

Firefighter Stress: An Analysis of Behavioral Health and Stress Management in the Fire Service

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Abstract

The fire service consistently ranks amongst the most stressful professions in the nation, and in 2015, it was ranked number one. Additionally, firefighters are consistently exposed to traumatic incidents that can produce a number of abnormal psychological reactions. As these symptoms manifest, firefighters resort to unhealthy coping mechanisms such as alcohol or substance abuse. Tragically, these symptoms also lead to suicidal ideations in many firefighters. This research seeks to gain a better understanding of the problem by examining the prevalence of symptoms amongst firefighters and the effectiveness of current stress management protocols being used in the profession. In conjunction with a literature review, an anonymous two-part survey was conducted on a random sampling of firefighters ($N = 32$). The survey was used as a quantitative measure of critical incident stress management [CISM] presence and composition, as well as the prevalence of previous mental illness or suicidal ideations. The survey also provided qualitative data on the perceived effectiveness of CISM programs and perceived career impact of seeking behavioral health treatment. The results of this research revealed that a majority of organizations have either no or poorly managed CISM programs. Additionally, firefighters are reluctant to utilize the programs. 77% of the participants reported never using the program available to them. This research supports the need for a national fire service agenda in examining the mental health impacts of the profession and the implementation of comprehensive CISM programs in every fire department.

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Introduction

A firefighter's every day is someone else's worst day. By its very nature, the fire service is an extremely stressful profession. In fact Adams (2015) reported that Career Cast ranks firefighting as the most stressful job in 2015. Indeed, fire service professionals are asked to observe and quickly mitigate extremely traumatic situations, all while spending long periods of time away from their loved ones. Even with this reality, the fire service continues to have an epidemic of behavioral health issues that go unrecognized and/or untreated. This has led to a crisis in the profession that is on par with any other risk associated with being a firefighter.

According to the Firefighter Behavioral Health Alliance [FFBHA] (www.ffbha.org), 202 firefighters have committed suicide between 2012 and now. However, these numbers are likely on the low side. Jeff Dill, the founder of FFBHA, estimated that only 25% of all firefighter suicides are reported to his organization. Additionally, there is no other tracking apparatus available on the national level to compile such data. Dill estimated that when this is factored into the figures, the fire service is likely losing 325 firefighters per year to suicide (personal communication, Dill, December 13, 2104). Additionally, Antonellis Jr. & Thompson (2012) wrote "the fire service seems reluctant to openly discuss the issue of suicide within the ranks" (p. 70). So, when we combine the level of stress associated with the profession; the number of suicides that are occurring; and the fact that suicide, or any mental health issue, is a taboo topic in the fire service, you have a recipe for an epidemic.

The purpose of this research is to examine the prevalence of behavioral health issues in the fire service and how they relate to formal critical incident stress management programs in the

profession; examine the likelihood of a firefighter utilizing a stress management program; and examine stress management practices that can be applied to the fire service. With this information, the fire service will be better equipped to discuss and prevent all behavioral health issues, including suicide.

I hypothesize that firefighter behavioral health problems occur at a higher rate than the public sector. Additionally, firefighter suicides occur at an alarming rate. To increase the firefighter's ability to cope with traumatic stress, the fire service must do a better job in implementing proven critical incident stress management [CISM] programs. To support or discredit this hypothesis, this research sought to ask four primary research questions: Do firefighters experience a higher prevalence of mental illness when compared to the general public; are firefighters unwilling to seek help for behavioral health issues; does the fire service utilize a comprehensive stress management approach or a more focused crisis intervention approach; and is the fire service's stress management protocol effective?

Review of Literature

Understanding PTSD

Before examining stress in the fire service, or its impact on fire service professionals, it is important to define post-traumatic stress disorder [PTSD] and critical incident stress [CIS]. Javidi & Yadollahie (2012) explained that an unexpected extreme stressor might cause PTSD. Examples of such stressors are trauma, natural disaster, combat, or terrorist attacks. Javidi & Yadollahie (2012) further explained PTSD commonly comes in two forms: Acute or chronic. As the names indicate, acute PTSD is such that symptoms persist for less than three months. Conversely, chronic PTSD symptoms are present for more than three months. This provides a simple understanding of PTSD; however, the condition deserves further examination.

Sareen (2014) explained that PTSD has been observed throughout history; however, it was not officially recognized as a diagnosable condition until 1980. It was at this time that PTSD was introduced in the third addition of the *Diagnostic and Statistical Manual of Mental Disorders* [DSM], which according to the American Psychiatric Association [APA] (2014) is “the standard classification of mental disorders used by mental health professionals in the United States” (para. 1). Sareen (2014) stated that the latest edition of the DSM has moved PTSD away from being categorized as an anxiety disorder and moved it to a new category called trauma and stress-related disorders. Regardless of the classification change, there have been some constants in the definition of PTSD. As indicated by Sareen (2014), the four primary factors in PTSD diagnosis are exposure to a stressful event; re-experiencing the symptoms of such an event through nightmares or flashbacks; efforts to avoid situations that trigger reminders of the event; and hyperarousal symptoms, such as sleep issues and mood instability.

This understanding of PTSD now allows us to examine CIS. Critical incident is a term used quite often in the emergency services to describe an incident that is particularly stressful. Often, these incidents involve trauma, children, multiple deaths, or injury to a fellow first responder. Cardinal (2014) explained that a critical incident lies outside of normal human experiences and causes a great deal of distress. However, this definition does not appear to apply to emergency services workers. Certainly, such an event could have a negative psychological impact on the non-emergency worker; however, the emergency worker is required to routinely experience events that are outside of normal human experiences. Halpern, Gurevich, Schwartz, & Brazeau (2009) reported that members of a large urban emergency medical services [EMS] organization defined a critical incident as “discrete incidents in the field which are attended by the ambulance worker. They involve strong emotions which last for long enough to be

uncomfortable in their own right or to produce uncomfortable sequelae” (p. 177). So, the conclusion can be drawn that a critical incident requires the attendance of emergency responders and may cause PTSD symptoms. This is the link between PTSD and CIS. A critical incident may be the trigger for PTSD in fire service professionals.

Post-Traumatic Growth

PTSD is not the only possible response to an exposure to a critical incident. The other documented response to such an event is known as post-traumatic growth [PTG]. PTG is a positive psychological response to trauma. These responses can manifest themselves in a number of ways, which include improvements in relationships, personality, self-efficacy, or spirituality (Moran, Schmidt, & Burkner, 2013). It is important to understand PTG as it relates to stress management programs, as it is an obvious benefit to promote these positive responses to traumatic incident exposure.

In a study examining firefighters, Kehl, Knuth, & Hulse (2014) reported that both PTSD and PTG are experienced by firefighters after exposure to traumatic incidents. This report listed three predictors of PTSD or PTG in firefighters: person pre-event characteristics, incident features, and cultural context. In pre-event characteristics, it was found that years of service and the number of life-threatening exposures experienced over time were positively correlated with PTSD. Interestingly, no single type of incident was associated with a higher incidence of PTSD; however, natural disasters were positively correlated with PTG. Also, witnessing death was associated with a higher incidence of PTSD. Finally, cultural context revealed there were variances in PTSD and PTG based upon the country in which the firefighter served. Kehl, Knuth, & Hulse (2014) conclude by recommending further research be conducted to identify and

examine organizational variables that reduce PTSD and increase PTG. Obviously, the reduction of the prior and promotion of the latter has major implications in CISM strategies for firefighters.

Prevalence of PTSD in Firefighters

A question that requires examination is the whether or not firefighters are at a higher risk for PTSD symptoms due to the exposures to critical incidents they experience in the profession. This has been well documented in previous research; however, there is some debate as to the actual figures. Corneil, Beaton, Murphy, Johnson, & Pike (1999) reported that urban firefighters from two different countries experienced PTSD symptoms at rates 15 to 18 times greater than a 1990 sample of Canadian men and 4 to 6 times greater than U.S. crime victims. They went on to write “this is a serious mental health problem of epidemic proportions in urban professional firefighters in North America” (p. 140).

In comparison to the numbers reported by Corneil, Beaton, Murphy, Johnson, & Pike (1999), there is at least one research report that found a wide variety of PTSD symptoms in firefighters. In fact, prevalence rates were found to vary between 6.5% and 37% depending on the measurement tool used and how it was applied. Additionally, when further symptomatic criteria found in DSM-IV, such as fear or helplessness, were added, prevalence rates dropped to 5% (Del Ben, Scotti, Chen, & Fortson, 2006). Meyer, Zimering, Daly, Knight, & Kamholz (2012) further examined this discrepancy and reported some studies suggest an increased risk for mental health symptoms in firefighters, while others suggest a higher level of resilience. Obviously, there are disparities in the research examining PTSD prevalence rates in firefighters.

The key factor linking all of these reports is the manner in which the presence of symptoms was assessed. The methodology used in many of the studies in firefighters used a measurement tool requiring the respondents to self-report symptoms. In fact, this study asked

firefighters to self-report if they had sought behavioral health treatment. While this seems to be a reliable method for gathering such data, the nuisances of the fire service culture must be considered. The fire service culture views admission or discussion of mental health issues as a taboo topic. Many in the profession consider having a mental health issue as a sign of weakness. This causes symptoms to often go unreported (Antonellis Jr. & Thompson, 2012; Pignataro, 2013). This cultural phenomenon may be a significant factor in the disparity between different studies. Self-reporting alone may not be a sufficient measurement tool.

PTSD Management in the Fire Service

Regardless of the disparity found in PTSD research amongst firefighters, it is clear that behavioral health and suicide are a major problem in the profession. Wagner, McFee, & Martin (2010) wrote “fire service workers are regularly exposed to both physical and psychological risks, and as a result, firefighting can be considered a high risk occupation with respect to traumatic stress exposure” (p. 26). This warrants an examination of what methods are being used to identify and treat PTSD symptoms in the fire service.

There are a number of trade publications and academic research reports that offer guidance on what the fire service can do to more effectively mitigate the impacts of work-related stress, PTSD, and CIS in its personnel. However, these recommendations are not universally applied across the profession. In the Redstone Arsenal Fire and Emergency Services, the department relies on an external employee assistance program [EAP], which is staffed by personnel who may or may not be trained in CISM or CISD procedures. Likewise, the Fort Leavenworth Fire and Emergency Services uses a similar program. Carlisle (1999) reported the Mountain Brook, AL Fire Department had no program at the time of his publication.

In contrast to the somewhat ineffective or absent programs described in the previous paragraph, there are some comprehensive, and successful, stress management programs in the American fire service. The International Association of Firefighters [IAFF] (2001) reported the San Jose Fire Department utilized an external employee assistance committee [EAC] that is comprised of behavioral health professionals, substance abuse counselors, and family life counselors. Additionally, they reported the Boston Fire Department established a joint labor/management program that provides service to active members, family members, and retirees 24 hours a day/7 days a week.

As you can see, the existence and types of programs in use in the fire service vary as widely as the PTSD prevalence found in the research. Even though the fire service has recognized occupational stress, PTSD, and CIS as a problem, there does not seem to be a general consensus on what programs work the best. Stress management solutions range from nothing at all or simple debriefings to comprehensive behavioral health programs.

Stress Management Strategies in Other At-Risk Populations

One of the most studied populations in regards to PTSD is the veteran population. As a nation, we have been at war for over a decade. This provides a significant amount of research in what methods have proven effective in the management of stress amongst veterans. It is important to examine this and place it into context with the fire service population, as there are many parallels between the impacts of stress amongst the two. In addition to examining strategies used in veteran populations, it is important to understand other treatment strategies that are available and their potential efficacy in the fire service.

Moran, Schmidt, & Burker (2013) explained that one in six veterans of the conflicts in Afghanistan and Iraq met the criteria for PTSD, depression, and generalized anxiety upon

returning from combat. To treat PTSD symptoms and promote PTG in veterans, they recommended five treatment modalities: Prolonged exposure [PE] therapy, which focuses on revisiting the event and processing it immediately; cognitive therapies, which focus on the automatic thoughts associated with a traumatic event; dialectical behavior therapy [DBT], which focuses on improving mindfulness, distress tolerance, and emotional regulation; journaling, which allows the PTSD sufferer to process their traumas more effectively; and battlemind, which is a new program available to soldiers and is designed to build resiliency and effective coping strategies. The Veteran's Administration [VA] National Center for PTSD (2014) also lists these therapies as options for veterans; however, they added pharmacological intervention as another treatment layer.

Another commonly discussed, albeit controversial, method is known as CISM. Everly & Mitchell (2011) explain that CISM is a comprehensive crisis intervention protocol that consists of seven components. The seven components are: Pre-crisis preparation; disaster or large-scale incident support programs; defusing, which is a three phase, structured small group discussion; CISD; one-on-one crisis intervention and counseling; family crisis intervention; and follow-up or referral mechanisms for assessment or treatment. The CISM model is not a single-dimension process and each component must be carefully utilized in order for the model to be effective. This holistic view of stress management seems to be an effective model for early intervention, while providing the tools to support therapies such as those found effective in veterans. In fact, Mitchell (2003) explained "CISM has been successfully utilized for 28 years by a wide range of organizations in 28 countries around the world" (p. 57).

Methods

This study uses a mixed-methods approach to examine the identified problem. First, a literature review was conducted to determine what previous research has been completed on behavioral health in the fire service, or similar populations, as well as to examine post-traumatic stress and effective management methods in firefighters and other high-risk populations. Second a random pool of firefighters ($N = 32$) was asked to complete a two-part survey that was designed to examine the presence of CISM programs, the composition of such programs, the perceived effectiveness of such programs, and the participant's willingness to utilize such programs.

The survey was designed as a two-part anonymous survey in which the first part would measure quantitative data on the presence of CISM programs and their composition. The second part measured qualitative data and asked participants to report what their perception was of the program's effectiveness and examine their willingness to use the program. The second portion also asked the respondents to report their perceived daily level of stress using an ordinal scale and if they had ever sought treatment for a behavioral health issue or contemplated suicide. Confidentiality was maintained through electronic masking of the subjects identifying information. The web-based survey tool used by the author did not request, nor reveal any identifying information about the respondents.

The survey was distributed, via social media messaging, to a pool of firefighters from three areas: Paid federal firefighters, paid municipal firefighters, and municipal volunteer firefighters. Of the 51 participants, 34 accessed the survey. Two of the results were removed from the data analysis due to failure to complete the survey. This reduced the final survey pool to 32. The responses were examined in an effort to find similarities in the researched literature

and to determine if there was a perception of benefit, no benefit, or negative outcome to utilizing a CISM program.

Results

A slight majority of the participants reported their organization had no CISM program at all. When the results were tabulated, 55% reported no CISM program, while 45% reported there was a CISM program. Those who reported no CISM program were asked to skip to part 2 of the survey, as they could report the composition or effectiveness of a non-existent program. The source of the various CISM programs revealed a wide variety of processes. There were countywide programs, external programs provided by third parties, programs provided by other organizations within the local government structure, and simple debriefings, which indicate CISD programs rather than actual CISM.

The composition of the CISM programs revealed some rather interesting percentages. Only 52% of the participants reported that chief officers or clergy members were a part of the program. Even more perplexing was the finding that only 26% reported the participation of behavioral health specialists, and 17% reported the participation of substance abuse professionals. None of the participants reported their programs included family life or marriage counselors. Finally, 31% reported the programs used a peer support system consisting of other fire service professionals.

The utilization of the programs was revealed to be quite low. Only 23% of the participants reported having ever utilized the CISM program. This is likely related to the perceived effectiveness of the programs. Participants were asked to rate the effectiveness of the program using poor, fair, good, or excellent as choices. 35% rated the effectiveness as poor,

30% as fair, 25% as good, and 10% as excellent. Obviously, the firefighters examined in this research do not feel confident in their CISM programs' ability to function effectively.

Utilization of the programs was likely impacted by the perception of comfort in seeking treatment for conditions associated with work-related stress and the perception that treatment could have a negative impact on one's career. 53% of the participants reported they were not comfortable seeking treatment for work-related stress. Additionally, 56% of the participants reported they felt as though their career would be negatively impacted if they sought behavioral health treatment.

Finally, the participants were asked to report if they had ever sought treatment for a behavioral health issue or if they had ever had suicidal ideations. 75% of the participants reported they had never sought behavioral health treatment. Similarly, 94% reported they had never had any suicidal ideations. This is in spite of the fact that, when rated on a scale of 1-10, a majority of the participants reported their daily stress levels to be higher than 5.

Discussion

The results of this research support the hypothesis that firefighters are at a greater risk for stress related mental health issues. While the research does not provide the data to support the claim that firefighters experience PTSD symptoms at higher rates than the general public, it does support the idea that firefighters are exposed to more DSM-V criteria for PTSD. Additionally, the poor composition of CISM programs and lack of willingness to use the programs further indicates that firefighters will experience behavioral health issues at higher rates simply because of the exposure they experience and lack of identification or treatment of symptoms.

The research into behavioral health issues in the fire service significantly limits the ability of those in the profession to develop an effective management protocol. Pignataro (2013)

explained “very little is known about suicide rates among fire service personnel” (p. 38). Additionally, Del Ben, Scotti, Chen, & Fortson (2006) explained that while PTSD has been studied extensively in victim populations, little focus has been given to the study of PTSD symptoms in first responders. Additionally, the measurement tools used to identify PTSD risk in firefighters vary; thus, they produce a wide range of results (Del Ben, Scotti, Chen, & Fortson, 2006). The inconsistencies in composition and purpose of CISM programs found by this research lend themselves to indicating why the fire service does not have a clear picture of the behavioral health issue. There simply is not a consistent method for predicting or identifying PTSD in firefighters being used. However, there are some measurement tools that have been recently developed which may offer a consistent tool to examine the potential for, or presence of, PTSD symptoms in firefighters.

Lambert, Benight, Harrison, & Cieslak (2012) reported the Firefighter Coping Self-Efficacy Scale [FFCSE] produced valid and reliable results in predicting a firefighter’s ability to cope with stressful or traumatic experiences encountered in the line of duty. Additionally, a scale for diagnosis that is consistent with DSM-V criteria for PTSD symptoms could be used as a reliable tool for measuring the presence of symptoms in firefighters.

The results of this research seem to support the idea that the fire service professional has a negative perception of CISM programs. Jeff Dill stated “Suicide is one of those subjects that is taboo in our culture, in the fire service, it’s double taboo” (as cited in Pignataro, 2013, p. 38). With 53% of the participants not feeling comfortable with seeking PTSD treatment and 56% perceiving a negative career impact if treatment was sought clearly supports Dill’s assertion. Certainly, no one would ever seek help if they thought it would risk their livelihood. This is particularly true in firefighters, who often claim their profession is the greatest of any job. Thus,

this research also supports the hypothesis that the fire service must implement a more comprehensive CISM strategy in an effort to reduce PTSD, job-related stress, and suicide in the profession

Limitations

This research report is limited by four primary factors. First, the pool of subjects is small ($N = 32$) and may not represent a reasonable cross-section of the American fire service. Second, there was no pool of control subjects from the normal civilian populous with which to compare the firefighter's results. Third, there is no national data collection process for firefighter behavioral health conditions or suicides. This limits the availability of previous research on the topic. Finally, time was a limiting factor, as this topic deserves much more time than the constraints applied to this particular study. It is also important to note that, as a researcher, the author is a novice in both academic research and psychological disorders.

Future Research and Recommendations

The lack of clinical research examining stress, the impacts of consistent stress exposure over time, and other behavioral health issues in the fire service is still lacking. In order to fully understand the nuisances of how the profession, and its demands, impact the behavioral health of firefighters, a large-scale study is required. There are a number of research questions that warrant examination in such a study. What are the impacts of job-related stress on the firefighter's overall potential for developing PTSD? What is the efficacy of a seven-component CISM program in a firefighter population? Is there a difference in stress response between volunteer and paid firefighters? These are all questions that should be researched in order to better understand the behavioral health problem in the fire service. Additionally, a larger study

with a control group is warranted in order to further examine the composition and perception of CISM programs in the fire service.

The review of literature and results of this research lead the author to offer four recommendations. First, a consistent measurement tool for predicting and identifying PTSD symptoms must be identified and implemented across the fire service. The prediction tool could be used in recruiting and promotional processes as a means of identifying firefighters who are at a greater risk for developing PTSD. This type of evaluation is no different than identifying cardiac risk factors during the annual medical examination. Similar to the medical screening, the prediction measure could reveal the potential to save a firefighter's life before a catastrophic mental health event occurs. Second, a national reporting database should be implemented in the U.S. Fire Service. Just as the National Fire Incident Reporting System [NFIRS] tracks incident data and the Firefighter Near-Miss Reporting System tracks near-miss incidents, a national mental health database could provide valuable data in combatting mental health issues in the fire service. In short, behavioral health issues should be viewed as an occupational injury and tracked accordingly. Third, the fire service should develop a critical incident stress inventory. Such an inventory would facilitate a better understanding of what types of incidents can lead to PTSD symptoms (Donnelly & Bennett, 2014). Finally, fire service organizations should implement the CISM method in an effort to combat stress in firefighters. Mitchell (2004) explains such a program should be a comprehensive approach that integrates multiple tactics in mitigating the effects of CIS. Such a program should focus on pre-incident education, peer-support networks, increasing PTG, and decreasing PTSD.

Conclusion

The fire service certainly has a need to further understand the implications the profession has on its members. Efforts to combat the problem are disjointed, and there is a lack of a national agenda on the topic. The fire service must promote further research and implement comprehensive CISM programs in order to understand and combat behavioral health issues in the profession and the epidemic of suicide amongst its personnel. It is the hope of the author that this research can serve as a catalyst to further the understanding of PTSD in our nation's bravest.

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