HEROES AT RISK: An Overview of How Emotional Intelligence Can Reduce Death and Injury for Firefighters

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ABSTRACT

Contrary to popular belief, the leading cause of death for firefighters is heart attack, not physical injury. Even more startling is the fact that most deaths do not happen during an active call. Over 47% of firefighter deaths are due to cardiac arrest (USFA-FEMA, 2013). Although various prevention methods have been defined and put into place, deaths have not decreased over the years, fire ground injury rates have held steady, and stress levels are increasing (Carlisle, 1999). This lack of improvement confirms the need for new strategies that promote wellness, awareness, and effective personal reactions to incident-related stress (Brennan, 2002; Duncan, *et al.*, 2013). While the number of fatal heart attacks has held steady, the attempts to reduce these statistics have centred on increasing physical exercise, better diet, reducing smoking and alcohol, more training in standard operating procedures, weight loss, and getting enough sleep (FEMA, 2002). The efforts that address fatality issues suggest improving physical health, but few define psychological or emotional programs to deal with the hidden effects of stress, and reduce the related results of injury and death. Exercise does help with overall health, but such programs have not reduced the deaths caused by cardiac arrest. Thus, other prevention factors must be considered. This retrospective study and exploratory paper investigates statistical facts regarding firefighter death and injury, describes current methods that try to deal with these, and defines an entirely new approach to help rescue our rescuers through increasing their emotional intelligence skills.

1. Introduction

Firefighting is a high risk, stressful profession. Firefighters and paramedics suffer from job stress, burn-out, and retention issues due to the very nature of their work (Brennan, 2002; Fishkin, 1989; Kennedy, 2007). They are required to respond immediately at all hours to emergencies, risk their lives in dangerous situations, deal with the loss of people they could not help, be exposed to death and destruction, and handle interactions between stressed/ill/angry people, among other incidents. Although they are carefully trained in standard operating procedures, they are often not prepared emotionally to deal with all the aspects of unknown situations, or the lingering after-effects of stress (Carlisle, 1999; Shantz, 2002). This can disrupt their careers, health, decisions during an event, and even personal relationships, sometimes resulting in unexpected heart attacks (Firefighter Nation, 2013; Los Angeles Fire Department, 2013). This paper is designed to highlight the literature review on the efforts to improve safety for firefighters through an emphasis on learning emotional in addition to operational knowledge.

Society has an investment in the ability of firefighting personnel to maintain their responsibilities effectively. With the increasing threats of natural disasters, terrorist attacks, active shooters; residential, commercial, and wild-land fires; homeless medical needs, urban rescue, daily hassle (e.g. pet rescue), and other intrusions, people depend on firefighting personnel for a safe and secure environment (Milen, 2009). It is a fundamental aspect of community service. But fire department personnel work long hours with much stress, both anticipated and actual, and thus they need to recognize and implement effective coping strategies.

There is an on-going crisis in the firefighter and paramedic fields, and the related emergency service occupations that deal with very stressful situations (Brennan, 2002; Fishkin, 1989; Karimi *et al.*, 2013; Lloyd, 2004; Maslach, Schaufeli, and Leiter, 2001; Shantz, 2002). In addition to dealing with dangerous incidents, there are major concerns within the profession including worker shortages, budget constraints, lack of specialized equipment and training, complexity of incidents, high levels of stress and burnout, increased terrorist and active shooter events, communication and relationship issues, health concerns, and an aging

population that requires more emergency services (Carlisle, 1999; Cline, 2013; Firefighter Support Foundation, 2013).

Over 47% of firefighter deaths are due to cardiac arrest; 32% of all fatalities are not incident-related and occur off-duty; and 16% of deaths happen after responding to an event (USFA-FEMA, 2013). Heart attacks for firefighters are also significantly higher than for police and construction workers (FEMA, 2002, p. 26). They are 44% firefighters, 25% for guards, 22 % for police, 15% of other occupational fatalities, 10% for construction trades, and only 10% for construction labourers.

These facts highlight that firefighter rescuers need more protection from hidden emotional stress before, during, and after an event. Emotional Intelligence (EI) has been shown to reduce stress, improve decision-making skills, promote effective communication, reduce burn-out, and increase job satisfaction and retention among emergency service workers (Barishansky , 2013; Brennan, 2002; Ghalandar and Jogh, 2012; Karimi *et al.*, 2013; Smith, 2007; Solverson, 2007). Thus, increasing EI skills among firefighters and paramedics becomes a crucial task in protecting our rescuers.

2. Programs to reduce stress

Firefighters have one of the most stressful jobs in the world (Brennan, 2002; Finley, 2002; Fishkin, 1989, Frolik, 2012). Stress can cause an inflammatory response, which then leads to illnesses such as heart disease, diabetes, anxiety, depression, and post-traumatic stress disorder (PTSD) (National Volunteer Fire Council, 2013). Throughout their careers, they are expected by the department, civic groups, city government, and the public to perform like heroes. But they are not superhuman – They are just ordinary people asked to be extraordinary in emergency situations (Ottlinger, 1997). Like others, emergency service personnel have their limits. Unmanaged stress is a serious problem. It is critical for fire suppression and emergency medical service (EMS) programs to define and implement methods to determine when stress is high by recognizing the symptoms, and providing training to help diffuse the emotional reactions to traumatic incidents. When stress is too great, symptoms such as ‘blanking out', not thinking clearly, and not knowing what to do next can occur (Gohm and Baumann, 2001). Fullerton *et al.* (1992) added other negative reactions

such as identification with the victims, feeling helpless and guilty, and having physical reactions.

In addition to general job stress from emergency incidents, burnout for firefighters and EMS personnel may be caused by public abuse of services, lack of sleep, high levels of responsibility, lack of autonomy, providing basic medical care instead of using required advanced medical expertise, and feeling unappreciated (Lloyd, 2004). Hildebrand (1984; as cited in Brennan, 2002, p. 11) outlined five stressors as: "Level of uncertainty, physical response to an alarm, interpersonal tension, exposure to human tragedy, and fear." Wellness in the fire service includes the control, diffusion, and management of firefighter stress reactions. Research has shown that when firefighters learned to manage their stress they showed better physical and psychological wellness, higher morale, and less absenteeism (Shantz, 2002).

Although the number of fatal heart attacks among firefighters and paramedics has held steady, and is a critical problem in the profession, the attempts to reduce these statistics have centred around increased physical exercise, better diet, reduced smoking and alcohol, more SOP training, weight loss, and getting enough sleep (Federal Emergency Management Agency, 2002). The American Heart Association website contains educational materials on prevention strategies and heart attack (http://www. americanheart.org). *Firehouse Magazine* (http://www.firehouse.com/fitness/) has information on fitness and well-being. This includes workouts for firefighters on cardiovascular conditioning, strength and flexibility training, and information on health trends (FEMA, 2002, p. 44). Physical fitness programs will inherently help with stress, but such programs have not reduced the deaths by heart attack. Thus, other causes and prevention programs must be considered.

In regard to emotions, there is a belief that a firefighter (FF) might be seen as weak if he shows emotion or seeks psychological counselling (Dill, 2011). The expectation to perform flawlessly in every emergency situation can be emotionally draining. The conflict between reason and emotion might have started with the stoics of ancient Greece who regarded feelings as being too self-centred to be reliable. Unfortunately, because fire service culture is built largely on bravery and pride, firefighters often refrain from asking for help. Another significant problem is that counsellors provided through health insurance programs often do not understand the fire service industry (Pindelski, 2013).

But, there is a growing recognition in business that highly successful people aren't just technically competent; they possess special people skills, or emotional intelligence (Becker, 2013; Kastros, 2013; Messenger, 2012). During long periods of stress some firefighters have suffered depression, addictions, suicide, sickness, anxiety, anger, PTSD, and even homicide (Dill, 2011; Pindelski, 2013). McNamee (2001) pointed out that on average firefighters die 10 years younger than the general population, and suggested stress and heart conditions were a primary cause. Firefighter suicides contradict the very basis of fire service because the profession is established to help save lives, so it is the antithesis of the code of conduct when one takes his own life.

The symptoms of PTSD caused by stress falls into the following categories: Intrusive memories, emotional numbness, avoidance, anxiety, and increased emotional arousal. (Pindelski, 2013) Intrusive memory symptoms are defined by Pindelski (2013, para. 9) as ". . . continuously reliving a traumatic event through flashbacks or nightmares, which strengthens their negative impact, undermining health." Avoidance or emotional numbing is exhibited when a firefighter deliberately avoids talking about an event, quits enjoying hobbies, forgets things, and has trouble concentrating and maintaining relationships. Anxiety and increased emotional arousal can cause a firefighter to be highly irritable, show anger, or suffer from insomnia. Other symptoms of stress include greater chance of "cancer, viral infections, weaker immune system, depression, myocardial infarction, ulcers, diabetes, and asthma" (Goleman, 1995, p. 172). By contrast, learned optimism applied through the use of Emotional Intelligence has a subtle healing power, resulting in faster recovery or a reduction in symptoms.

A review of literature shows just how critical psychological wellness is for fighting occupational stress. Incidents of global and local terrorism such as the World Trade Centre bombing, the Columbine High School incident, and the Atlanta Olympic Park bombing, and the rise of active shooters, require fire service personnel to endure terrible physical and psychological battering as they perform their duties (Carlisle, 1999; Cline, 2013). Sometimes it is the fame that occurs after a high-profile rescue that causes emotional trauma. A sad example involved firefighter Robert O'Donnell (Katz, 1995). He was hailed as a national hero after he rescued a baby from a well in Midland, Texas. He then suffered severe Post Traumatic Stress Disorder (PTSD) from both the stress of fame and then the ensuing loss of

public interest. He gradually became an emotionally troubled firefighter, lost his job and family, and eventually committed suicide. He was a victim of psychological trauma related to his profession (Katz, 1995; Munk, 1998).

What can be done to protect emergency responders? One answer is that through EI workshops firefighters (FFs) and supervisors can become educated on the prevention and awareness of emotional and behavioural health issues within the fire service. Not all FFs respond the same to traumatic events. The difference, and why such occupational stress is critical to acknowledge within the fire service, has to do with the "unfortunate regularity" such workers face in horrible, dangerous, and stressful situations. But eeven as reliance on Standard Operating Procedures (SOPs) and Standard Operating Guidelines (SOGs) has increased over the years, fire ground injury rates have held steady, and stress is increasing (Carlisle, 1999). This lack of improvement shows a need for other prevention strategies in promoting FF awareness and reactions to stress (Brennan, 2002; Duncan, 2013). Duncan *et al.* (2013) studied international fire departments from Australia, Canada, Japan, the United Kingdom (U.K.) and the U.S., and there was much variability in SOPs.

Those in leadership roles, such as Fire Chiefs, have always been responsible for their firefighters' health and safety, but that responsibility now includes recognizing emotional and behavioural issues that can be just as debilitating as a line-of-duty injury (Dill, 2011). In addition to traumas experienced on the job, officers must be aware of outside influences, such as financial loss, a major lifestyle change, or family illness. Lorber (2013) and Divver (2013) outlined the specific use of emotional intelligence within a Fire Chief's leadership using Goleman's (1998) five EI components of self-awareness, self-regulation, motivation, empathy, and social skills. Job competencies are of two types; hard skills and soft skills. Hard skills are the mechanics of the job, like rescue procedures, EMS protocols and SOPs. Soft skills, or emotional intelligence, are less tangible but even more important. Organizational development research shows that more than 65% of skills essential for effective job performance are soft skills (Dill, 2011; Pessemier, 2003). Officers not only need the ability to read how fires react and behave, but also to read and respond to the reactions and behaviors of Firefighter/Paramedics. The International Association of Fire Chiefs strongly recommends that departments include relevant health and safety training to ensure the safety of fire/EMS professionals (International Association of Fire Chiefs, 2013). Firefighters inherently focus

on the mission at hand, but officers must reinforce the importance of and methods for FF/PMs to save their own lives as well as the lives of other emergency responders.

3. Applying emotional intelligence to firefighter tasks

Fire fighting is unique. While the actual day-to-day tasks are similar and repetitive, they are never in the same setting or situation! The in-station tasks of equipment maintenance and SOP study are balanced by the emergency calls. Waiting for a call is a primary task in a firefighter's life, but when the alarm sounds they must immediately react and jump into action (Barnes, 2000). This causes physiological and psychological stress (Solverson, 2007). A firefighter's training might be assumed to offer protection from the stresses of their work. This is a false assumption. As acknowledged by the scholars in the field no SOP training can help prepare firefighters and paramedics for the trauma of "dismembered bodies, the screams of injured children, knowing that people may be trapped in a burning building, or having to deal with distressed people who suspect family members may be trapped" (Barnes, 2000. P. 60). They carry this stress with them even when off-duty, affecting their mental and physical states, health, and personal relationships.

Psychological stress a complex phenomenon. Actual research on the effects of firefighter stress is scarce, and thus meta-analysis is not practical due to the variety of measurement techniques, and reporting incidents within the fire service (Burgess, *et al.*, 2013). Information on job related stress in related emergency service fields was also reviewed (Ashkanasy and Humphrey, 2011; Ghalandari, and Jogh 2012; Karimi *et al.*, 2013). Solverson (2007, p. 2) stated "the importance emotional intelligence plays in job performance, advancement, and survival redefines what it means to be a smart firefighter." To persevere under pressure is a vital emotional competency.

Emotional labour describes how individuals manage their emotions in job situations (Ghalandari and Jogh, 2012). It exists widely within the human service industry. Employees can manage emotions through two different processes: (1) surface acting and (2) deep acting. In surface acting, employees react in a style requested by an employer, even when they may feel differently, perhaps using a counterfeit a smile to deal with problem clients. Deep acting requires more control of internal thoughts (Brotheridge, 2006).

Emotional intelligence (EI) is "the ability to perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotions so as to promote emotional and intellectual growth" (Mayer, Salovey, and Caruso, 2004, p. 197). EI is as necessary as Intellectual Intelligence (IQ) for success in life. Intellectual Intelligence works to acquire learned facts to understand and resolve an issue, but EI helps manage the stress and emotions to implement these solutions in an optimal way. The components of EI include: self-awareness, self-regulation, motivation, empathy, and social skills (Goleman, 1998, p. 94; Salovey and Mayer, 1990). These are relevant to firefighters and paramedics because they are all important in the interaction with clients, staff, and colleagues; the lack of such skills can result in 'burnout' and high turnover (Ashkanasy and Humphrey, 2011). To prevent this, firefighters, paramedics, and other emergency care workers must learn to adopt new strategies to protect both their health and that of the people they treat and work with (McQueen, 2004) Studies have found that stronger emotional intelligence skills reduce self-reported traumatic stress, depression, and anxiety for firefighters (Solverson, 2007; Wagner and Martin, 2012). By educating and creating awareness about stress, and by implementing emotional intelligence skills and changes in lifestyle, the overall health of firefighters can be improved (National Volunteer Fire Council, 2013).

Seyle (1974) wrote about three stages of firefighter stress reactions during an incident: 1) the alarm or emergency reaction, 2) the resistance, and 3) the exhaustion stage (p. 26). In the alarm stage a physiological rush of adrenalin occurs while the resistance to stress diminishes. This is the fight or flight stage. During the resistance stage the body adjusts and resistance rises, but in the third state exhaustion sets in, the body can no longer sustain the resistance, and the symptoms from the first stage return, sometimes causing death. Brigati (1995) suggested that education is the key to managing stress. By understanding how and why stress occurs each person can develop practical solutions to stress and the ensuing physiological reactions. Stress is cumulative. This is very important because while occupational stress does occur during emergency incidents, the connection between momentary stress and lifelong stress is not always emphasized or understood (Finley, 2002).

Casey (2013) stated that research supports a direct correlation between EI and successful leadership. He stated that "Fire officers obviously cannot solve every problem, but

they can surely recognize that every problem has an effect on human feelings that is unique to every person, time, and circumstance. The presence of emotion should never be overlooked, particularly during times of heightened sensitivity" (p. 25).

The Fire Service's primary role is to protect lives and property. In emergencies the management style is 'command and control,' but since fire related incidents account for only 3% of emergency responses, the 'command and control' approach to general day-to-day management or medical EMS responses might not be the most effective (Casey, 2013; Smith, 2007). For the other 97% of incidents, a more effective approach would use the principles of positive leadership and Emotional Intelligence (EI). Whereas Goleman (1998 as cited in Bradberry and Greaves, 2005, p. 31) used a four prong approach to EI that consisted of emotional awareness, self-management, social awareness, and relationship management, others have divided these skills into five categories, as shown below. Lorber (2013) and Divver (2013) defined five key elements of EI and how they might be used within fire leadership:

1. **Self-awareness.** Is aware of feelings and emotions, personal strengths and weaknesses. Takes daily notes and slows down when frustrated to examine why. Understands own weaknesses and shares them with the crew.

2. **Self-regulation**. Does not attack others, rush emotional decisions, stereotype people, or compromise values. Maintains flexibility, commitment, and personal accountability. Knows and follows the fire department "code of ethics." Holds self accountable. Control impulses and channels that energy for good results.

3. **Motivation.** Works toward goals, show optimism, and respects the value and quality of colleague's work. Remembers the attraction of the job, and finds something positive in each situation. Sets an example and shows a passion for purpose and achievement to become a change agent for the fire service.

4. **Empathy.** Puts themselves in someone else's position. Responds to body language and feelings, shows appreciation to subordinates. Takes into account the feelings of others.

5. **Social skills.** Good communicator, open to both positive and negative news. Manages change diplomatically, sets an example, and praises others. Builds rapport with staff. (Lorber, 2013, para. 4; Divver, 2013, para. 8)

Lorber (2013) concluded by stating that the three most critical EI skills in a fire supervisory role are conflict resolution, good communication, and praise of others; while Divver (2013) stated that applying excellent policies, practices, and recognition will result in a dynamic team of well-grounded, motivated, and competent firefighters.

4. Significance and innovation

Fire department personnel around the globe have both specific and universal traits related to handling incidents and stress. Each country has its own codes related to priorities for national health procedures for emergency professionals. By studying firefighter protocol in diverse cultures a comprehensive EI foundation can be established that is generic to firefighter tasks, which can be then used to promote and customize related EI training programs. Some have even suggested that EI assessment be part of the hiring process (Carlisle, 1999). But unlike the intelligent quotient (IQ) which is fixed early in life, emotional intelligence (EI) can be learned through life experience and training courses (McLaughlin, 2013; Messenger, 2012; Sells, 2013; Smith, 2007; Solverson, 2007).

5. Summary

The purpose of this paper was to provide an overview of how stress can affect the health and well-being of fire fighters and paramedics, highlight the statistical facts surrounding death and injury in the industry both on and off duty, and to formulate a plan for positive stress reduction programs that utilize the principles of Emotional Intelligence. Solverson (2007) listed an "Emotional Competence Framework" for applying EI in stressful situations for firefighters. He stated that emotions are required in order to make rational decisions; they temper automatic logic and result in more appropriate and effective behaviour. However, this requires self-awareness of emotions which mediates any rampant reactions, and results in a less stressful but more effective experience and better health.

Research in psychobiology has provided a greater insight into the scientific aspect of emotions and physical changes that occur during emergency incidents. When firefighters do

not have the chance understand and recover from earlier traumatic responses the symptoms of stress may aggregate. Training in stress reduction techniques must be made available to professional firefighters, paramedics, and other emergency responders to learn how to deal more effectively with such emotionally charged duties.

How one thinks and makes decisions on a physical, emotional, and social level delineates the consequences and reinforces the role that emotional intelligence (EI) plays in job performance, wellness, and survival. The direct and indirect benefits and effects defined through using EI to reduce firefighter/paramedic stress provides a promising solution to the risk of potential hidden health issues and early death that plagues the fire service industry.

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