems are often related and the coping skills you learn work for all of them.

How Likely Is a Person to Develop PTSD after a Trauma?

How likely you are to get PTSD can depend on things like:

- How intense the trauma was or how long it lasted
- If you lost someone you were close to or if you were hurt
- How close you were to the event
- How strong your reaction was
- How much you felt in control of events
- How much help and support you got after the event

Some groups of people may be more likely than others to develop PTSD. You are more likely to develop PTSD if you:

- Are female or a minority
- Have little education
- Had an earlier life-threatening event or trauma
- Have another mental health problem
- Have family members who have had mental health problems
- Have little support from family and friends
- Have had recent, stressful life changes
When Should a Person Get Evaluated for PTSD?

If you continue to be upset for more than three months, seek help. You can feel better!

Who Can Conduct an Evaluation, and What Does It Consist of?

PTSD is usually diagnosed in one or two sessions. Your doctor or a mental health professional will evaluate you. You will be asked about your trauma and symptoms. You may also be asked about other problems you have. Your spouse or partner may be asked to provide information.

The Department of Veterans Affairs has a PTSD questionnaire that you can take online. You can also take the screening test below.

If you find that you answered “yes” to many of the questions asked, you may have PTSD. It is best to talk to a mental health professional to find out for sure.

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PTSD Screen

In your life, have you ever had any experience that was so frightening, horrible, or upsetting that, in the past month, you:

- Have had nightmares about the experience or thought about it when you did not want to?
- Tried hard not to think about the experience or avoided situations that reminded you of it?
- Were constantly on guard, watchful, or easily startled?
- Felt numb or detached from others, activities, or your surroundings?

Current research recommends that if you answered “yes” to any three items, you should seek more information from a mental health care provider. A positive screen does not mean that you have PTSD. Only a qualified mental health care practitioner, such as a clinician or psychologist, can diagnose you with PTSD.
What Treatments Are Effective for PTSD?

There are good treatments available for PTSD. The two main types are psychotherapy, sometimes called “counseling,” and medication. Sometimes people combine psychotherapy and medication.

**Psychotherapy**

**Cognitive Behavioral Therapy (CBT)** is the most effective treatment for PTSD. CBT usually involves meeting with your therapist once a week for 3-6 months. There are different types of CBT that are effective for PTSD.

Cognitive Processing Therapy (CPT) is a CBT in which you learn skills to better understand how a trauma changed your thoughts and feelings. It will help you see how you have gotten “stuck” in your thinking about the trauma. It helps you identify trauma-related thoughts and change them so they are more accurate and less distressing.

Prolonged Exposure (PE) therapy is a CBT in which you talk about your trauma repeatedly until the memories are no longer upsetting. You also go into situations that are safe but which you may have been avoiding because they are related to the trauma.

**Eye Movement Desensitization and Reprocessing (EMDR)** involves focusing on distractions like hand movements or sounds while you talk about the traumatic event. Over time, it can help change how you react to memories of your trauma.

**Medication**

**Selective Serotonin Reuptake Inhibitors (SSRIs)** can raise the level of serotonin in your brain, which can make you feel better. The two SSRIs that are currently approved by the FDA for the treatment of PTSD are sertraline (Zoloft) and paroxetine (Paxil).

Sometimes, doctors prescribe medicines called benzodiazepines for people with PTSD. These medicines are often given to people who have problems with anxiety. While they may be of some help at first, they do not treat the core PTSD symptoms. They may lead to addiction and are not recommended for long-term PTSD treatment.

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**Real Stories: Gina**

Gina had a great job, a loving husband, and a beautiful home. But she was miserable. Some days, a kiss from her husband would make her heart start pounding, and she would feel very afraid. She did not realize that these panicky feelings were flashbacks—the experienting of the feelings that she had felt when she was a small child and couldn’t protect herself.

Gina sought help. She went to a therapist, and finally revealed that her uncle had repeatedly sexually abused her as a child. Her therapist diagnosed PTSD, and started cognitive behavioral therapy with Gina. Therapy taught her to challenge her thoughts and feel less distress.

She still has occasional flashbacks and panic attacks, but they’re now controllable, and she knows they will pass. Before, she thought she’d always have to live with the flashbacks and bad feelings. Now, she can go weeks without thinking about the abuse, and she feels certain that someday it will be years.

“You can be a normal thriving person and have mental health issues, get help for those, and still be okay.”
How Can I Learn More About PTSD?

View the multimedia companion to this brochure and other resources at www.ptsd.va.gov/public/

In a Crisis?

- Call 911
- Go to an emergency room
- Call 1-800-273-TALK (1-800-273-8255) (Español: 1-888-628-9454)

Veterans, go to www.suicidepreventionlifeline.org/Veterans to chat live with a crisis counselor.

Where Can I Get Help for Myself or a Family Member?

These links are accessible online at http://www.ptsd.va.gov/public/where-to-get-help.asp

- Where to Get Help for PTSD
- Mental Health Services Locator
- VA PTSD Program Locator

This guide was created by the National Center for PTSD, U.S. Department of Veterans Affairs. The Center conducts research and education on trauma and PTSD. Our website offers extensive information, educational materials, and multimedia presentations for a variety of audiences, including Veterans and their families, providers, and researchers. Website: www.ptsd.va.gov