

**PUBLIC PTSD
PERCEPTION:
FIRST
RESPONDER
AND MILITARY
MEMBER**

Bradley B. Lutz

Abstract

PTSD has only been recognized as a diagnosable illness since 1986. Prior to that, PTSD symptoms carried names such as Shell Shock or Combat Fatigue. Historical documentation of PTSD symptoms can be traced back more than a millennium however, to the writings of Homer and his poem The Iliad. In it, he described Achilles as a Trojan War veteran who is continually awakened and tormented by thoughts of a fallen comrade. Contemporary research has shown that up to 90% of people diagnosed with PTSD have difficulty sleeping.

Much of the existing research has been aimed at military members and veterans of military service who have a PTSD driven suicide rate nearly four times that of the general public (12.6 vs 44 per 100,000). Almost no research exists that studies how PTSD affects U.S. first responders (Paramedics, Firefighters, and Law Enforcement officer), but suicide monitoring groups believe that the rate of suicide for first responders may be as high as 65 in 100,000 or 170% the military rate.

The project goal was to determine if there is a discrepancy in public perception of PTSD symptoms and related suicide rates between military veterans and first responders. Using an online set of Likert scaled questions, 284 people completed the survey. The data shows that survey respondents expect first responders to

experience trauma as part of their vocation more often than military members, while at the same time experiencing PTSD type symptoms to a lesser degree.

Introduction

Humans have experienced stressful or traumatic situations since the origin of our species. Undoubtedly, some of these experiences left an indelible mark in the mind of those present for the event. Despite the experiences of our ancestors, it was only recently that researchers began to categorize traumatic events and the impact they had on our population.

Beginning in antiquity, the concept of psychological trauma had been associated with combat. Around 1150 BC, Greek soldiers finalized ten years of war by laying siege to the city of Troy. The now iconic poem *The Iliad* by Homer, was born of this conflict; the writing describes the horror of battle as witnessed by the main protagonist, Achilles. Patroklos, a close friend of Achilles, had fallen in combat. The poem describes dreams experienced by Achilles as he was visited by the spirit of his dead friend. Homer wrote in his 23rd scroll,

“[Achilles speaking to the spirit of Patroklos] ‘Draw closer to me, let us once more throw our arms around one another, and find sad comfort in the sharing of our sorrows. He opened his arms towards him as he spoke and would have clasped him in them, but there was

nothing, and the spirit vanished as a vapor, gibbering and whining into the earth. Achilles sprang to his feet, smote his two hands, and made lamentation saying, "Of a truth even in the house of Hades there are ghosts and phantoms that have no life in them; all night long the sad spirit of Patroklos has hovered overhead making piteous moan, telling me what I am to do for him, and looking wondrously like himself."

Grief stricken over his friend; Achilles had dreams where he could not stop wanting to help the spirit. This example is often cited as the first widely known record of witnessed traumatic situations impacting the survivors.

In 1856, noted author Charles Dickens was involved a train wreck that left him physically injured. He witnessed ten of his fellow passengers killed and another 40 wounded. Now called the Staplehurst Disaster, it affected Dickens so deeply that he lost his voice for two weeks and afterwards was nervous when travelling by train, using alternative means when available (Staplehurst, 2012). These feelings were so common amongst other survivors of rail accidents, a frequent occurrence of the time, that physician John Eric Erichson in his book *Railway and Other Injuries of the Nervous System*, coined the ailment as 'railway spine' in 1867.

It was not until 1919 that the U.S. military began formally treating combat veterans for 'shell shock'. This was thought to be caused by exposure to explosive

ordinance that led to poor sleep habits and panic disorders. When soldiers who were not directly exposed to artillery fire began to have the same symptoms, the military adopted a broader term; ‘war neuroses.’ Soldiers diagnosed with this affliction were occasionally treated with several days of rest far from enemy lines. Unfortunately, most were either ignored by company officers or subject to questionable electroshock therapies (History of PTSD, 2012).

With the opening shots of World War II, the term ‘war neuroses’ was phased out by the diagnosis of Combat Stress Reaction (CSR) and was often referred to as ‘battle fatigue.’ American forces were woefully unprepared for the psychological toll extracted from the soldiers since, at the beginning of the war, there were only 35 psychiatrists available to all branches of the military (Menninger, 1947).

New effort was put forth by governmental leaders to identify soldiers suffering from battle fatigue, with the focus on treatment that would return them to combat readiness as quickly as possible. Officers and field commanders had little sympathy for those who struggled to cope with the harshness of war and often branded them cowards, undermining changes, however minimal, made by leadership. The issue remained highly important for upper echelon military leaders who were struggling to keep ample numbers of soldiers in combat. Only later was it revealed that up to 40% of medical discharges from the U.S. military at the time were due to “psychoneurotic disorder and/or personality defects” (Vento, 2012).

Knowing now that the rate of psychological distress in enlisted World War II military members was more than twice that of World War I combat soldiers, the efforts taken to psychologically treat troops is now viewed as a failure (Appel, 1945). Further advancements in understanding stress related disorders were made throughout the Korean and Vietnam wars. A watershed moment occurred within military PTSD research after the Vietnam war when researchers discovered more veterans had taken their own lives than had originally died in combat. It became evident that protocols made by military leaders immediately after World War II were not adequate, and more changes were needed. Mainstream psychology adopted the term Post Traumatic Stress Disorder (PTSD) as a legitimate medical diagnosis in 1986. Initially, it was a controversial addition to the Diagnostic and Statistical Manual of Mental Disorders (DSM), which formalized the diagnostic process of patients. Two schools of thought were divided; one which believed PTSD was derived from a trauma, and the other which believed it was from an intrinsic weakness. In 1987, DSM revisions (DSM-III R) and later editions (DSM-IV and DSM-V) settled the debate (Figure 1) by noting a diagnosis could only be made if the individual had experienced a qualifying stressor event (VA PTSD, 2019). It appeared that science had laid bare the intricacies of combat stress.

Criteria	Symptom or description
Criterion A: Trauma (both)	<ul style="list-style-type: none"> • Traumatic event that involved actual or threatened death, serious injury, or threat to physical integrity. • Intense response of fear, helplessness, or horror.
Criterion B: Re-experiencing symptoms (one or more)	<ul style="list-style-type: none"> • Intrusive recollections of events. • Recurrent distressing dreams of the event. • Acting or feeling as if the traumatic event were recurring. • Distress at internal or external reminders of the trauma. • Physiological reaction to internal or external reminders.
Criterion C: Persistent avoidance and numbing (three or more)	<ul style="list-style-type: none"> • Avoidance of thoughts, feelings, or conversations associated with trauma. • Avoidance of activities, places, or people that arouse recollections of trauma. • Failure to recall an important aspect of trauma. • Loss of interest or participation in significant activities. • Detachment from others. • Restricted range of affect. • Lost sense of the future.
Criterion D: Hyperarousal (two or more)	<ul style="list-style-type: none"> • Difficulty falling or staying asleep. • Irritability or outburst of anger. • Difficulty concentrating. • Hypervigilance. • Exaggerated startle response.
Criterion E: Duration of disturbance	<ul style="list-style-type: none"> • Duration of disturbance symptoms is more than 1 month.
Criterion F: Clinically significant distress or impairment	<ul style="list-style-type: none"> • Disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of function.

Figure 1. The American Psychiatric Association. *Diagnostic and statistical manual of mental disorders* (3rd ed). Washington, DC; 1980

The period between the late 80s and 90s resulted in a time relatively free from stress on military forces. The calm shattered with the September 11th attacks and the subsequent war on terror. Nearly 20 years later, the United States remains locked in a seemingly endless war. Now called Operation Iraqi Freedom and Operation Enduring Freedom (OIF/OEF), returning veterans are exhibiting a spike in combat stress-related injuries. It is estimated that between 20% and 30% of OIF/OEF veterans have experienced PTSD to some degree (Fulton JJ, Calhoun PS, Wagner HR, 2015).

All branches of the United States military provide access for soldiers (and qualified dependents) to psychiatrists and other physicians, clinical psychologists, certified psychiatric nurse specialists, clinical social workers, certified marriage and family therapists, pastoral counselors, and mental health counselors, while at home duty stations. The Department of Defense has also taken psychological care into combat with the formation of Mental Health Advisory Teams (MHATS) beginning in 2003. The MHATS deploy to all combat theatres with United States military members, and continually monitor their mental health. This includes access to treatments while in combat zones (PTSD Military Approach, 2012).

Several high-profile private organizations such as the Wounded Warrior Foundation (WWF) and Gary Sinise Foundation (GSF) began to bring military suicides into the realm of public perception in 2010. As OIF/OEF combat tours became longer, WWF and GSF highlighted a Veterans Administration statistic that indicated 22 veterans on average kill themselves every day. The '22 A DAY' campaign has been successful in highlighting military suicide rates. No organization with the national presence of the WWF or GSF exists within first responder networks and as such, there has been less public education on the problem.

Modern correlations of PTSD in first responders

The term ‘First Responders’ is ill defined by any authority; for the purposes of this paper it includes Firefighters, Paramedics/EMS (Emergency Medical Service), and Law Enforcement officers unless specified by subtype. These are usually the initial trained-response individuals who arrive and manage all aspects of emergency situations within the United States. The American Security Council (ASC) estimates that there are 891,000 EMS first responders in the U.S. (ASC, 2019). Because of disparities between rural and urban call volume, it stands to reason that some responders may only be seeing relatively few fatalities, whereas others may be seeing dozens. The number of responders that arrive at locations of traumatic death also varies. Ambulances will, at a minimum, be staffed with two responders and are generally followed by other responders such as firefighters and police officers. To date, no specific number of responders present at each scene has been elucidated, but a single traumatic fatality may be witnessed by anywhere from two to a dozen or more responders.

Despite the preponderance of witnessed trauma, there has been no nationwide study of PTSD rates in first responders performed in the United States. But previous research on PTSD not specifically related to first responders, and smaller regional studies, may shed light on this large oversight.

Several large catalysts to PTSD diagnosis have revolved around a group of commonalities. People who experience a severe threat of bodily harm, witnessing

severe violent harm to others, causing death to a person, or witnessing traumatically disfigured bodies, have shown a high preponderance to being diagnosed with PTSD (Green B.L., 1990). While, of course, these occurrences all seem possible with military combat veterans, it should be noted that the leading cause of death to all North Americans is non-military trauma (DiMaggio, C., Ayoung-Chee, P., Shinseki, M., Wilson, C., Marshall, G., Lee, D. C., Frangos, S., 2016).

In fact, the U.S. Centers for Disease Control report that over 200,000 individuals die every year from traumatic causes, with 42,000 of them being suicide and more than 19,000 from violence/homicide. Witnessing violence or suicide is often cited as the situations where first responders struggle most with subsequent psychological symptoms (Hedegaard H, Curtin SC, Warner M., 2018).

One recent study surveyed 893 firefighters in the U.S. for symptoms that would lead to a PTSD diagnosis, and for indications that firefighters may be planning/attempting to take their own lives. The findings showed that 31.8% (284) of urban respondents would meet the criteria for a PTSD diagnosis, and 15.6% (139) reported an attempted suicide during the time they were employed as firefighters (Boffa, J. W., Stanley, I. H., Hom, M. A., Norr, A. M., Joiner, T. E., & Schmidt, N. B. (2016;2017). The American Foundation for Suicide Prevention notes that the estimated rate of suicide attempts for all Americans in 2017 was

0.3%. If the Boffa study numbers were to extrapolate to all firefighters in the U.S., it means they are 52 times more likely to attempt suicide than an average citizen. However, this study focused on urban firefighter PTSD and suicide attempt rates. Because of larger populations found in urban settings, the number of emergency calls individual firefighters respond to annually can be significantly higher than their rural counterparts. It is extremely unlikely that rural firefighters will encounter qualifying trauma incidents with the same frequency as urban firefighters. Nonetheless, trauma is not defined on a single axis. There is very likely a strong interplay between the frequency of witnessed events and the severity of the witnessed trauma. Much work needs to be carried out to elucidate the weight of each factor. Additionally, current studies do not control for baseline vulnerability to psychological stressors, which is another factor that will be confounding the figures.

Legal Rulings Affecting First Responders

Aside from the dearth of research done to understand PTSD in first responders, there have also been several high-profile court cases which seem to have impacted public perception that in the rare instances that PTSD is found in first-responders, it is not an “acceptable” reaction. In the 2006 *Burney v. Jersey Community Hospital* case, a paramedic was tending to the critically ill patient in the back of her ambulance when the ambulance broke down before reaching the hospital.

Despite efforts, the patient died while in Burney's care; a loss which the paramedic felt responsible for. The paramedic, struggling with PTSD type symptoms after the incident, attempted to file a worker's compensation case. The employer argued the claim and it was sent to arbitration where the arbitrator commented, "[s]he had been a paramedic for fourteen years and had patients die in transit on multiple occasions" (Burney, 2006). The courts agreed and the paramedic was unable to seek treatment.

In 2008, the case of *Ushman v. City of Springfield* (Illinois) reached courts. The complainant, a city police officer, was involved in a foot pursuit which resulted in gunfire being exchanged between him and the suspect. The officer was physically uninjured but had killed the suspect in the shootout. Several days after the event he began to have trouble sleeping and started to experience dread when returning to duty. He attempted to have his situation evaluated by a psychiatrist and filed a worker's compensation claim to cover the cost. When the city withheld compensation, the parties were sent to an arbitrator who concluded, because the claimant had felt normal for a period of less than two weeks and the event was not an uncommon event for a police officer, he could not be compensated under the Workers' Compensation Act (Ushman, 2008). The officer was unable to pay out-of-pocket for medical care and left law enforcement.

The verdict in both cases caused responders to fear being diagnosed with PTSD and led to a decrease in conversation about traumatic stress and first responders. This fear coupled with the trend of first responders to see themselves as invincible, began a marked downward spiral within the group. Clinical Psychologist David Sack works with first responders and writes,

“Admitting that there are cracks in the armor can seem not only counterproductive but dangerous—a way of undermining the confidence necessary to do the job effectively and safely.

Unfortunately, that’s an attitude that can rise all the way up to management ranks, with those who open up about what they are feeling to their superiors sometimes being told to simply “deal with it” or “toughen up.” There’s also the fear that any admission they’re struggling will be seen by others as proof that they’re just not up to the job. That can be terrifying to contemplate for first responders, who tend to see their work as not simply an occupation but as their identity” (Sack, 2017).

The unspoken expectation of withholding/denying stress after an incident is so engrained that EMS cartoonist Paul Combs frequently tackles the subject. The below illustration (Figure 2) highlights the attitudes of individual responders when faced with the prospect of losing employment or status within the responder hierarchy.



Figure 2. *Stress Timebomb* by Paul Combs. From <http://www.artstudiosseven.com/fire-ems-pages/EMS-Stress-Timebomb.html> (2015).

Research conducted after the court cases reveal that first responders are turning to alcohol and illicit drug use to self-medicate their PTSD. A 2011 study where urban firefighters were given the Alcohol Use Disorders Identification Test showed a strong correlation between their PTSD type symptoms and alcohol abuse (Smith, B. W., Ortiz, J. A., Steffen, L. E., Tooley, E. M., Wiggins, K. T., Yeater, E. A., Bernard, M. L. (2011).

Database searches for illicit drug use by first responders returned no controlled scientific studies on the topic. However, large amounts of anecdotal evidence are present throughout numerous first responder websites and their comment sections, such as Firehouse.com, Firerescue1.com, and Firefighternation.com. Several national news articles can be found which state that drug theft and abuse by paramedics is commonplace (JEMS, 2019 and EMS1, 2018), but these too lack anything more than anecdotal evidence. It is clear that more research needs to be conducted in this area.

Another metric that typifies PTSD symptoms is found in relationship failure rates. Like previously discussed, studies currently focused on military members and their spouses found veterans of all branches were more than three times as likely to divorce two or more times when diagnosed with PTSD, than soldiers who were not diagnosed (Dekel, R., & Solomon, Z., 2007). A small-scale scientific study focusing on firefighter marriage and divorce rates across the country revealed mixed results. They found male firefighters were slightly more likely to be divorced than the civilian national average (11.8% vs 9.4%). Female firefighter ratios were more pronounced (32.1% vs 10.4%), muddying the correlation of potential PTSD rates (Jahnke, 2015).

Suicide rates and what we know

The largest group studied for effects of PTSD has been our current and former military members. A national advertising campaign by military support organizations concerned with PTSD has pointed out that 22 military veterans commit suicide every day in the United States. Their '22 A Day' mantra has become a rallying cry for how all branches of the military address the oft horrific images that our fighting men and women are exposed to and the access to psychological treatment years after their duty has ended.

According to the U.S. Department of Veteran Affairs (VA) there are approximately 20 million living veterans and nearly 2 million active duty and reservists currently serving (VA, 2017). This means that for every 1 million veterans/active duty military members, one individual on average will commit suicide per day.

Using the ASC data, it is reported that there are approximately 2 million first responders in the U.S. (ASC, 2019). No government agency tracks suicides of first responders on an annual basis. There are several special-interest support groups, such as the Ruderman Family Foundation (RFF), which do track them, often using a technique called forensic autopsy. By reading through personal writings, social media, and interviews with surviving family and coworkers, a forensic autopsy gives researchers insight into the mindset of suicide victims. Their findings show that in 2017, there were at least 103 reported firefighter suicides, and at least 140 law enforcement officer suicides. The research, in conjunction with the Firefighter

Behavioral Health Alliance (FBHA), estimates that firefighter suicides are reported 40% of the time (Ruderman, 2018). Because of the stigma surrounding suicide in first responders and the potential spotlight turned on the profession, the RFF believes all first responder subtypes may be grossly underreporting suicides. The RFF does not track EMS specific suicide numbers.

The Strub Caulkins Center for Suicide Research (SCC) is a Minnesota collective that monitors suicide statistics using similar techniques as the RFF. They report an EMS suicide rate of 64.9 : 100,000 which is a sharp increase from the general population (12.6 : 100,000) and the military (44 : 100,000) (SCC,2018). If their estimations are correct, and we apply that to the ASC given number of EMS specific responders (891,000) we have an annual suicide rate of 578 EMS providers. This seems dramatically high but when compared to firefighters (103 suicides) and the RFF estimation that the number only represents 40% of actual cases, it would indicate 257 firefighter suicides is a true possibility. While this may be the high end of predictions, nearly all literature on the topic indicates that the rates for all first responders is massively underreported. If the predicted correlation holds true, up to 1,000 responders may be dying by suicide annually.

Despite responder suicide rates surpassing those of military members, there is little public discourse occurring to understand the problem. Much of the civilian population can give suicide statistics for military veterans, but first responder data

is more limited and seemingly out of public interest. The question then becomes, whether there is a discrepancy in public perception between the severity of PTSD and suicide rates in military and first responders.

Methods

Referencing Dr. Pamela Alreck and Dr. Robert Settles statistical research book, *The Survey Research Handbook*, as design criteria, an online based tool was utilized to disseminate the survey and collect results. Consenting respondents were given a series of 18 questions pertaining to their beliefs on PTSD, specifically in the Veteran/Active Duty military and First Responder groups. Each question gave a Likert scale answer of zero to 10, with five being middle, zero indicating ‘agree least’ or ‘least often’, and 10 indicating ‘agree most’ or ‘most often (SRH, 1995). The questions were not mandatory.

Due to IRB requirements and research directives that focused on public perception instead of individual experience, prior to taking the survey, respondents were advised,

“The point of this survey is to understand the public perception of Post-Traumatic Stress Disorder in military veterans/active duty, and first responders. Because it is the PERCEPTION of PTSD likelihood,

the questions do not pertain to your individual experiences with PTSD or related symptoms.”

Respondents were solicited via University of Wyoming email lists targeting a broad swath of both students and faculty. The survey received 284 responses (n=284). Each individual question received an average of 281.5 responses (+/- 2.5).

Questions were written identically apart from what group they pertained to. For example, respondents were asked how strongly they believed that “X group” members were to abuse illicit drugs or alcohol as a stress coping mechanism. The question was presented two times with the X group being either ‘Military Veterans and Active Duty’ or ‘First Responders’.

Results

The survey results conveyed that the general public does perceive PTSD symptoms and resultant suicides as being less of a problem in first responder groups than in military members.

For the question “To what degree do you believe XXXXXX experience sleep disorders (nightmares, insomnia, night terrors, etc)” (figures 3 and 4), respondents more often scored military members as having sleep difficulty ($\bar{x} = 8.4$ vs 7.6).

The sleep disorders described in the question stem are commonly associated with a PTSD positive individual.

To what degree do you believe FIRST RESPONDERS experience sleep disorders (nightmares, insomnia, night terrors, etc)?

283 responses

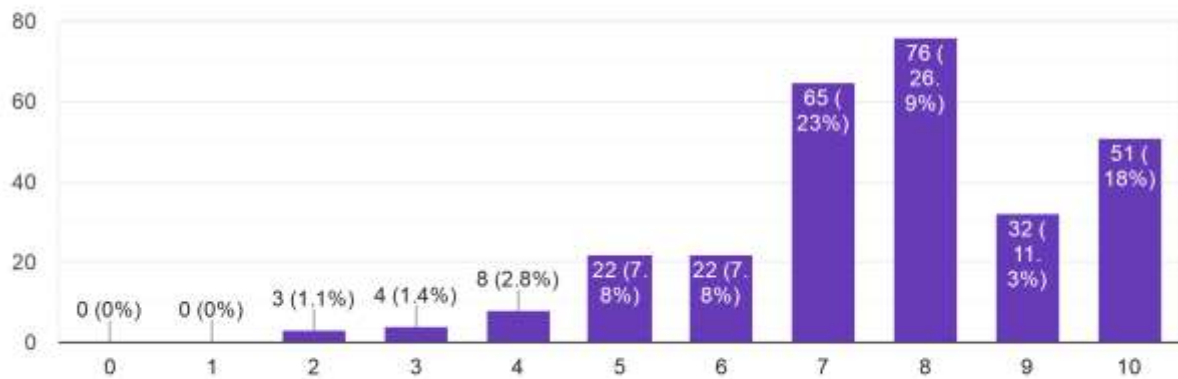


Figure 3. First Responder Sleep Disorder

To what degree do you believe MILITARY VETERANS and ACTIVE DUTY SOLDIERS experience sleep disorders (nightmares, insomnia, night terrors, etc)?

280 responses

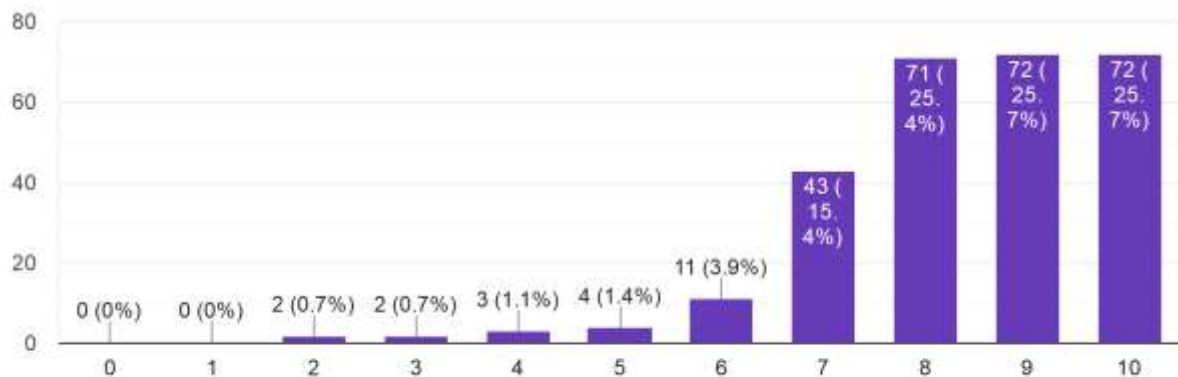


Figure 4. Military Veteran Sleep Disorder

Regarding alcohol and illicit drug abuse, respondents were asked “How often do you think XXXXXX use alcohol or drugs to cope with their stress” (figures 5 and 6). They again favored military members most often ($\bar{x} = 7.7$ vs 6.6).

How often to you think FIRST RESPONDERS use alcohol or drugs to cope with their stress?

281 responses

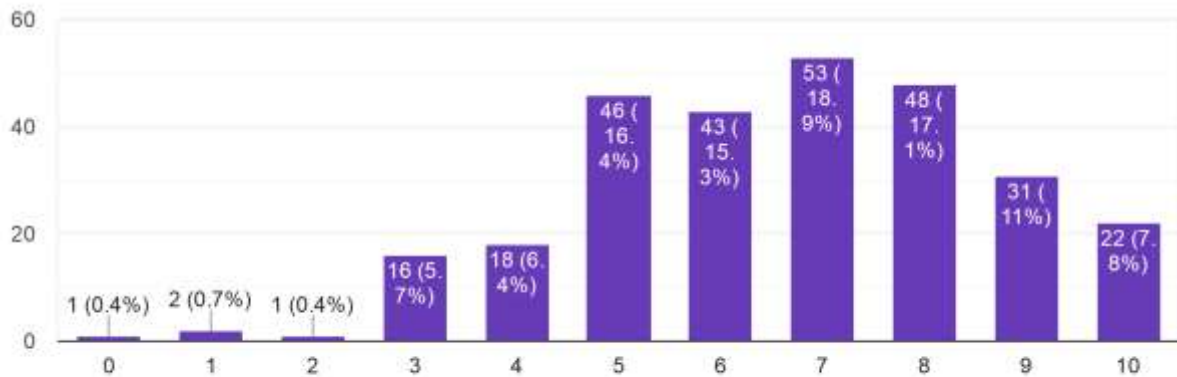


Figure 5. First Responder Alcohol/Drug

How often to you think MILITARY VETERANS and ACTIVE DUTY SOLDIERS use alcohol or drugs to cope with their stress?

281 responses

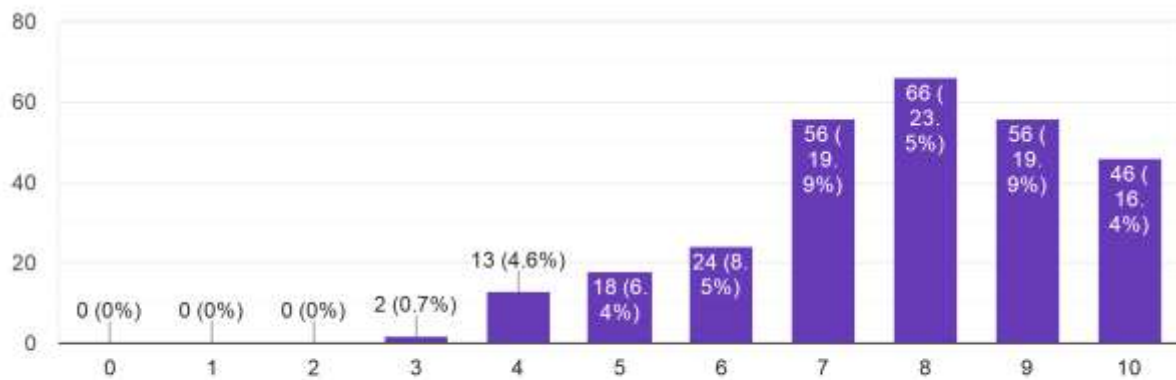


Figure 6. Military Alcohol/Drug

First responders edged out military only one time in the survey, with the question “How likely are XXXXXX to experience traumatic situations as part of their job” (Figures 7 and 8). First responders received an $\bar{x} = 9.2$ vs 8.8 for military.

How likely are FIRST RESPONDERS to experience traumatic situations as part of their job?

283 responses

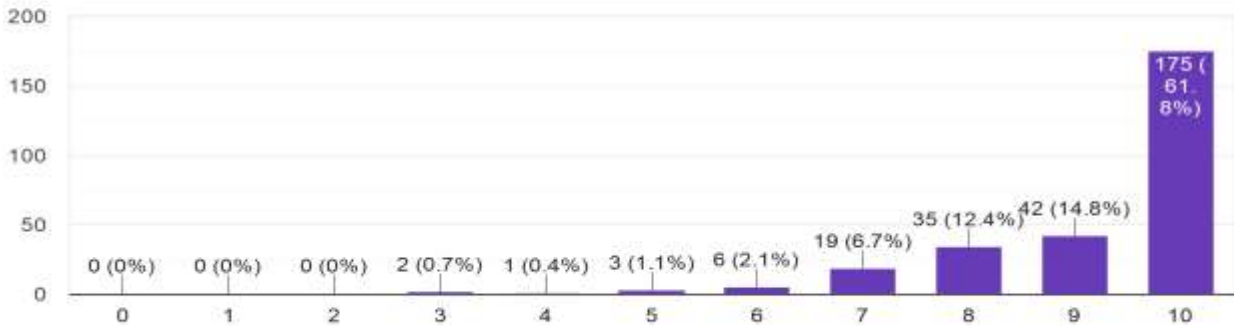


Figure 7. Likelihood of First Responder Trauma.

How likely are MILITARY VETERANS and ACTIVE DUTY SOLDIERS to experience traumatic situations as part of their job?

280 responses

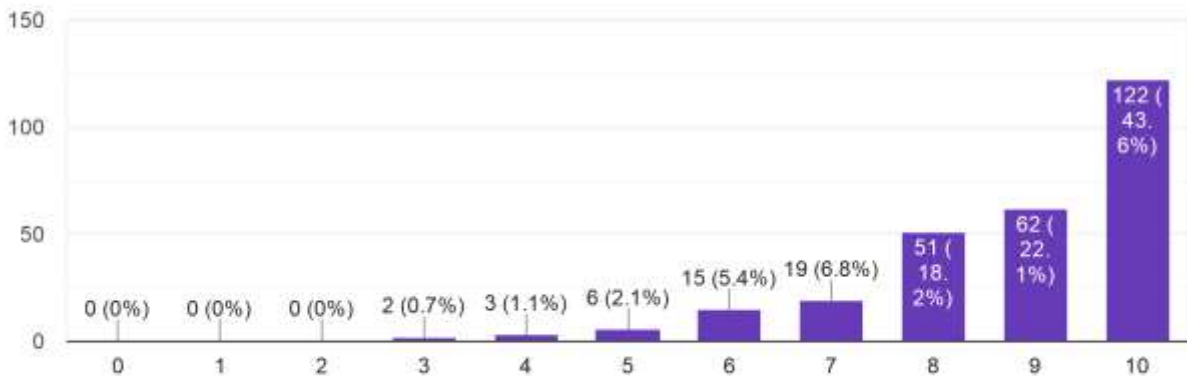


Figure 8. Likelihood of Military Trauma.

Both groups were statistically identical when respondents were asked their level of agreement to “It is unacceptable when XXXXXX seek treatment for PTSD symptoms since their job requires exposure to traumatic situations” ($\bar{x} = 0.3$), and when asked if one group commits suicide at the same rate as the other ($\bar{x} = 6.0$).

Conclusion

There is statistical evidence to support the hypothesis that public perception of PTSD in first responders is inaccurate compared to research-based estimations.

Discussion

The public underestimates the problem that PTSD seems to present within the first responder community; the reason for this remains a question for future research. A potential hypothesis exists in the lack of scientific information and public awareness campaigns that are available. While the military has made tremendous strides over the past 50 years to identify and treat those with PTSD, the emergency services are still in their infancy. The Emergency Medical Service is only 50 years old, for example, and represents a much smaller and less visible element of society than do our military branches. Nearly every adult knows or is related to someone who served in the military but the same cannot be said for first responders.

Because of the pressures placed upon first responders such as exposure to stressful situations, limited access to professional mental-health care, and relationship

stress; the number of individuals entering the field has declined dramatically.

Theoretically, at some yet-to-be defined point, there may no longer be enough responders to cover the more than 240 million emergency calls placed in the U.S. every year (HSI, 2018), given the serious detriment to mental health that plagues the industry. First responders (and more specifically EMS workers) earn comparatively low pay for what equates to an associate or bachelors degree program. The labor department notes that average paramedic salary in 2017 was \$33,000, just slightly over the poverty line for a family of four. This hourly wage is up significantly from the early 2000's where the average annual income was closer to \$25,000 (BOL, 2018). Additionally, due the extreme risk of PTSD and burnout, a term used to describe a paramedic who is in a state of emotional, physical, and mental exhaustion caused by excessive and prolonged stress, there is a paramedic shortage in the United States. To address this shortage, the field is estimated to recruit nearly 40,000 jobs within the next five years (BOL, 2018), potentially adding hundreds of new PTSD cases that, nonetheless, will remain largely invisible to the public.

Efforts to further understand psychological trauma within first responders are needed. Legislation focused on protecting worker rights regarding career acquired PTSD would open the dialogue between industry leaders and front-line responders. Coupled with rules that dictate pre-employment psychological evaluations,

interventions could be implemented to catch responder stress early, when it is more easily treated. Millions of first responders, many volunteers, dedicate their talents to helping others annually. It is time to extend protections to those who selflessly protect others.

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