

**SAMHSA**

**Disaster Technical Assistance Center  
Supplemental Research Bulletin**

**First Responders: Behavioral Health  
Concerns, Emergency Response, and  
Trauma**

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The focus of the *Supplemental Research Bulletin* is to provide an overview of the current literature on a specific topic and make it easy to understand for disaster behavioral health professionals who are not otherwise exposed to the research. The product aims to assist professionals and paraprofessionals involved in all-hazards planning, disaster behavioral health response and recovery, and/or Crisis Counseling Assistance and Training Program grant activities.

## INTRODUCTION

This issue of the *Supplemental Research Bulletin* focuses on mental health and substance use (behavioral health) concerns in first responders. It is estimated that 30 percent of first responders develop behavioral health conditions including, but not limited to, depression and posttraumatic stress disorder (PTSD), as compared with 20 percent in the general population (Abbot et al., 2015). In a study about suicidality, firefighters were reported to have higher attempt and ideation rates than the general population (Stanley et al., 2016). In law enforcement, the estimates suggest between 125 and 300 police officers commit suicide every year (Badge of Life, 2016).

First responders are usually the first on the scene to face challenging, dangerous, and draining situations. They are also the first to reach out to disaster survivors and provide emotional and physical support to them. These duties, although essential to the entire community, are strenuous to first responders and with time put them at an increased risk of trauma. The purposes of this publication are to discuss the challenges encountered by first responders during regular duty as well as following disasters; shed more light on the risks and behavioral health consequences (such as PTSD, stress, and depression) of serving as a first responder; and present steps that can be taken to reduce these risks either on the individual or institutional levels.

Those who are among the first to respond to a disaster are referred to by different terms, depending on whether the speaker and audience are part of federal government, state and local government, or other entities, and they may not be clearly defined at all. According to Title 6—Domestic Security of the U.S. Code, first responders include these individuals and groups:

The term “emergency response providers” includes Federal, State, and local governmental and nongovernmental emergency public safety, fire, law enforcement, emergency response, emergency medical (including hospital emergency facilities), and related personnel, agencies, and authorities (Domestic Security, 2010).

The terms “first responders” and “public health workers” (the term used in some papers) are somewhat arbitrary; the terms include police, firefighters, search and rescue personnel, and emergency and paramedical teams (Benedek, Fullerton, & Ursano, 2007). For the purpose of this publication we will concentrate on three major groups that will be discussed separately—whenever possible—or combined under the term first responders:

- Emergency medical services (EMS)
- Firefighters
- Police officers

This issue of the *Supplemental Research Bulletin* is based on literature and scientific publications found through the National Center for Biotechnology Information and U.S. National Library of Medicine (PubMed). All research cited in this issue was published in English, and most was conducted in the United States (with a few exceptions where investigations in other countries proved useful to the topic). We did not include literature on trauma related to military service, as the challenges and types of danger and training are different. We also did not include literature on nontraditional first responders because the literature was not robust.

## **BACKGROUND—FIRST RESPONDERS' BEHAVIORAL HEALTH**

Protecting the population's health is a vital part of preserving national security and the continuity of critical national functions. However, public health and public safety workers experience a broad range of health and mental health consequences as a result of work-related exposures to natural or human-caused disasters (Benedek et al., 2007). First responders involved in these occupations are exposed to hazards inherent in the nature of their jobs (Plat, Frings-Dresen, & Sluiter, 2011). Examples include exposure (direct or indirect) to death, grief, injury, pain, or loss as well as direct exposure to threats to personal safety, long hours of work, frequent shifts and longer shift hours, poor sleep, physical hardships, and other negative experiences (Botha, Gwin, & Purpora, 2015; Heavey et al., 2015; Marmar et al., 2006; Patterson et al., 2012; Quevillon, Gray, Erickson, Gonzalez, & Jacobs, 2016).

Many natural or technological disasters produce overwhelming disruption to the social, familial, economic, and physical structure of the affected community (Mitchell, 2011; Miller, 2011). Disaster response is usually made up of a wide array of professional and volunteer organizations with varying levels of disaster experience. Collateral damage, or the intra- and interpersonal disturbances that arise from disaster work, can be observed among both professional and volunteer first responders (Mitchell, 2011).

### **Behavioral Health Conditions in Emergency Medical Services Personnel**

One of the core risk factors for first responders is the pace of their work. First responders are always on the front line facing highly stressful and risky calls. This tempo can lead to an inability to integrate work experiences. For instance, according to a study, 69 percent of EMS professionals have never had enough time to recover between traumatic events (Bentley et al., 2013). As a result, depression, stress and posttraumatic stress symptoms, suicidal ideation, and a host of other functional and relational conditions have been reported.

#### **DEPRESSION**

Depression is commonly reported in first responders, and rates of depression as well as severity vary across studies. For instance, in a case-control study of certified EMS professionals, depression was reported in 6.8 percent, with mild depression the most common type (3.5 percent) (Bentley et al., 2013). Among medical team workers responding to the great East Japan earthquake (2011), 21.4 percent were diagnosed with clinical depression (Garbern, Ebbeling, & Bartels, 2016). In a study in Germany, 3.1 percent of emergency physicians had clinical depression (Pajonk, Cransac, Muller, Teichmann, & Meyer, 2012).

#### **STRESS AND POSTTRAUMATIC STRESS DISORDER/SYMPTOMS**

Stress symptoms and posttraumatic stress symptoms in EMS personnel have been reported in a number of studies. For instance, in a review of published literature, EMS/paramedics reported higher peritraumatic dissociation at the time of the Loma Prieta Bay Area earthquake (1989) compared with the police (Marmar et al., 2006). In a study in Germany, 16.8 percent of emergency physicians had probable PTSD (Pajonk, Cransac, Muller, Teichmann, & Meyer, 2012). In a case-control study among certified EMS professionals, stress was reported in 5.9 percent, with mild stress the most common type (3.1 percent) (Bentley et al., 2013).

## **SUICIDE/SUICIDE IDEATION**

Suicidal ideation has been reported in first responders in a number of studies, but there is still a question as to the rates given the way data has been collected in samples of convenience versus the use of random samples. However, existing research suggests that EMS personnel may be more likely than the general population to think about and attempt suicide. For instance, in a literature review, suicidal thoughts and ideations in EMS/paramedics were evaluated as compared to the general population (Stanley, Hom, & Joiner, 2016). Based on findings from a study included in the review—only two studies of suicidality in EMS personnel met the criteria for the review—authors found a lifetime prevalence rate of 28 percent for feeling life is not worth living, 10.4 percent for serious suicidal ideation, and 3.1 percent for a past suicide attempt (Stanley, Hom, & Joiner, 2016). In another study in the same review, it was found that having both EMS and firefighting duties was associated with a sixfold increase in the likelihood of reporting a suicide attempt as compared to firefighting alone (Stanley et al., 2016). In a separate study, Abbot et al. reported that 37 percent of fire and EMS professionals have contemplated suicide, nearly 10 times the rate of American adults (2015). In addition, 6.6 percent of fire and EMS professionals reported having attempted suicide as compared with just 0.5 percent of civilians. More work needs to be done with better controlled studies, but the extant data is suggestive of higher rates within first responder populations.

## **Behavioral Health Conditions in Firefighters**

The nature of the work of firefighters, including repeated exposure to painful and provocative experiences and erratic sleep schedules, can pose significant risk to firefighters' mental health (Stanley, Boffa, Hom, Kimbrel, & Joiner, 2017). To add to that risk, firefighters face many barriers to seeking help, including stigma and the cost of treatment. For instance, according to a study by Stanley et al., volunteer firefighters have greater structural barriers to use of mental health services (including cost, inadequate transportation, difficulty getting time off from work, and availability of resources) than career firefighters and the general population (2017).

## **DEPRESSION**

As with EMS professionals, depression is commonly reported in firefighters, and studies have found various rates and severity of depression. One study found that volunteer firefighters reported markedly elevated levels of depression as compared to career firefighters (with an odds ratio for volunteer firefighters of 16.85 and for career firefighters of 13.06) (Stanley et al., 2017). The researchers observed that greater structural barriers to mental health care (such as cost and availability of resources) may explain the increased levels of depression observed among volunteer firefighters. Additionally, competing demands for volunteer firefighters (having a separate job) create stress vulnerabilities that contribute to the development or exacerbation of behavioral health conditions. Organizational factors (such as more systematic and stringent recruitment and screening within career departments relative to volunteer departments) may contribute to the difference in the levels of behavioral health symptoms (Stanley et al., 2017). In another study, 22.2 percent of female career firefighters were at risk of depression, while 38.5 percent of the female volunteer firefighters were at risk of depression (Haddock, Poston, Jahnke, & Jitnarin, 2017). According to Jahnke et al., this could be attributed to social pressures associated with working in a male-dominated profession (2012). Additionally, although women firefighters reported similar

job stressors to men, they also reported experiencing significantly more occupational discrimination than their male peers.

### **STRESS AND POSTTRAUMATIC STRESS DISORDER/SYMPTOMS**

Stress and posttraumatic stress symptoms have been reported in a number of studies. For instance, according to a literature review by Dowdall-Thomae, Gilkey, Larson, and Arend-Hicks, over 50 percent of firefighter deaths are due to stress and exhaustion (2012). Most of the firefighters in the United States are volunteers (about 69 percent). A study investigating the suicidality of firefighters, while being flawed because it was a sample of convenience and therefore potentially attracted individuals who had more often been suicidal, has reported markedly elevated levels of posttraumatic stress in volunteer firefighters, while career firefighters reported higher levels of PTSD (Stanley et al., 2017).

### **SUBSTANCE USE**

Stanley et al. found that career firefighters reported higher levels of problematic alcohol use and PTSD as compared to the volunteer firefighters, while the volunteers reported higher levels of depression and suicide attempts and ideations (Stanley et al., 2017). Recent (past month) heavy or binge alcohol drinking was reported in approximately 50 percent of male firefighters, and driving while intoxicated was reported in 9 percent of male firefighters (Haddock, Poston, Jahnke, & Jitnarin, 2017). Female firefighters account for 5.1 percent of the total number of firefighters (Jahnke et al., 2012). In a study evaluating the health of this population, 83.3 percent of the professional female firefighters had tried smoking, and 22.2 percent were current smokers in comparison to 17.9 percent of women in the general population (Jahnke et al., 2012). Additionally, 88.9 percent of them had drunk alcohol in the past month. Nearly 54 percent of the volunteer female firefighters had tried smoking, and 15.4 percent were current smokers (Jahnke et al., 2012). In another study targeting female firefighters, more than 60.5 percent drank more than the *2015–2020 Dietary Guidelines for Americans* recommended, binge drinking was reported in 39.5 percent in this population as compared to 12–15 percent of the females in the general population, and 4.3 percent reported driving while intoxicated (Haddock et al., 2017).

### **SUICIDE/SUICIDE IDEATION**

Suicidal ideation has been reported in firefighters at higher rates than in the general population—but, as noted, research in this area has often used convenience samples and may not be entirely reliable and valid. Currently available studies do suggest that firefighters may be more likely to think about and attempt suicide than people in the United States as a whole. In a convenience sample study related to suicide attempts and ideations, firefighters were reported to have higher attempt and ideation rates than the general population (Stanley et al., 2016). In 1,027 current and retired U.S. firefighters, the prevalence estimates of suicidal ideation, plans, and attempts were 46.8 percent, 19.2 percent, and 15.5 percent, respectively, as compared to lifetime rates of ideations, plans, and attempts of 13.5 percent, 3.9 percent, and 4.6 percent among the general U.S. population (Stanley, Hom, Hagan, & Joiner, 2015). In a national sample of firefighters, current posttraumatic stress symptoms were found to be associated with 5.2 percent higher odds of attempting suicide during their firefighting careers (Boffa et al., 2017).

## **Behavioral Health Conditions in Police Officers**

Police officers are at increased risk of negative mental health consequences due to the dangerous nature of their jobs as well as the greater likelihood that they experience critical incidents, environmental hazards, and traumatic events (Heavey et al., 2015). In a study, about three-fourths of the surveyed officers reported having experienced a traumatic event, but less than half of them had told their agency about it. Additionally, about half of the officers reported personally knowing one or more law enforcement officers who changed after experiencing a traumatic event, and about half reported knowing an officer in their agency or another agency who had committed suicide (Fleischmann et al., 2016).

### **DEPRESSION**

Depression has been reported in police officers. A study following police officers after the 9/11 attacks found a 24.7 percent prevalence of depression, and a 47.7 percent prevalence of both depression and anxiety (Bowler et al., 2016).

### **STRESS AND POSTTRAUMATIC STRESS DISORDER/SYMPTOMS**

In a study following Hurricane Katrina, PTSD was reported in between 7 and 19 percent of a sample of police officers (McCanlies, Mnatsakanova, Andrew, Burchfiel, & Violanti, 2014). After the World Trade Center attack, PTSD was reported in 11 percent of police responders, PTSD increased as the level of social support decreased, and the PTSD prevalence was relatively high among those unable to work because of health (34.8 percent) and those with unmet mental health needs (50.7 percent). Additionally, the prevalence was higher in women (15.5 percent) than in men (10.3 percent) (Cone et al., 2015). As discussed earlier, this difference may be attributable to social pressures associated with working in a male-dominated profession as well as to women's experiencing more occupational discrimination than their male peers (Jahnke et al., 2012). In another study, the prevalence of probable PTSD in police officers following the 9/11 attack was 12.9 percent (Bowler et al., 2016).

### **SUBSTANCE USE**

In a study investigating alcohol use in police officers following Hurricane Katrina, there was a significant association between involvement in the hurricane relief efforts and hazardous alcohol drinking (Heavey et al., 2015). In another study, the average number of alcoholic drinks after Hurricane Katrina increased from 2 to 7 drinks per day (McCanlies et al., 2014).

### **SUICIDE/SUICIDE IDEATION**

Suicide attempts and ideations were reported in multiple studies. In a literature review, the lifetime prevalence of suicidal ideation in police officers was 25 percent in female officers and 23.1 percent in male officers (Stanley et al., 2016). Suicide attempt rates ranged from 0.7 to 55 percent among studies. In a national analysis of law-enforcement suicide, proportionate mortality ratios (PMRs), or the ratio of the death count for an occupation to the expected number of deaths in all occupations combined, were significantly high for all races and sexes combined (all law enforcement-PMR = 169 percent) (U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, 2016; Violanti, Robinson, & Shen, 2013). Another study

linked strain on the job to suicidal ideation, as well as depression and anger. Officers with burnout showed significantly greater suicide risk, with a 117 percent greater likelihood of suicidal thoughts for officers who reported burnout at work (Bishopp & Boots, 2014).

## **RISK AND PROTECTIVE FACTORS FOR BEHAVIORAL HEALTH IN FIRST RESPONDERS**

Many studies have assessed the risk and protective factors for behavioral health issues among first responders. In general, these factors can be categorized based on time relative to the disaster—before, during, or after the event occurs.

### **Pre-disaster/Event Risk and Protective Factors**

Mitchell suggested that collateral behavioral health damage in first responders may owe to being unfit mentally or physically prior to a disaster to perform relief work, as well as inadequate training, unrealistic expectations from leadership, and arbitrary decisions or shows of favoritism (Mitchell, 2011). Another team of investigators found that life events, including personal trauma and loss prior to the disaster, were associated with increased risk of post-disaster mental health issues (Brooks et al., 2016).

Among protective factors, according to one literature review, are occupational factors such as longer duration of employment, which acted as protective against PTSD and burnout, whereas lower job satisfaction was associated with higher risk (Brooks, Dunn, Amlot, Greenberg, & Rubin, 2016). Specialized training, elevated level of professional mastery, and assurance in personal and team capabilities acted as protective factors and were associated with reduced stress (Brooks et al., 2015; Brooks et al., 2016).

Resilience, or “the ability to successfully adapt to stressors, maintaining psychological well-being in the face of adversity” acts as a protective factor against many mental and behavioral health issues (Haglund et al., 2007). In a cohort of police officers followed after Hurricane Katrina, resilience, satisfaction with life, and gratitude helped mitigate symptoms of PTSD (McCanlies et al., 2014). In a study about emergency service retirees, those who reported higher levels of resilience had better quality of life scores than those with low resilience (Bracken-Scally et al., 2014). Some people have higher resilience, but others can be trained to increase their resiliency and hence improve their odds for better quality of life as well as reducing their risk for developing conditions such as PTSD or depression (Hesketh et al., 2015).

### **Risk and Protective Factors During the Disaster/Event**

Risk factors during the event for first responders include exposure to the disaster or event itself. For instance, in a literature review reporting on factors determining psychological outcomes (including stress, well-being, mental disorders, resilience, and personal growth) in humanitarian aid workers or similar professionals deployed to help with the aftermath of a disaster, the proximity to the epicenter of the disaster was associated with higher levels of mental health issues (Brooks et al., 2016). Heavey et al. found that heavy disaster exposure following Hurricane Katrina was associated with hazardous alcohol consumption in police officers (2015). Brooks et al. found that long work hours in unfamiliar or demanding circumstances and not taking a day off each week led to fatigue, mental distress, job dissatisfaction, and subjective health complaints (2016). Dealing with serious injuries or bodies of the dead resulted in higher



probability of developing PTSD, depression, alcohol problems, anxiety, stress, and fatigue symptoms (Brooks et al., 2016).

In Brooks et al.'s study, time on site was also associated with development of mental health problems, and first responders who stayed longer at the scene reported higher levels of mental health issues, as did early arrivals (both reporting higher levels of PTSD and depression) (2016). Identification with survivors was associated with higher levels of obsessive-compulsive symptoms and PTSD, and becoming emotionally involved resulted in secondary or vicarious victimization, or having symptoms similar to survivors because of indirect traumatic exposure through close interaction with them (Brooks et al., 2016; Brooks et al., 2015).

Job duties or qualities during the disaster or event were associated with an elevated risk of mental health issues. Not having enough job-related information; adding extra, unfamiliar, or conflicting duties or too many people to supervise; direct survivor or family contacts; longer assignments; longer time working with children; working with clients who discussed morbid materials; excessive exposure to gory sights and sounds and environmental hazards; and working as mental health workers were all associated with increased levels of stress (Brooks et al., 2016; Mitchell, 2011). Poor leadership and lack of interagency agreement were additional stressors during the disaster period (Brooks et al., 2015).

Low perceived safety was associated with increased levels of depression, anxiety, and other psychiatric symptoms (Brooks et al., 2016). In addition, being harmed or seriously injured or having a severe trauma was associated with an increase of as much as 25.6 times the probability of developing PTSD relative to those who had no similar experiences (Brooks et al., 2016).

Among protective factors during a disaster for first responders, social support appears to be important, particularly organizational support, in terms of good relationships with leaders and coworkers. Brooks et al. found that supportive, approachable leaders and camaraderie among responders helped with first responders' psychological well-being (2016, 2015). Social support was associated with reduced risk of behavioral health problems, while poor relationships with coworkers and dissatisfaction with supervisors predicted PTSD (Brooks et al., 2016; Brooks et al., 2015).

### **Post-disaster/Event Risk and Protective Factors**

Having one's personal life affected by a disaster was associated with higher levels of mental health issues in first responders, and post-disaster life events (such as a divorce or the breakup of a relationship) were associated with distress, depression, and PTSD (Brooks et al., 2016; Garbern et al., 2016). Watching television for more than 4 hours per day 1 month after the disaster was predictive of PTSD symptoms and emotional distress in rescue workers. Additionally, volunteer firefighters with chronic PTSD were significantly more distressed by television reminders of the disaster (Brooks et al., 2016; Brooks et al., 2015). Publicity and media coverage of the disaster can be a trigger of disaster recall, and criticism from the media is often taken personally by responders (Brooks et al., 2015).

Neurotic personality and avoidance coping, or the deliberate avoidance of traumatic thoughts, was associated with greater psychological stress and PTSD (Brooks et al., 2016; Garbern et al., 2016). Also, not receiving acknowledgement or thanks as a disaster relief worker was associated with mental health problems (Mitchell, 2011).

A review study found that professional mental health help (such as critical incident stress debriefing, or CISD, and/or psychological counseling) was helpful to disaster responders in the immediate phase following an incident (Brooks et al., 2016). However, in a study with firefighters, while some reported positive experiences with CISD, others found the intervention intrusive and reported feeling more distressed after it. They reported experiencing benefits from peer support and using the crew for bonding after negative incidents (Jahnke et al., 2014).

## **INTERVENTIONS TO REDUCE BEHAVIORAL HEALTH RISKS FOR FIRST RESPONDERS**

### **General and Institutional Interventions**

Some researchers have recommended preparedness and assessing the suitability of new staff for the first responder role before they begin work, in order to ensure that their personality and mental health status are such that they can handle the stress of work as a first responder (Brooks et al., 2016). They have also emphasized the importance of being prepared for the potential psychological impact of the job, as well as of mental health trainings and briefings (Brooks et al., 2016). A number of disaster preparedness and response actions have been suggested by Mitchell (2011), Brooks and colleagues (2015, 2016), and Quevillon and colleagues (2016), as described in the sections that follow.

### **PREPAREDNESS**

Leaders and managers can take these steps to support the behavioral health of their teams:

- Plan in advance of disaster mobilization, and develop clear written protocols and strategic plans (Mitchell, 2011). This is important for the behavioral health of first responders because the feeling of being well-prepared and the sense of doing a job well serve as protective factors against behavioral health issues and conditions (Quevillon et al., 2016).
- Include all the team members in the development of the protocol, and ensure they are all adequately trained (Mitchell, 2011). Teamwork and sense of community serve as major protective factors for disaster workers (Quevillon et al., 2016). High sense of team accomplishment and assurance of personal and team capabilities were associated with reduced stress levels (Brooks et al., 2016).
- Gather as much information as possible about the disaster to reduce the dangers from disaster exposure (Mitchell, 2011). Perceived dangers to well-being and safety were linked to anxiety, depression, and general psychiatric syndrome (Brooks et al., 2016).
- Develop a clearly defined leadership cadre, establish sub-teams, and determine factors that could prevent some of the team members from participating (Mitchell, 2011). Organizations should put the welfare of their team at the forefront and move toward a more supportive attitude (Quevillon et al., 2016).
- Model the structure of the team on the Incident Command System (Mitchell, 2011).
- Ask potential responders before the disaster to be aware of the stress they are dealing with and to assess whether they have the capacity to deal with the additional stress the disaster situation will

involve. Recognize good work during the disaster, empower staff, and assign responsibility to staff to have a protective effect (Quevillon et al., 2016).

First responders can take these steps to protect their own behavioral health before deployment:

- Be aware of personal vulnerability and signs of burnout and compassion fatigue, or profound psychological pain observed in therapists working for long periods with people who have been directly traumatized (Quevillon et al., 2016; Atkins & Burnett, 2016).
- Make plans prior to the disaster for self-care during the disaster response and plan on taking breaks, sleeping adequately, and eating nutritious meals and exercising during relief work (Quevillon et al., 2016).

## **RESPONSE**

During and after response, leaders and managers can act as follows to support their teams:

- Develop clear lines of communication (Mitchell, 2011).
- Assess the welfare of the team, resolve any conflicts between team members, and rotate assignments (Mitchell, 2011). The role of leadership is crucial in maintaining the mental health of their team (Quevillon et al., 2016).
- Encourage workers to pair up in a “buddy system” to support each other and monitor each other’s stress reactions, and provide support to them if needed in doing so (Quevillon et al., 2016).
- Provide mental health and resilience training, and promote counseling and debriefing following stressful situations (Brooks et al., 2016; Quevillon et al., 2016).
- Provide team group sessions upon return to home base, as well as staff support services (Mitchell, 2011). No further assignments should be given before workers have had sufficient time to recover; relief workers need some time to adjust, ease back into personal life, and take some time before returning to work (Quevillon et al., 2016).

## **Public Health Intervention Models**

Behavioral health interventions to increase resilience and reduce the risk of behavioral health problems in first responders have been tested in a number of studies. In an intervention study for public health personnel without mental health training, a training program in Psychological First Aid increased self-efficacy and confidence in personal resiliency (Everly, Lee McCabe, Semon, Thompson, & Links, 2014). Special forces police were eager to participate in the resilience promotion training program in another study, and they believed their stress reaction was reduced by the program and that the reduction could improve their performance in the line of duty. They also reported that they felt that resilience training should be provided to special force police officers and that they would recommend the program for their peers (Andersen et al., 2015). In an Australian study, firefighters received 4 hours of resilience training, and while the intervention was unable to show evidence of reducing PTSD, the follow-up period was limited, which might have influenced the results (Skeffington, Rees, Mazzucchelli, & Kane, 2016).

In a literature review study that investigated 25 burnout intervention studies, about 80 percent of all studies led to positive effects on burnout, and about 82 percent of all person-directed interventions led to a significant reduction in burnout or positive changes in its risk factors, lasting up to 6 months after the

intervention while a combination of both person and organization-directed interventions had longer lasting positive effects of 12 months and over. However, the study found that the positive effects fade with time and they suggested a refresher course to enhance the effect of the intervention (Awa et al., 2010).

In a study to evaluate a peer support training program in six public health agencies, participants demonstrated increased knowledge concerning their ability to identify stress injuries, initiate and maintain conversations, motivate peers to follow through with help-seeking behavior, and provide acute stress management (Marks et al., 2017). Peer-support programs have emerged as standard practice for supporting staff in many organizations in which employees are at high risk of experiencing potentially traumatic events, with the rationale behind them often including the goals of meeting the legal and moral duty to care for employees, as well as addressing multiple barriers to standard care including stigma, lack of time, poor access to providers, lack of trust, and fear of job repercussions (Creamer et al., 2012). These programs amount to a cultural shift in professions in which people typically have not talked much about their feelings about their work, particularly their distress.

## CONCLUSION

First responders are always at the forefront of each incident or disaster, and they ensure the safety and well-being of the population. They are, however, at great danger of being exposed to potentially traumatic situations that pose risk of harm to them or the people under their care. This constitutes a great risk for the behavioral health of first responders, putting them at risk for stress, PTSD, depression, substance use, and suicide ideation and attempts. Both natural and technological disasters were found to be associated with increased risk of these conditions, as were factors such as resiliency, trust in self and team, duration on the disaster scene, individual coping style, and post-disaster mental health support.

To improve the behavioral health of the first responders, a cooperative effort is needed between organizational leadership and coworkers to establish a work environment that provides adequate training and ensures the resiliency and health of first responders by protecting them from overwork and excessive stress and supporting them in seeking help when needed. First responders carry the weight of their own safety and well-being as well as those they serve, and thus making programmatic changes to educate them, offer them support, and protect their health and well-being would reduce the risk of burnout, fatigue, or other behavioral health issues associated with being overworked, uncertain, or stressed. Behavioral and public health agencies can help prevent or alleviate behavioral health issues in first responders through preventive training on resiliency and behavioral health prior to disasters or other events, interventions to address burnout, and peer support programs. As noted, such efforts and programs are a cultural shift in fields in which professionals sometimes have coped with disastrous and traumatic experiences on the job by trying to disregard their reactions or using other maladaptive techniques such as substance misuse. As more first responders discover the resilience they can access through others, and particularly their peers, they become better able to maintain their own behavioral health while addressing the myriad challenges of disaster response.

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