Assessing Firefighter Mental Health at the Copley Fire Department

Copley Township Fire Department

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Certification Statement

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I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used language, ideas, expressions, or writings of another.

Signed: 

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Abstract

The problem is the Copley Fire Department does not know the extent to which employees experience mental health issues and lacks a system to identify and treat them. The purpose of this research was to determine the extent to which the Copley Fire Department employees experience mental health issues and determine how to identify and treat them. A descriptive research method was used to determine the extent of mental health problems at the Copley Fire Department, how these issues compare to the larger fire service and to describe any difference between needed and available resources.

Personal interviews and a literature search explained the difficulties addressing mental health and guided the choice of a psychological assessment instrument to measure mental illness at the Copley Fire Department. The results showed 48.6% of Copley Firefighters were in psychological distress at a minimal level, 37.1% were in mild distress, 8.6% were moderate, and 5.7% were severe. Compared to other studies, psychological distress levels at the Copley Fire Department are higher in some areas and lower in others. A description of existing behavioral health resources at the Copley Fire Department was also compared to needed resources.

A clear comparison to previous studies was difficult due to limited previous research and the lack of a consistent standard for measuring mental illness the fire service. Existing behavioral health resources at the Copley Fire Department are limited to employee self-referral and employer facilitated referral. The behavioral health resources needed at the Copley Fire Department should be enhanced with a formal program following the National Fallen Firefighters Foundation's Everyone Goes Home Initiative 13 and the National Fire Protection Association's Standard 1500, Occupational Safety and Health Programs.

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Introduction

The Copley Fire Department (Copley Fire) is a combination department providing advanced life support, fire suppression, and rescue services to Copley Township and surrounding communities through mutual aid agreements. Copley Township has a population of approximately 18,000 people and consists of 20.4 square miles of varying geography. Statistics from 2015 show a total of 2,454 calls for service and 2,981documented training hours. Copley Fire operates two fire stations and employs 56 personnel comprised of 18 full-time and 38 part-time staff. The full-time staff consists of a Chief, Assistant Chief, Operations Captain, four Lieutenants, a Chief Fire Inspector and twelve firefighter paramedics. All fire department personnel operate as firefighters except for two paramedics who were hired at a time when Emergency Medical Services (EMS) only status was available. All firefighters are paramedics except for two Emergency Medical Technicians who were hired when prerequisites for employment were different. For the purpose of this research, all personnel mentioned above will be referred to as firefighters. Copley Fire currently requires new employees to possess a valid State of Ohio driver's license as well as current Paramedic and Firefighter II certifications. Additionally, all Paramedics must pass a yearly EMS protocol exam and maintain certifications in Basic Life Support, Advanced Life Support, Pediatric Advanced Life Support, and International Trauma Life Support. Other ongoing requirements to maintain employment include but are not limited to regular EMS, Fire, and Rescue training.

Copley Fire shares a common challenge with many other organizations; they experience employee behavior issues affecting performance and by extension have an adverse impact on the organization. Some of these behavior issues have been associated with mental illnesses such as

depression, anxiety, and Post Traumatic Stress Disorder (PTSD). These behavioral issues manifested as attendance problems, workplace interpersonal conflicts, policy violations, diminished productivity and legal problems which developed outside of the workplace.

Pre-employment psychological testing has been used at Copley Fire for over thirty years. However, no attention was given to periodic psychological assessment or evaluation of behavioral health resources.

The problem is Copley Fire does not know the extent to which employees experience mental health issues and lacks a system to identify and treat them. The purpose of this research is to determine the extent to which Copley Fire employees experience mental health issues and determine how to identify and treat them. Using a descriptive research method this research was intended to answer the following questions. What is the extent to which mental health issues exist at Copley Fire? How do these issues compare with the larger fire service? What resources are available to identify and address firefighter mental health issues at Copley Fire? What resources are needed to identify and address firefighter mental health issues at Copley Fire?

Background and Significance

Copley Fire assesses prospective new employees with written tests, polygraphs as well as physical and psychological screenings. However, there is no ongoing monitoring or assessments done in the area of behavioral health. According to Michael Benson Fire Chief of Copley Fire, employee performance problems such as interpersonal conflict, absenteeism, policy violations, and customer service complaints have been anecdotally associated with issues of mental illness. However, it is difficult to gather complete information in these situations due to the Health Information Portability Privacy Act (HIPPA) restrictions and the simple logistics of proper follow-up. An employee may be referred for behavioral health evaluation in a compulsory way

only under specific circumstances. These situations are dictated by the Copley Township Personnel Policy Manual and the current Collective Bargaining Agreement (CBA) (*Agreement of Copley Firefighters*, n.d.; *Copley policy manual*, 2006). The repercussions of these issues have had a negative impact on staffing, overtime pay, crew morale and operational readiness (M. Benson, personal communication, July 6, 2016).

Chief Benson further explained six fire department employees had experienced mental health problems associated with work performance issues. The majority displayed concomitant work absences, conflicts, and marital discord. Two sought treatment for depression; two more sought treatment for PTSD; one accepted counseling instead of discipline and one was hospitalized for suicidal threats after a string of arrests related to stalking and harassment (M. Benson, personal communication, July 6, 2016).

In August of 2011 members of Copley Fire responded to a shooting where eight people were killed including an 11-year-old child. Even thought Copley Fire did not have a formal program in place to address the difficulties firefighters would face in the wake of the shooting, firefighters were included in defusing and debriefing meetings and offered follow-up care through the Township's Employee Assistance Program (EAP). However, it is unknown if there was any relationship between the trauma of this event and employee performance problems.

Currently, the pre-employment psychological testing done for Copley Fire is provided by Western Reserve Psychological Associates (WRPA). Dr. Virginia Clark Psychologist and Director at WRPA explained potential new employees are assessed using multiple instruments made up of hundreds of items. Tests include but are not limited to the Minnesota Multiphasic Personality Inventory (MMPI), Beck Anxiety Inventory (BAI), Beck Depression Inventory (BDI), State-Trait Anger Expression Inventory (STAXI), and the Gilford Zimmerman

Temperament Survey (GZTS). Also; WRPA uses individual and group dynamics to assess an individual's fitness for employment at Copley Fire. This process takes hours over a multi-day process (V. Clark, personal communication, November 18, 2016).

The pre-employment screening is used, at least in part, to screen out individuals who have, or may likely, develop behavioral health problems. Once Copley Fire employs a firefighter, there are no periodic assessments of mental health. After the initial hire, efforts in this area are reactionary. There are two primary ways a Copley Fire employee may access behavioral health assessment or treatment: self-referrals or employer facilitated referrals. The latter is highly variable as to process. Employer facilitated referrals may occur as the result of informal employee counseling, formal employee counseling, or employee discipline. Referrals to mental health resources at Copley Fire use either the existing EAP or an outside provider of the employee's preference. In 2015 the Copley Township EAP provided referrals twice each for anxiety, depression and relationship/divorce (*Copley 2015 utilization report*, 2016). It is important to note the utilization report includes all departments and cannot specify fire department specific utilization.

Prevention efforts for mental illness at Copley Fire are very limited. If a supervisor recognizes a potentially traumatic experience for any fire department personnel, there is an offer of a referral. In some cases, a member of the Summit County Safety Forces Chaplaincy Center pays a formal or informal visit to the fire department to offer help. This is the only resource at Copley Fire which could be viewed as preventative in the area behavioral health.

Examining the subject of behavioral health at Copley Fire could help alleviate employee performance problems, decrease absenteeism, lower overtime costs and improve the quality of life for firefighters at Copley Fire. It is also directly linked to the Executive Development class

because behavioral health problems interfere with the team dynamics necessary for Copley Fire to respond in an efficient and effective manner. To lead and manage effectively, a leader must serve and care for their members with the same, or greater, level of commitment they give to the community as a whole. This research will be applied to Copley Fire as part of a continued effort to improve team dynamics, efficiency and effectiveness. The behavioral health of Copley Fire is also important from a human or visceral perspective because a leader should promote the overall health and success of everyone in the department. Behavioral health is also critical for safe, efficient and effective operations while executing the department mission. In a similar way, this issue is relevant and timely for the fire service as a whole because mental illness has an impact on operational readiness and the ability to mitigate all hazards. A proactive approach to the issue of firefighter behavioral health is consistent with the United States Fire Administration's strategic goal to "enhance the Fire and Emergency Services' Capability for Response to and Recovery From All Hazards" (U.S. Fire Administration [USFA], n.d., p. 1). The author hopes to identify methods to identify when mental health issues exist and recommend interventions to treat as well as prevent them.

Literature Review

This research intended to describe the significance of mental illness in Copley Fire, how it compares to the larger fire service and how best to address any issues identified. This required an understanding of mental illness in the context of the general population as well as the fire service. First, we needed to define mental illness. According to the Centers for Disease Control and Prevention (CDC):

> A mental illness is a condition that affects a person's thinking, feeling or mood. Such conditions may affect someone's ability to relate to others and function each day. Each

person will have different experiences, even individuals with the same diagnosis (Mental health conditions, n.d.).

Sado et al. (2013) cited World Health Organization (WHO) estimates of 450 million people worldwide who have mental illness based on a 2010 survey. They suggested this imposes a significant burden on society. A 2016 WHO report concluded resources dedicated to treating mental illness is inadequate to meet the need worldwide. In low- and middle-income countries, between 76% and 85% of people with mental disorders receive no treatment. High-income countries fare better but still leave between 35% and 50% without the benefit of any treatment (World Health Organization [WHO], 2016).

The National Alliance on Mental Illness (NAMI) reports in Mental Health Basics (n.d.) depression affects more than 26% of the U.S. adult population and is the most common type of mental illness. The report continues, from 2005-2006 one out of twenty Americans twelve years of age and older reported being depressed. The estimated lifetime prevalence of anxiety disorders is 15% and is higher in developing countries. Lifetime prevalence of Bipolar Disorders is lower at 4%. All three disorders are more common in women than men (Mental Health Basics, n.d.). Suicide represents an estimated loss of $51 billion in combined medical and work costs and was the tenth leading cause of death for all ages in the United States for 2013 (Suicide: Facts at a Glance, n.d.). A six-year study of Medicare recipients showed those with no history of a Major Depressive Disorder (MDD) had mean six-year medical costs of $40,670, compared to $87,445 for those with a history of MDD (Alexandre, Hwang, Roth, Gallo, & Eaton, 2016).

The economic aspects of mental illness are quantified at various levels. Insel, Collins, and Hyman (2015) suggest the global direct cost of mental illness is $2.5 trillion constant dollars per year and will increase to $6 trillion dollars by 2030. They go on to claim mental disorders

are responsible for the largest source of disability for people ages of 15 to 44. Additionally, just having a mental illness increases the likelihood of diabetes, heart disease, pulmonary diseases, and HIV. Finally, the social impact manifests itself as an increased risk of homelessness, poverty, and institutionalization. "In reality, in countries of all levels of wealth and development, mental illness affects almost every aspect of society and the economy" (Insel et al., 2015, p. 2).

Malik, Khan, and Zaman (2015) reported on a 2005 study showing mood disorders accounted for 52% of hospital admissions and 58% of ambulatory healthcare costs in Pakistan. The burden to the Pakistan economy is estimated to be $2.8 billion (USD) accounting for 2.5% of the gross domestic product of the country in that year (Malik et al., 2015). In Japan, the direct cost of health care and social services related to anxiety disorders in 2008 was estimated to be $426 million (USD). The same year the indirect costs for morbidity(absenteeism, presenteeism, and unemployment costs) and mortality were $20.0 billion (USD) (Sado et al., 2013). In a 2002-2004 study Lund, Myer, Stein, Williams, and Fisher (2013) examined the lost income of adult South Africans with severe depression or anxiety disorders. This group was associated with a significant reduction in earnings over the previous 12 months among employed and unemployed adults resulting in an estimated lost income of $3.6 billion (Lund et al., 2013).

From a public health perspective Insel et al. (2015) claims the problem of mental illness is not well appreciated by policymakers and public health officials. They suggested mental illness does not present itself in the same way as most illness, and disease does, but it is still a disease affecting the brain no different than any other diseased part of the body. Insel et al. (2015) also argue the treatment of mental illness has not received the funding commensurate with the impact it has on the economy. They point to the degradation of the U.S. psychiatric

hospital system which shifted the burden to other programs not designed to treat the mentally ill. They also argue this had an adverse impact on social and welfare programs, unemployment, jails, and prisons. Americans with serious mental illness are ten times more likely to be imprisoned than be in hospitals; they represent 20% of the those incarcerated in the U.S. and 30% of the chronically homeless (Insel et al., 2015).

The impact and scope of mental illness are well documented as it relates to the general population. The societal costs run the gamut from dollars and cents to the actual human suffering experienced by those affected. Despite the documentation, the research points to a lack of attention and funding for mental illness from the local to the international level. Finding current academic research on this subject was not difficult. However, the same could not be said for the subject of firefighter mental health.

Kimbrel et al. (2011) contend firefighters are more susceptible to mental illness than the general population. They claim the increased risk can be attributed to the physical and psychological stress which comes with responding to fires, medical emergencies, traffic accidents, and natural disasters. Kimbrel et al. (2011) further explain long shifts, lack of sleep and workplace conflicts add to an already inherently stressful profession. They recognize the reports of elevated stress from firefighters and conclude it should not be surprising firefighters are at increased risk for substance abuse, depression, Post Traumatic Stress Disorder (PTSD), and occupational burnout.

According to Jahnke, Carlos Poston, Haddock, and Murphy (2016) firefighters may experience *secondary trauma*, *vicarious trauma* or *compassion fatigue*, even when they are not literal victims. Jahnke et al. (2016) claimed the repeated exposure to trauma (RET) can have a cumulative effect resulting in what they refer to as post-traumatic stress symptomatology

(PTSS). They explain PTSS is not a diagnosable disorder like PTSD. However, it is a recognized and related group of symptoms without the diagnosis. PTSS is significantly more common than PTSD (Jahnke et al., 2016).

Louise Bradley, President, and CEO of the Mental Health Commission of Canada recognizes PTSD as a serious problem among first-responders. However, she emphasizes depression, somatic and psychosomatic complaints, chronic fatigue and issues with alcohol use are significant problems afflicting first-responders as well. Bradley (2015) suggests it should come as no surprise the suicide rate for first responders is approximately 30% higher, and marital problems are twice as prevalent than comparison groups.

Piazza-Gardner et al. (2014) studied a group of 160 career firefighters and found a majority consumed alcohol and approximately 34% engaged in binge drinking within the past month. They noted these drinking levels exceed the general population including college students. Swendsen et al. (2010) published a national comorbidity study suggesting mental illness is associated with an increased risk of substance abuse. They concluded there is evidence primary mental illness can have predictive value for future substance abuse. Swendsen et al. (2010) claim there are multiple, and complex factors at work in the relationship between mental illness and substance abuse, however, one causal model of association involves self-medicating as a coping mechanism. This model may represent an opportunity for early intervention in behavioral health problems to decrease the risk of later substance abuse (Swendsen et al., 2010).

The literature commonly associates firefighter mental health with the potential for suicide. According to Jeff Dill, Founder, and CEO of the Firefighter Behavioral Health Alliance (FBHA), there were 96 Firefighter and 31 EMS suicides in 2015. He explained this is an increase from 47 and four respectively in 2011. He believes the scope of this problem is still

unclear and estimates approximately 60% of these suicides go unreported (J. Dill, personal communication, August 14, 2016). The stigma of suicide is considered a barrier to accurate reporting because some view it as embarrassing and as a result some suicides are not classified accurately out of respect for the family left behind (Antonellis, Jr & Thompson, 2012). For context, Bradley (2015) reported there were 27 first-responder deaths by suicide in Canada in 2014. She went on to say the prevalence of PTSD in male Canadian firefighters was 17.3% compared to 1.2% in the general population.

In April 2016, a 31-year-old Fairfax County Fire firefighter was found dead in a National Park from suicide by hanging. A suicide note was found in her car, and cyberbullying was suspected as playing a role her death (Va. Firefighter, 2016). Schwebke (2016) reported an Orange County Fire Authority Captain climbed a fence on a highway overpass, jumped and was killed by a tractor trailer. Members of his department responded to the call. Schwebke (2016) cited a national study of 1,000 firefighters, by researchers from Florida State University which revealed nearly half of the respondents say they had suicidal thoughts at one or more points in their careers. About 15% reported one or more suicide attempts (Schwebke, 2016).

Stanley, Hom, Hagan, and Joiner (2015) conducted a nationwide web-based study of current and retired firefighters. The results showed 15.5% made at least one suicide attempt during their career, compared to 1.9–8.7% of the U.S. general adult population. They also found suicidal thoughts reported by 46.8% of firefighters compared with 5.6–14.3% of the general population and 19.2% of firefighters reported having a suicide plan during their career versus 3.9% of the U.S.adult general population during their lifetime. Stanley et al. (2015) also concluded factors associated with increased risk for suicidal thoughts and behaviors included lower firefighter rank, fewer years of service, belonging to an all-volunteer department, history

of responding to a suicide attempt or death and active duty military status. They believe these results may provide a target or higher risk groups who could benefit from increased attention and resources for behavioral health (Stanley et al., 2015).

The available research on firefighter mental illness is not as plentiful as it is for the general population. The literature found on firefighter mental health suggests increased risk and susceptibility to certain types of mental illness, suicide, and substance abuse.

Approaches to first responder behavioral health differ and have changed over time. One mainstay approach has been Critical Incident Stress Management (CISD). According to Jacobs, Horne-Moyer, and Jones (2004), CISD broadly falls under Critical Incident Stress Management (CISM). They recognize this approach has been controversial and admit studies have shown positive, negative and no results from CISD. They reviewed multiple studies on the efficacy of CISD and claimed it is an effective method of reducing the risk of PTSD in secondary trauma victims such as first responders, however, evidence for CISD in primary trauma victims is less convincing. The authors are careful to point out CISD was never intended to be a stand-alone approach to psychological trauma but is often used as such. Jeffrey Mitchell (n.d.) explains CISD is designed to address the impact of a traumatic incident, help the normal recovery processes and create opportunities to identify those who could benefit from treatment by behavioral health professionals. Mitchell references several studies affirming the benefits of CISD including a 1999 study of the survivors from the sinking of the Estonia showed a positive effect from CISD. In answering to criticism of CISD, he claims every negative outcome study on CISD to date did not use trained personnel and they have violated the core standards of practice in the CISM (Mitchell, n.d.).

Gist, Carlos Poston, Jahnke, and Haddock (2014) point to the growing body of evidence CISD does not improve outcomes compared to non-intervention. They suggest detrimental aspects of CISD are inherent to the programs debriefing model which makes alternatives imperative (Gist et al., 2014). The revision of NFPA 1500: *Standard on fire department occupational safety and health program*, to the 2013 edition incorporated *Behavioral Health and Wellness Programs* and *Occupational Exposure* to *Atypically Stressful Events* (Wilmoth, 2014). According to Wilmoth, the change included the removal of CISD in those chapters save a minor mention in a chapter annex. She claims the change was due to a lack of clear evidence CISD is beneficial and an emphasis on after action reviews as a replacement (Wilmoth, 2014).

Gulliver et al. (2016) evaluated a video-based training method for a program referred to as 'Operation Reach Out' which trains firefighters to recognize and intervene when fellow firefighters exhibited behavioral health symptoms. The authors cited evidence of poor outcomes with CISD as one factor in their effort to design a new approach to encourage firefighters to access behavioral health resources. They also point to surveys showing firefighters prefer relying on one another and prefer one on one debriefings in contrast to group settings which are common in the CISD model. Gulliver et al. (2016) also claim the one on one type of peer intervention is consistent with evidence signifying other peers have a greater impact on facilitating professional mental health referrals. They contend proper and timely referrals to a behavioral health specialist for individual counseling are likely to be both the most effective and the most preferred solution to behavioral health problems. To that end, "Project Reach Out" showed increased utilization of professional behavioral health services by using peers trained in intervention. After training, fellow firefighters intervened by an assess, approach, and act

process resulting in an increase in utilization of professional behavioral health resources (Gulliver et al., 2016).

Wagner and Martin (2012) evaluated emotional intelligence and proactive coping skills as predictors of mental illness. They studied a group of professional firefighters in British Columbia and measured the emotional intelligence and proactive coping skills as protective factors for preserving mental health. They found higher levels of emotional intelligence and proactive coping were both associated with lower rates of mental illness and traumatic stress symptoms. This type of testing could be used to improve increase emotional intelligence and proactive coping skills through education and training (Wagner & Martin, 2012).

Resilience training is yet another area of interest as a preventative measure against mental illness. Glenn R. Schiraldi, author of *The complete guide to resilience: Why it matters: How to build and maintain it*, (2011) has been at the forefront of resilience training for the military and public safety. His work in this area started in the early 1980s and evolved into a comprehensive program. According to Schiraldi (2011) this training aims to improve one's ability to experience psychological distress and bounce back. Schiraldi believes resilience training should recognize the mind-body connection including exercise, diet, and nutrition. His resilience training also concentrates on acquiring calming skills, defusing techniques, relaxation, improving self-esteem and managing dreams. Schiraldi further addresses happiness as the antithesis of mental distress and disease. Schiraldi also promotes happiness with the qualities of gratitude, spirituality, and humor. All told resilience training provides ammunition to fight the stress which will inevitably come from inside and outside the job (Schiraldi, 2011).

There has been a variety of approaches to firefighter mental health including CISD, resilience training, and peer intervention. All have strengths and weaknesses; however, a consensus on best practices had been elusive.

The Ohio Fire Service has recently made efforts to better understand firefighter behavioral health through the Ohio Fire Chiefs Association (OFCA) and Ohio Association of Professional Firefighters (OAPFF). In 2016 both organizations collaborated to survey firefighters and chief fire officers about this issue (W. Anderson, personal communication, December 8, 2016). The 2016 Safety, Health, and Wellness Committee Survey Results were as follows; out of 134 OFCA members responding, 62% do not feel they have the resources to deal with a behavioral health issue effectively. Out of 95 OFCA respondents, 23% know a firefighter who has committed suicide. Out of 525 OAPFF respondents, 79% know someone who has had behavioral health problems due to job-related experiences. Out of 522 OAPFF respondents, 80% stated they do not believe their employer or Chief has the resources and/or training to deal with behavioral health issues effectively. Out of 524 OAPFF respondents, over 47% know another firefighter who has attempted or committed suicide (Safety, Health Survey Results, 2016).

In a 2016 article from *Fire Engineering* David S. Castleman describes the introduction of the first Behavioral Health Task Force (BHTF) and Peer Support Team (PST) for the Jacksonville Fire and Rescue Department (JFRD). According to Castleman (2016), this effort was in response to and in recognition of behavioral health problems in the fire service and includes recommendations from The National Fallen Firefighters Foundation (NFFF) Everyone Goes Home, Firefighter Life Safety Initiative 13 (FLSI 13). One example he discusses is Stress First Aid (SFA) training which incorporates recognition skills and peer support for firefighters and rescue personnel. FLSI 13 provides resources and recommendations which are

comprehensive and flexible to address the unique needs of different fire departments, and people (Castleman, 2016).

In 2011 a group of fire service stakeholders gathered in Baltimore, MD to examine the issue of firefighter behavioral health and make recommendations to address the problem (Gist, Raak, & Taylor, 2011). The authors recognized a lack of research in the area of firefighter suicide and lament the absence of successful models available to prevent it. Their efforts, documented in a 2011 White Paper on depression and suicide described the first FLSI 13 Consensus Meeting. The NFFF was originally chartered by Congress to honor firefighters killed in the line of duty (Gist et al., 2011). Since then they have also promulgated initiatives to prevent firefighter fatalities and improve firefighter health and safety. According to Gist et al. (2011), the Foundation created its Everyone Goes Home project and held the first Firefighter Life Safety Summit in Tampa in March 2004 and established the Everyone Goes Home 16 Life Safety Initiatives we know today. FSLI 13, psychological support became the vehicle for evidence-based many behavioral health efforts (Everyone Goes Home website, n.d.). The NFFF was also charged with many responsibilities including advocating for funding studies on fire service mental illness and suicide, incorporating suicide prevention into FLSI 13, and developing protocols to manage the aftermath of firefighter suicide (Gist et al., 2011).

The NFFF through the Everyone Goes Home initiative has continued to build on the recommendations contained in the 2011 White Paper. They have worked with fire service organizations and behavioral health experts to create a new model to address behavioral health in the fire service (Everyone Goes Home website, n.d.). This effort called for integration and revision of NFPA 1500, resilience training, Stress First Aid (SFA), and moving from Employee Assistance Programs (EAPs) to Behavioral Health Assistance Programs (BHAPs) (Everyone

Goes Home website, n.d.). The transition from EAP to BHAP is a recognition traditional EAPs do not take into account the unique nature of an emergency responder's occupation (Everyone Goes Home website, n.d.). The NFFF provides guidance in developing a BHAP and provides resources prospective vendors can utilize to develop a BHAP for the fire department including key elements of NFPA 1500 (2013) (Everyone Goes Home website, n.d.).

Another element of FSLI 13 is regular After Action Reviews (AARs). Based on a military model the AAR need not be formal and can be done in the apparatus bay, kitchen table or other common areas. According to the NFFF, the supervisor being an integral part of the AAR would take note of any signs or symptoms which may require follow-up after a potentially traumatic event (PTE). Research published in 2014 showed, "Company officers (e.g., captains, lieutenants) were regularly recognized as key in identifying when individuals needed additional help in managing their reactions to experiences" (Gist et al., 2014, p. 121). The NFFF has developed a particular protocol for handling PTEs which includes an optional ten-item Trauma Screening Questionnaire (TSQ) to assist in identifying someone who needs further attention (Everyone Goes Home website, n.d.).

Increased awareness has given rise to more coordinated efforts to research and promulgate best practices for the fire service in the area of behavioral health. The NFFF has taken the lead with grant funding and FSLI 13. Along with revisions to NFPA 1500, there are comprehensive resources available to Copley Fire for firefighter behavioral health.

Assessing the extent of mental illness at Copley Fire required an assessment method and instrument appropriate for the target group, resources available and the goals of this research.

Kimbrel et al. (2011) measured the occupational stress of firefighters while evaluating the efficacy of a revised 14 item Sources of Occupational Stress scale (SOOS)-14 They sought an

abbreviated version of the current 57 item SOOS originally designed to assess a full range of occupational stressors faced by firefighters. The authors recognized the length of a 57 item assessment was problematic with firefighters due to feedback the assessment was too long. They found the SOOS-14 was negatively associated with job satisfaction, work morale, the ability to attain goals, and social support at work. However, they report it was positively associated with conflict at work, PTSD symptoms, anxiety symptoms, depression symptoms, alcohol misuse, and drug abuse. The abbreviated scale can be a good predictor of future psychopathologies, though the SOOS-14 does not directly assess for them (Kimbrel et al., 2011).

Monteiro, Abs, Labres, Maus, and Pioner (2013) examined psychopathology and working conditions of Brazilian firefighters. They utilized individual interviews and questionnaires which included the 10 item Alcohol Use Disorders Identification Test (AUDIT) and the 17 item Structured Clinical Interview for DSM-IV Post Traumatic Stress Disorder (SCID-PTSD), the 21 item Beck Depression Inventory (BDI) and the 21 item Beck Anxiety Inventory (BAI). Their results showed positive associations between alcohol consumption and length of service; a similar correlation was noted between depression and age. Their results from the BDI showed 7.4% with mild depression and 7.4% with moderate depression. The BAI showed 26% with mild anxiety, 3.7% with moderate anxiety and 3.7% with severe anxiety (Monteiro et al., 2013).

According to Beaulieu-Pré vost, Marchand, and Drapeau (2012) psychological distress is a recognized widely measure of mental health illness. They cite a variety of assessment instruments including the General Health Questionnaire (GHQ) used in 12, 20, 28, 30 and 60 item versions, the 6 and 10 item Kessler scale, the 18 item Brief Symptom Inventory (BSI) and the 58 item Hopkins Symptoms Checklist (HSCL-58). All vary with respect to length of time

windows, point severity/frequency scales, self-administered vs clinician administered and specific areas of psychological distress being assessed (Beaulieu-Pré vost et al., 2012).

Douglas A. Smith, M.D., Chief Clinical Officer of the Summit County Alcohol, Drug Addiction and Mental Health Services Board (ADM) indicated higher than normal levels of psychological distress do not equate to diagnoses of mental illness, however, it is highly comorbid with certain types of mental illness. As such it is a useful screening tool for mental illness (D. Smith, personal communication, July 13, 2016).

Chappelle et al. (2014) used psychological distress as an indicator for PTSD in United States Air Force (USAF) drone pilots. They chose the Outcome Questionnaire (OQ-42.5) and the PTSD Checklist-Military (PCL-M) as they are both specific to PTSD and commonly used in the military. Dean, Gow, & Shakespeare-Finch (2003) evaluated psychological distress in Australian career and auxiliary firefighters using the General Health Questionnaire (GHQ-28) and Impact of Event Scale-Revised (IES-R). They found, 68% of career firefighters reported no distress, 14.7% reported mild distress and 17.3% reported severe distress. They also found 85.1% of axillary firefighters reported no distress, 7.5% reported mild distress and 7.5% reported severe distress. The authors reported psychological distress was more prevalent in career firefighters, and in firefighters with greater years of service. As such they suggest these at-risk groups could be targeted for psychological distress assessment (Dean et al., 2003).

The literature commonly refers to psychological distress as it relates to mental illness and mental health screening. Glenn Schiraldi, Ph.D., LTC (USAR, Ret.) of University of Maryland School of Public Health suggested, an assessment instrument measuring psychological distress in the areas of depression, hopelessness, anxiety, and anger is a useful tool in mental illness screening (G. Schiraldi, personal communication, July 26, 2016). A Psychological Distress

Profile (PDP) developed by Gary Elkins and Aimee Johnson measures psychological distress in the areas of depression, hopelessness, anxiety, and anger through 20 core questions categorizing distress levels as normal, mild, moderate and severe. Elkins and Johnson (2015) claim the PDP can be used in research, clinical settings, as a paper or online instrument and in a group or individual settings (Elkins & Johnson, 2015). The PDP was validated and standardized with responses of a nationwide 1,000+ person sample comprised of three separate samples. Respondents were between 19 and 81 years of age representing all major ethnic groups (Elkins & Johnson, 2015).

According to the National Alliance on Mental Illness (NAMI) depression is characterized by a loss of interest or loss of pleasure in all activities. Changes in eating habits, sleep disturbances, fatigue, feelings of low self-worth and guilt are also commonly associated with depression (Depression, n.d.). Depressed individuals can have difficulty concentrating or making decisions and experience suicidal thoughts or intentions (Depression, n.d.). The Houston Fire Department studied the issue of firefighter suicide and found depression and PTSD were the strongest predictors of suicidal thoughts and attempts in the department (Depression & PTSD Predictors of Suicide, 2016).

Elkins and Johnson (2015) contend hopelessness is an important indicator linked to depression is also highly associated with suicide. They describe anxiety disorders like phobias, social anxiety disorder, PTSD, and generalized anxiety disorder to be linked to depression and highly associated with suicide. The physical effects of psychological distress should not go without mention. Anger can cause secondary anxiety, depression, have adverse effects on the cardiovascular system and has a negative impact on most organ systems (Elkins & Johnson, 2015).

McGuire, Ahearn, and Doering (2015) concluded psychological distress has a significant adverse effect on patients with cardiovascular disease. They further explained depression, anxiety, and PTSD are the three most common psychological conditions associated with cardiovascular disease. Druss, Zhao, Von Esenwein, Morrato, and Marcus (2011) reported people with mental illness die an average of 8.2 years earlier than the rest of the US population.

Identifying and treating mental illness can be complicated by the stigma surrounding it. It can be a barrier for those in need from getting help. Bobby Halton, Editor, *Fire Engineering* discusses this stigma as something which has always been attached to behavioral health issues. He continues; "many of us were taught that people who struggled with depression or mental health issues were not well, were not strong, and were somehow defective" (Halton, 2014). That teaching, he explains, was not created in the fire service but was adopted from society as a whole. Karnieli-Miller et al. (2013) referred to research documenting this stigma as having an adverse impact on the mental and physical health of people attached to it. The issue is so persuasive they engaged further research on the stigma extending to both family and friends of those with mental illness. The results reveal a similar undesirable effect of on friends and relatives (Karnieli-Miller et al., 2013). Rutkow, Gable, and Links (2011) addressed the ethical and legal issues complicating first-responder mental health screening and treatment. In the same article, they acknowledged first responders might avoid testing or treatment for mental health conditions for fear of negative perceptions by co-workers and supervisors. Rutkow et al. (2011) confirm "Individuals with mental health conditions are often wary of the stigma associated with diagnosis and treatment" (p. 57).

There is a multitude of mental illness assessment methods and instruments used in the reviewed research. The literature and expert opinions point to psychological distress as a widely

accepted screening tool for mental illness due to a high association between the two conditions. Based on the literature, an assessment instrument with qualities including brevity and anonymity would be desirable.

The literature illustrates mental illness has a significant negative impact on the general population. Finding current academic research on this subject was not difficult, however, the same could not be said for the subject of firefighter mental health. The existing research on firefighter mental health suggests increased risk and susceptibility to certain types of mental illness, suicide, and substance abuse compared to the general population. Approaches to firefighter mental health have varied over time, and until recently a consensus on best practices has been elusive. However, the NFFF through FSLI 13 and NFPA 1500 have developed evidenced-based recommendations and resources which are readily available to establish a comprehensive behavioral health program. The literature also lead to a psychological distress assessment which is appropriate for use as a mental health screening tool at Copley Fire.

Procedures

The purpose of this research was to determine the extent to which Copley Fire employees experience mental health issues and determine how to identify and treat them. A literature search, personal interviews, and input from mental health professionals guided and informed the choice of an assessment instrument which could screen a group of approximately 50 subjects in a cost effective and time efficient manner.

The PDP provided by Mindgarden.com was used as a web-based, anonymous, self-administered questionnaire. The author had no access to the identity of the respondents to assure the anonymity of the process. The anonymous feature of the results was by request of the author as it is an option provided by Mindgarden.com. The questionnaire was accessed by a link

provided in an email from Mindgarden.com sent to all active Copley Firefighters. For this research, “firefighters” refer to all active Copley Fire emergency personnel including “EMS only.” Anyone on extended leaves of absence was not included in the results. An extended leave of absence was defined as continuous absence from working for one month before, or one month after the first emails went to the group being assessed. A final determination of eligible participants was made after the questionnaire availability closed. The author did not participate.

An introductory email was sent to all eligible participants currently employed by Copley Fire explaining the research project and giving general directions on completing the PDP (see Appendix A). After an introductory email, all participants received an email from Mindgarden.com (see Appendix B). Weekly reminders from Mindgarden.com went to anyone who had not completed the questionnaire. The questionnaire remained available 34 days before assessment access was closed. Participant eligibility was again reviewed, and raw data exported to an Excel spreadsheet for analysis (see Appendix C, Table C 1). Only the 20 core items in the PDP were used for analysis. Of the 46 eligible participants, 35 (76%) completed and submitted the questionnaire. Single scale data analysis and results interpretation were completed according to the PDP Manual using the suggested cut-off scores for psychological distress (Appendix C, Table C 2). Publishing the PDP instrument in this document was not possible due to copyright restrictions (Elkins & Johnson, 2015).

Describing how Copley Fire compares to the larger fire service as it relates to mental illness was done using the PDP and studies identified in the literature review

Assessing the existing resources available to identify and address firefighter mental health issues at Copley Fire was completed with personal interviews, referencing Township policies, the current CBA and the existing knowledge and experience of the author.

Determining resources needed to identify and address firefighter mental health issues at Copley Fire were similarly derived from the literature review and personal interviews.

Results

The extents to which mental health issues exist at Copley Fire are as follows: total psychological distress results show 48.6% have minimal distress, 37.1% mild distress, 8.6% have moderate distress and 5.7% have severe distress. Of the 46 eligible participants, 35 (76%) completed and submitted the PDP questionnaire. Noteworthy results show five individuals report severe distress in one or more categories, thirteen report moderate distress in one or more categories.

Dean et al. (2003) examined psychological distress in Australian career and auxiliary firefighters. The closest comparison using similar terminology and values for total psychological distress from the PDP show Copley Fire has more firefighters in the mild, and moderate range of distress and the Australian study shows more firefighters in the severe range of distress. Monteiro et al. (2013) assessed Brazilian firefighters in the categories of depression and anxiety using mild, moderate and severe ranges. Using comparable terminology, Brazilian firefighters fared better than Copley Firefighters in every category except severe anxiety.

The following tables illustrate the results of the Copley Firefighters PDP and how those data compare to data from previous research on firefighter mental illness.

Table 1
Psychological Distress Profile for the Copley Firefighters

Severity	Depression	Hopelessness	Anxiety	Anger	Total Score
Minimal	20(57.1%)	23(65.7%)	14(40.0%)	16(45.7%)	17(48.6%)
Mild	11(31.4%)	10(28.6%)	13(37.1%)	10(28.6%)	13(37.1%)
Moderate	2 (5.7%)	1 (2.9%)	7 (20.0%)	6 (17.1%)	3 (8.6%)
Severe	2 (5.7%)	1 (2.9%)	1 (2.9%)	3 (8.6%)	2 (5.7%)

Note. n=35. Shows PDP results of Copley Firefighters using the recommended single scale cut off scores from the *Psychological Distress Profile Manual*, (Elkins & Johnson, 2015). Listed as number of respondents and corresponding percentage in each category.

Table 2
Comparison of the Copley Firefighters and Australian Firefighters

Severity	Copley	Australian Career	Australian Auxiliary
Mild	37.1%	14.7%	7.5%
Moderate	8.6%	0	0
Severe	5.7%	17.3%	7.5%

Note. Show a comparison of Australian Firefighters as reported by Dean et al. (2003) to Copley Firefighters using the common terminology of mild, moderate and severe psychological distress.

Table 3
Comparison of Copley Firefighters and Brazilian Firefighters

	Copley Firefighters Psychological Distress		Brazilian Firefighters Psychopathology	
Severity	Depression	Anxiety	Depression	Anxiety
Mild	31.4%	37.1%	7.4%	26%
Moderate	5.7%	20.0%	7.4%	3.7%
Severe	5.7%	2.9%	0	3.7%

Note. Shows a comparison between Brazilian Firefighters Psychopathology as reported by Monteiro et al. (2013) and Copley Firefighters Psychological Distress using the common terminology of mild, moderate and severe.

Resources available to identify and address firefighter mental health issues at Copley Fire are limited to an Employee Assistance Program and supervisor intervention. Ease@work provides the EAP available at all Copley Township employees (J. Marshall, personal communication, December 16, 2016). The EAP can be recommended to an employee formally or informally. It is also promoted by email and pamphlets displayed in common areas of the department (M. Benson, personal communication, July 6, 2016). The EAP is only mentioned in the Copley Township Policy Manual and CBA in the context of alcohol and substance abuse (*Agreement of Copley Firefighters*, n.d.; *Copley policy manual*, 2006). The program provides counseling for grief, depression, anxiety, stress, conflict, anger management, substance abuse and relationship issues. Assistance in other areas such as financial, legal and child care is also available (Assistance programs for employees, n.d.). The supervisory staff of Copley Fire does monitor for PTEs and offer referrals if they believe it would help, but this is not a structured approach (M. Benson, personal communication, July 6, 2016).

The resources needed to identify and address firefighter mental health issues at Copley Fire are outlined in by the NFFF in FSLI 13 and NFPA 1500. The NFPA 1500, 2013 Edition, describes the standard for a fire department behavioral health program which shall be made available to its members and their family. This standard provides minimum elements including assessment, basic counseling service, stress crisis intervention assistance, alcohol and substance abuse, anxiety, depression, atypically stressful events and personal problems affecting work performance. The standard also calls for the capability to refer members and their immediate family to providers equipped to provide evidence-based treatment consistent with current best practices and standards of care. Clearly written policies should be adopted and followed

regarding the implementation of a behavioral health program (National Fire Protection Association [NFPA], 2013).

NFPA 1500 specifies how behavioral health program records should be maintained, how the program should be reviewed and also calls for the fire department physician to maintain oversight of all clinical aspects of the program. The standard also specifies participation in clinically relevant intervention must be voluntary.

The NFFF recommends Behavioral Health Programs include SFA training, AARs, a transition from EAPs to BHAPs, resilience training and suicide prevention training (Everyone Goes Home website, n.d.). This is not an exhaustive list. However, FSLI 13 offers guidance and training customizable to the needs of each fire department.

Discussion

Understanding mental illness and its impact on the general population was helpful to appreciate the subject better when looking at Copley Fire. Sado et al. (2013) cited WHO estimates of 450 million people worldwide who have a mental illness and NAMI reports in Mental Health Basics (n.d.) depression affects more than 26% of the U.S. adult population. Suicide represents the tenth leading cause of death in the United States for 2013 (Suicide: Facts at a Glance, n.d.). According to Insel et al. (2015), mental disorders are responsible for the largest source of disability for people ages of 15 to 44. Moreover, just having a mental illness increases the likelihood of diabetes, heart disease, pulmonary diseases, HIV, homelessness, and institutionalization (Insel et al., 2015). The global scope and impact of this problem provide support for the effort to examine mental illness at Copley Fire. It also indicated Copley Fire would benefit from a behavioral health program.

The PDP results for Copley Firefighters shows 8.6% have moderate, and 5.7% have severe total distress scores. In the category of depression, 5.7% have psychological distress in each of the moderate and severe categories. Although this gives some perspective, it is not a comparable measurement to NAMI data of 26% of the U.S. adult population affected by depression (Mental Health Basics, n.d.).

Examining mental illness in the general population was informative and further raised suspicion there would be some level of mental illness at Copley Fire and the larger fire service, however, suspicion is not adequate to justify funding a behavioral health program. Kimbrel et al. (2011) claim firefighters are more susceptible to mental illness than the general population and have an increased risk for substance abuse, depression, PTSD, and occupational burnout. Jahnke et al. (2016) suggest firefighters may experience *secondary trauma*, *vicarious trauma* or *compassion fatigue*, even when they are not literal victims. This *secondary trauma* is suspect in the emotional well-being of firefighters who responded to a 2001 mass shooting and other PTEs in Copley Township. Bradley (2015) confirmed PTSD is a serious problem among first-responders believes and notes the suicide rate for first responders is approximately 30% higher, and marital problems are twice as prevalent than comparison groups.

Despite the increased attention of firefighter suicide, it is hard to get a clear picture of the problem. The FBHA reports there were 96 Firefighter and 31 EMS suicides in 2015 representing an increase from 47 and four respectively in 2011(J. Dill, personal communication, August 14, 2016). Based on the data from the FBHA firefighter suicides may be increasing. It is also possible greater awareness and tracking activities are at work in the apparent increase. The research is none the less concerning. Stanley et al. (2015) reported 15% of career firefighters made at least one suicide attempt during their career. Schwebke (2016) reported on the suicide

of an Orange County Fire Authority Captain who jumped from a bridge onto a highway and was killed by a tractor trailer. The immediate aftermath of his violent death was witnessed by members of his department who responded to the incident (Schwebke, 2016). As in many cases, this firefighter turned to suicide as the only viable option for his problems. In addition to the obvious impact this had in his department, the firefighters who responded to the scene are especially affected. Stanley et al. (2015) found firefighters were at increased risk for suicide if they recently responded to suicide attempt or death. Barring adequate intervention in the aftermath of the Orange County Fire suicide, the repercussions could lead to further behavioral health problems and suicide. The author is personally aware of one Copley Firefighter who threatened suicide and subsequently received help. It is difficult to know if an earlier intervention could have changed the course of events. However, in this case, tragedy was avoided by luck, not by a timely intervention as part of a behavioral health program.

The association of substance abuse with mental illness is significant and worthy of more attention. Piazza-Gardner et al. (2014) found a majority of firefighters consumed alcohol and approximately 34% engaged in binge drinking. Swendsen et al. (2010) confirmed mental illness is associated with an increased risk of substance abuse and suggest primary mental illness has predictive value for future substance abuse. They point to self-medicating as a coping mechanism in one causal model. Copley Fire has performed drug testing randomly, and with reasonable suspicion in the past, however, it has not been consistent. Based on the literature, a positive drug test may indicate the need to investigate for underlying mental illness. The research also supports a behavioral health program as one way to decrease the risk of later substance abuse.

Assessing for mental illness at Copley Fire was initially problematic as it related to the method and logistics. Only mental health professionals diagnose mental illnesses, but this was not a practical solution given the resources available for this research. A psychological distress assessment instrument was chosen as a proxy measurement for mental illness based on the literature and expert opinion. Beaulieu-Pré vost et al. (2012) reports psychological distress is a widely recognized measure of mental illness. Douglas A. Smith, M.D., Chief Clinical Officer of the Summit County ADM agreed psychological distress measurement as a valid method of screening for mental illness (D. Smith, personal communication, July 13, 2016). G. Schiraldi concurred but added measuring psycological distress in the areas of depression, hopelessness, anxiety, and anger is would be an effective screening tool for this research (personal communication, July 26, 2016). Accordingly, the PDP was used to assess mental illness at Copley Fire. The PDP developed by Gary Elkins and Aimee Johnson measures psychological distress in the areas of depression, hopelessness, anxiety, and anger through 20 core questions. The PDP was brief, allowed anonymous participation and provided the option of using a web-based platform (Elkins & Johnson, 2015).

Anonymity during the mental health screening at Copley Fire was considered an essential element of the process. Bobby Halton, Editor, *Fire Engineering* describes the stigma surrounding mental illness as something which has always been attached to behavioral health issues (Halton, 2014). This kind of stigma is reinforced at Copley Fire in part because pre-employment psychological testing is based on the premise undesirable results prevent employment. It is, therefore, understandable if Copley Firefighter may later feel uncomfortable asking for psychological help or participating in a mental health screening. Maintaining strict anonymity in using the PDP for this research was integral to the process.

The PDP showed, of the 35 Copley Firefighters responding, five reported severe distress in one or more categories and thirteen reported moderate distress in one or more categories. Total psychological distress results showed 48.6% are at a minimal level, 37.1% are mild, 8.6% are moderate, and 5.7% are categorized as severe. Having only anecdotal evidence of attendance problems, workplace conflicts and policy violations it was difficult to quantify mental illness at Copley Fire. However, having numerical results and the related interpretation of the PDP, it was still necessary to determine what the results mean for Copley Fire. Psychological distress is highly comorbid with mental illness (D. Smith, personal communication, July 13, 2016). Taking into account this comorbidity these results are concerning regardless of how they compare to the larger fire service or the general population. The results are consistent with the anecdotal evidence of job performance problems present before this research and support need to implement a behavioral health program at Copley Fire.

Comparing the PDP results from Copley Fire to the larger fire service was challenging. The data on mental illness or psychological distress in firefighters is limited. Only two studies were found that could be used for comparison. One study measured firefighter psychological distress and one other measured psychopathology. There are differences and similarities between the two which go beyond the scope of this research. Neither study used instruments meeting the needs of this research in brevity or in the ability to measure hopelessness, anger, depression, and anxiety. Despite the obvious differences, these two studies were used for comparison. Only similar categories were used. The PDP category for “minimum” was not included as it was not included in the Australian or Brazilian study. The Brazilian study had only areas of depression and anxiety in common with the PDP. Therefore, those were used for

comparison. The Australian study cited total psychological distress without component categories, and as a result, only total PDP scores were used for comparison.

Dean et al. (2003) examined psychological distress in Australian career and auxiliary firefighters. The closest comparison using similar terminology and values for total psychological distress from the PDP show Copley Fire has more firefighters in the mild, and moderate range of distress and the Australian study shows more firefighters in the severe range of distress. Monteiro et al. (2013) assessed Brazilian firefighters in the categories of depression and anxiety using mild, moderate and severe ranges. Using comparable terminology, Brazilian firefighters fared better than Copley Firefighters in every category except severe anxiety.

The value of these comparisons is questionable at best. The research in this area is sparse, and what research there is comes from outside the U.S. using different assessment instruments which vary in a multitude of ways. Drawing clear conclusions from these comparisons was difficult.

The results for behavioral health resources at Copley Fire show the current EAP, constitutes the majority of the current resources available to Copley Firefighters. There is evidence the Township EAP is used for mental health services in the areas anxiety, depression, and relationship/divorce. However, this data represented all departments in Copley Township and is not specific to the fire department (*Copley 2015 utilization report*, 2016). The NFFF recommends moving from EAPs to BHAPs as they do not address the unique nature the fire service. A BHAP incorporates the recommendations from NFPA 1500 including behavioral health resources for immediate family and for exposures to atypically stressful events (Everyone Goes Home website, n.d.).

Copley Fire is not alone in lacking behavioral health resources. The 2016 survey done by the OFCA and OAPFF shows out of 134 OFCA members responding, 62% feel they do not have the resources to deal with a behavioral health issue effectively. Out of 522 OAPFF respondents, 80% stated they do not believe their employer or Chief has the resources and/or training to deal with behavioral health issues effectively (Safety, Health, and Wellness Survey Results, 2016).

The literature search for resources needed to address firefighter behavioral health yielded a variety of results. However, the NFFF, Everyone Goes Home, FLSI 13 was the most comprehensive and current source for this information. According to Castleman (2016), the first BHTF and PST for the JFRD was patterned after the NFFF; Everyone Goes Home, FLSI 13. He went on to say the resources and recommendations found there are comprehensive and flexible to address the unique needs of different fire departments, and people (Castleman, 2016).

Like many departments, Copley Fire lacks the staff and funds necessary to create a behavioral health program from scratch. As such, ready-made procedures and tools specifically for firefighters is a valuable resource. The NFFF, FSLI 13 format allows for customization to the unique needs of each department. Integration of program elements can be done based on need and existing behavioral health resources. An example of this at Copley Fire is the practice of having supervisors monitor for exposure to atypical stressful events. Gist et al. (2014) showed "Company officers (e.g., captains, lieutenants) were regularly recognized as key in identifying when individuals needed additional help in managing their reactions to experiences" (p. 121). In this case, a small modification could transform this practice into an AAR recommended by the NFFF. During the AAR the supervisor would take note of any signs or symptoms which may require follow-up after a PTE (Everyone Goes Home website, n.d.). The NFFF has also developed protocol for handling PTEs including a ten-item TSQ to assist in identifying someone

who needs further attention (Everyone Goes Home website, n.d). This is another tool Copley Fire can use to identify at-risk individuals for mental illness better.

The AAR is used in situations where traditionally a CISD would be. The literature reveals disagreement on the effectiveness of CISD. Jacobs et al. (2004) concluded CISD is an effective method of reducing the risk of PTSD in first responders. A 1999 study of the survivors from the sinking of the Estonia showed a benefit from CISD (Mitchell, n.d.). However, Gist et al. (2014) report CISD does not improve outcomes compared to no-intervention. They go on to say there are detrimental aspects of CISD. The revision of NFPA 1500 to the 2013 edition incorporated *Behavioral Health and Wellness Programs* and *Occupational Exposure to Atypically Stressful Events* (Wilmoth, 2014). She owes the change to a lack of clear evidence CISD was beneficial and an emphasis on after action reviews as a replacement.

NFPA 1500 provides a framework or structure for behavioral health programs where the NFFF, FSLI 13 provides system specifics. These resources can be customized for Copley Fire's unique needs, personnel and existing resources. The evidenced based information contained in NFPA 1500 and FSLI 13 provides readymade tools for use in an existing or new behavioral health program.

This research was limited by the nature of a self-administered instrument. The respondents were responsible for following the directions accurately and responding honestly; the atmosphere was not controlled for light, noise or other distractions. The lack of a commonly used or consensus instrument also limited the comparative value of the results to the larger fire service. Lastly, a psychological distress assessment does not provide a diagnostic level result of mental illness. Psychological distress is highly comorbid will mental illness. As such it was a

practical choice to screen for signs and symptoms of mental illness. It was not practical or logistically possible to screen for diagnosable mental illness.

Recommendations

The data from the PDP supports existing concerns of a mental health problem at Copley Fire. The author recommends the continued use of current resources including the Copley Township EAP, Summit County Safety Forces Chaplaincy Center and the Summit County Health Department. Furthermore, a structured behavioral health program should be established using the evidence-based recommendations of the NFFF; Everyone Goes Home, FSLI 13 and NFPA 1500. The program should be given the priority and resources necessary to achieve implementation and sustainability. A behavioral health committee should be formed to determine the course of implementation. An annual review should be done to evaluate the effectiveness and determine what changes need to be made for improvement. Part of this evaluation should include an assessment using the PDP as one measure of effectiveness.

The Copley Fire Behavioral Health Program should;

- provide assessment, basic counseling service, stress crisis intervention assistance, alcohol, and substance abuse, anxiety, depression, atypically stressful events and personal problems affecting work performance;
- be capable of referring members and their immediate family to providers equipped to provide evidence-based treatment consistent with current best practices and standards of care;
- have clearly written policies regarding the implementation and specifies how behavioral health program records should be maintained, how the program

should be reviewed and also calls for the fire department physician to maintain oversight of all clinical aspects of the program;

- The standard also specifies participation in clinically relevant intervention must be voluntary;
- integrate or supplement the existing EAP while transitioning to a BHAP;
- incorporate resilience training, SFA and suicide prevention;
- and provide for regular AAR including the ten-item TSQ as needed (Everyone Goes Home website, n.d.; NFPA 1500).

This research was limited in part due to the lack of a standard assessment instrument for use in the fire service. The author recommends the NFFF establish a consensus on one assessment instrument for screening mental illness in firefighters. This instrument should be made available to any fire department to use free of charge and without copyright restrictions. Furthermore, additional research is needed on psychological distress in firefighters and on the efficacy of routine psychological evaluations in the fire service.

References

Agreement between Copley Township Board of Trustees and the International Association of Firefighters local 3130Copley Firefighters January 1, 2015, to December 31, 2017 [Collective Bargaining Agreement]. (n.d.). Copley, OH: Copley Township.

Alexandre, P. K., Hwang, S., Roth, K. B., Gallo, J. J., & Eaton, W. W. (2016, Summer). Costs of depression from claims data for medicare recipients in a population-based sample. *Journal of Health & Human Services Administration*, 72-95. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/27483975

Antonellis, Jr, P. J., & Thompson, D. (2012, December). A firefighter's silent killer: Suicide. *Fire Engineering*, 69-75. Retrieved from http://www.fireengineering.com/content/dam/fe/online-articles/documents/FEU/FEU-AntonellisDec12.pdf

Assistance programs for employees. (n.d.). Retrieved December 17, 2016, from http://www.easeatwork.com/Services/AssistanceProgramsforEmployees.aspx

Beaulieu-Pré vost, D., Marchand, A., & Drapeau, A. (2012). Epidemiology of psychological distress. In L. L'Abate (Ed.), *Mental illnesses - Understanding, prediction and control* (pp. 106-134). http://dx.doi.org/DOI: 10.5772/1235

Bradley, L. (2015, Spring). A silent killer: Giving voice to the quiet mental health crisis among first-responders. *Psynopsis, the magazine of the Canadian Psychological Association*, 10. Retrieved from http://www.cpa.ca/Psynopsis/

Castleman, D. S. (2016, July). Firefighter behavioral health: First aid for us. *Fire Engineering*, *169*(7), 24-29.

Chappelle, W. L., McDonald, K. D., Prince, L., Goodman, T., Ray-Sannerud, B. N., & Thompson, W. (2014, August). Symptoms of psychological distress and post-traumatic stress disorder in United States Air Force "drone" operators. *Military Medicine, 179*(8), 63-70. Retrieved from http://publications.amsus.org/doi/pdf/10.7205/MILMED-D-13-00501

Cohen, K. R. (2015, Spring). Crisis response... maybe one size doesn't fit all. *Psynopsis, a magazine of the Canadian Psychological Association, 37*(2), 4-20. Retrieved from http://www.cpa.ca/docs/File/Psynopsis/spring2015/index.html

Copley Township EAP utilization report. (2016). Copley, OH: Ease@work.

Copley Township personnel policy manual [Policy Manual]. (2006). Copley, OH: Copley Township.

Dean, P. G., Gow, K. M., & Shakespeare-Finch, J. (*2003*). Counting the cost: Psychological distress in career and auxiliary firefighters. *The Australasian Journal of Disaster and Trauma Studies*, 2003(1), 1-12. Retrieved from http://www.massey.ac.nz/~trauma/issues/2003-1/dean.htm

Depression. (n.d.). Retrieved November 25, 2016, from http://www.nami.org/Learn-More/Mental-Health-Conditions/Depression

Depression & PTSD shown to be strongest predictors of firefighter suicide. (2016). Retrieved from http://www.firehouse.com/article/12280354/depression-ptsd-shown-to-be-strongest-predictors-of-firefighter-suicide

Druss, B. G., Zhao, L., Von Esenwein, S., Morrato, E. H., & Marcus, S. C. (2011, June). Understanding Excess mortality in persons with mental illness: 17-Year follow up of a

nationally representative US survey. *Medical Care*, *49*, 599-604. http://dx.doi.org/10.1097/MLR.0b013e31820bf86e

Elkins, G., & Johnson, A. (2015). *Psychological distress profile manual*. Retrieved from mindgarden.com website: http://www.mindgarden.com/163-psychological-distress-profile

Everyone Goes Home® website. (n.d.). https://www.everyonegoeshome.com/16-initiatives/13-psychological-support/

Gist, R., Carlos Poston, W. S., Jahnke, S. A., & Haddock, C. K. (2014, May). Behavioral health interventions in the fire service: Stories from the firehouse. *Journal of Workplace Behavioral Health, 29*(2), 113-26. http://dx.doi.org/10.1080/15555240.2014.898568

Gist, R., Raak, S., & Taylor, V. H. (2011). *Suicide surveillance, prevention, and intervention measures for the US fire service: Findings and recommendations for the suicide and depression summit* [White Paper]. Retrieved from Everyone Goes Home® website: https://1rxflr7bsmg1aa7h24arae91-wpengine.netdna-ssl.com/wp-content/uploads/2014/04/suicide_whitepaper.pdf

Gulliver, S. B., Cammarata, C. M., Leto, F., Ostiguy, W. J., Flynn, E. J., Carpenter, G. J., ... Kimbrel, N. A. (2016). Project reach out: A training program to increase behavioral health utilization among professional firefighters. *International Journal of Stress Management*, *23*(1), 65-83. http://dx.doi.org/http://dx.doi.org/10.1037/a0039731

Halton, B. (2014, January). Our problem. *Fire Engineering*, 8.

Insel, T. R., Collins, P. Y., & Hyman, S. E. (2015, January/February). Darkness invisible. *Foreign Affairs*, *94*(1), 127-35. Retrieved from http://www.cfr.org/

Jacobs, J., Horne-Moyer, H. L., & Jones, R. (2004). The effectiveness of critical incident stress debriefing with primary and secondary trauma victims. *International Journal of Emergency Mental Health*, *6*(1), 5-14.

Jahnke, S. A., Carlos Poston, W. S., Haddock, C. K., & Murphy, B. (2016, February, 15). Firefighting and mental health: Experiences of repeated exposure to trauma. *WORK: A Journal of Prevention, Assessment and Rehabilitation*, *53,* 737-44. http://dx.doi.org/10.3233/WOR-162255

Karnieli-Miller, O., Perlick, D. A., Nelson, A., Mattias, K., Corrigan, P., & Roe, D. (2013). Family members'of persons living with a serious mental illness: Experiences and efforts to cope with stigma. *Journal of Mental Health*, *22*(3), 254-262. http://dx.doi.org/10.3109/09638237.2013.779368

Kimbrel, N. A., Steffen, L. E., Meyer, E. C., Kruse, M. I., Knight, J. A., Zimering, R. T., & Gulliver, S. B. (2011). A revised measure of occupational stress for firefighters: Psychometric properties and relationship to posttraumatic stress disorder, depression, and substance abuse. *Psychological Services*, *8*, 294-306. http://dx.doi.org/10.1037/a0025845

Lund, C., Myer, L., Stein, D. J., Williams, D. R., & Fisher, A. J. (2013). Mental illness and lost income among adult South Africans. *Social Psychiatry & Psychiatric Epidemiology*, *48*, 845-51. http://dx.doi.org/10.1007/s00127-012-0587-5

Malik, M. A., Khan, M. M., & Zaman, M. (2015, January-March). Economic burden of mental health in Pakistan. *Journal of Pakistan Psychiatric Society*, *12*(1), 67-67. Retrieved from http://web.b.ebscohost.com.proxy.library.kent.edu/ehost/pdfviewer/pdfviewer?vid=7&sid=7fa0ce5e-35f5-4454-8e87-a91ee35e38c3%40sessionmgr104&hid=102

McGuire, A. W., Ahearn, E., & Doering, L. V. (2015, September). Psychological distress and cardiovascular disease. *Journal of Clinical Outcomes Management*, *22*(9), 1-14. Retrieved from http://www.jcomjournal.com/psychological-distress-and-cardiovascular-disease/

Mental health basics. (n.d.). Retrieved September 9, 2016, from https://www.cdc.gov/mentalhealth/basics.htm

Mental health conditions. (n.d.). Retrieved August 21, 2016, from https://www.nami.org/Learn-More/Mental-Health-Conditions

Mitchell, J. T. (n.d.). Critical incident stress debriefing. Retrieved November 15, 2016, from http://www.info-trauma.org/flash/media-e/mitchellCriticalIncidentStressDebriefing.pdf

Monteiro, J. K., Abs, D., Labres, I. D., Maus, D., & Pioner, T. (2013, July-September). Firefighters: Psychopathology and working conditions. *Studies In Psychology (Campinas)*, *30*(3), 437-44. Retrieved from http://www.scielo.br/pdf/estpsi/v30n3/v30n3a13.pdf

National Fire Protection Association. (2013). Standard on Fire Department Occupational Safety and Health Program. In *Standard on fire department occupational safety and health program* (1500, pp. 1-84). Retrieved from http://codesonline.nfpa.org

Piazza-Gardner, A. K., Barry, A. E., Chaney, E., Dodd, V., Weiler, R., & Delisle, A. (2014). Covariates of alcohol consumption among career firefighters. *Occupational Medicine*, *64*, 580-82. http://dx.doi.org/10.1093/occmed/kqu124

Rutkow, L., Gable, L., & Links, J. M. (2011, Spring). Protecting the mental health of first responders: Legal and ethical considerations. *The Journal of Law, Medicine & Ethics*, 56-

59. Retrieved from https://www.aslme.org/media/downloadable/files/links/1/2/12.Rutkow.pdf

Sado, M., Takechi, S., Inagaki, A., Fujisawa, D., Koreki, A., Mimura, M., & Yoshimura, K. (2013, December 18). Cost of anxiety disorders in Japan in 2008: a prevalence-based approach. *BMC Psychiatry*, *13*(338). http://dx.doi.org/10.1186/1471-244X-13-338

Safety, health, and wellness committed behavioral health resources. (2016). Retrieved December 5, 2016, from http://associationdatabase.com/aws/OFCA/ebulletin/view_mail/103288/346210

Schiraldi, G. R. (2011). *The complete guide to resilience: Why it matters: How to build and maintain it*. Ashburn, VA: Resilience Training International.

Schwebke, S. (2016, December 15). Apparent suicide of Orange County fire captain may be part of sad trend in profession. *The Mercury News*. Retrieved from http://www.mercurynews.com/

Stanley, I. H., Hom, M. A., Hagan, C. R., & Joiner, T. E. (2015, August 28). Career prevalence and correlates of suicidal thoughts and behaviors among firefighters. *Journal of Affective Disorders*, *187*, 163-171. Retrieved from http://dx.doi.org/10.1016/j.jad.2015.08.007

Stanley, I. H., Hom, M. A., & Joiner, T. E. (2016, March). A systematic review of suicidal thoughts and behaviors among police officers, firefighters, EMTs, and paramedics. *Clinical Psychology Review*, *44*(), 25-44. http://dx.doi.org/http://dx.doi.org/10.1016/j.cpr.2015.12.002

Suicide: Facts at a glance. (n.d.). Retrieved September 10, 2016, from https://www.cdc.gov/violenceprevention/pdf/suicide-datasheet-a.pdf

Swendsen, J., Conway, K. P., Degenhardt, L., Glantz, M., Jin, R., Merikangas, K. R., ... CKessler, R. (2010). Mental disorders as risk factors for substance use, abuse and dependence: results from the 10-yearfollow-up of the National Comorbidity Survey. *Addiction*, *105*, 1117-1128. http://dx.doi.org/10.1111/j.1360-0443.2010.02902.x

United States Fire Administration. (n.d.). *Strategic plan: Fiscal years 2014– 2018*. Retrieved from https://www.usfa.fema.gov/downloads/pdf/publications/strategic_plan_2014-2018.pdf

U.S. Fire Administration. (n.d.). Strategic plan: Fiscal years 2014–2018. Retrieved September 30, 2016, from https://www.usfa.fema.gov/downloads/pdf/publications/strategic_plan_2014-2018.pdf

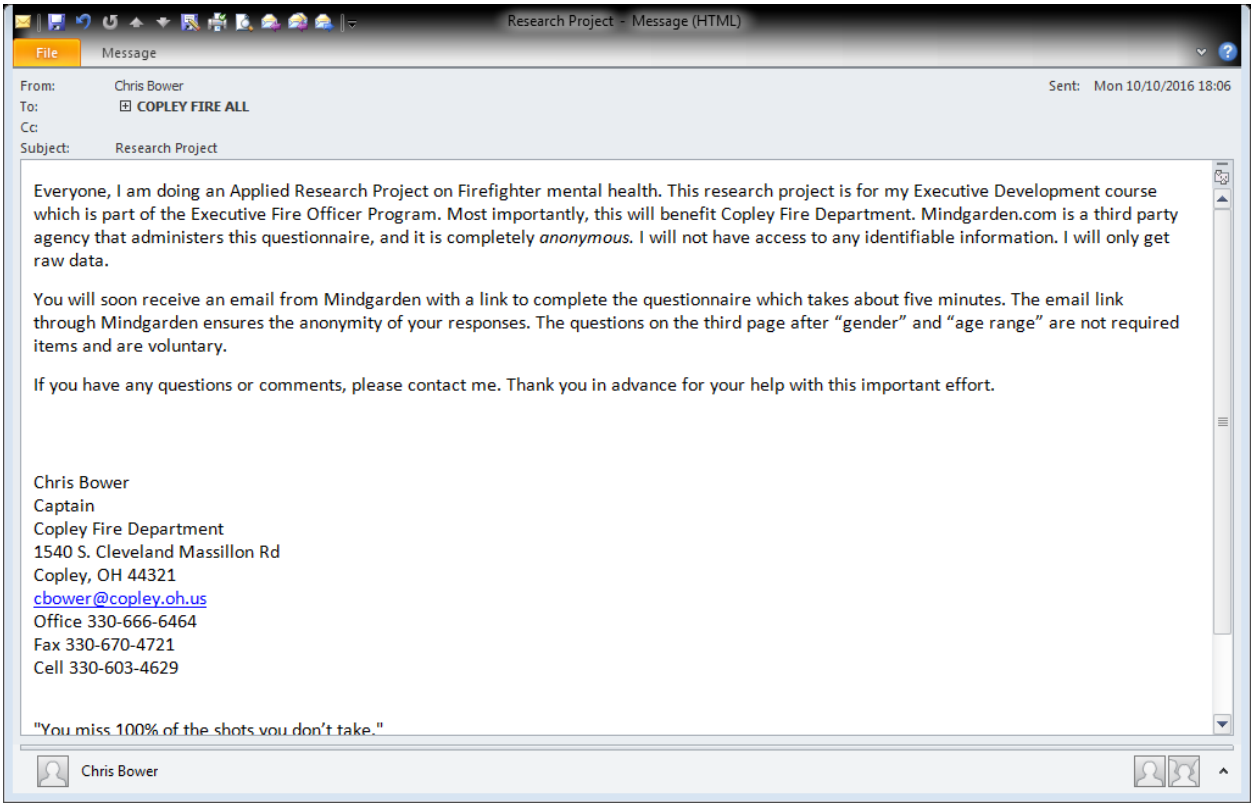
Va. firefighter-paramedic found dead was a victim of bullying. (2016). Retrieved from http://www.firechief.com/2016/04/23/va-firefighter-paramedic-found-dead-was-a-victim-of-bullying/

Wagner, S. L., & Martin, C. A. (2012). Can firefighters' mental health be predicted by emotional intelligence and proactive coping? *Journal of Loss and Trauma*, *17*, 56-72. http://dx.doi.org/10.1080/15325024.2011.584027

Wilmoth, J. A. (2014, May 2). Trouble in mind. *NFPA Journal*, 1-8. Retrieved from http://www.nfpa.org/news-and-research/publications/nfpa-journal/2014/may-june-2014/feat

World Health Organization. (2016). Mental disorders fact sheet. Retrieved December 2, 2016, from http://www.who.int/mediacentre/factsheets/fs396/en/

Appendix A: Example of initial email explaining the research



Research Project - Message (HTML)

File Message

From: Chris Bower
To: COPLEY FIRE ALL
Cc:
Subject: Research Project
Sent: Mon 10/10/2016 18:06

Everyone, I am doing an Applied Research Project on Firefighter mental health. This research project is for my Executive Development course which is part of the Executive Fire Officer Program. Most importantly, this will benefit Copley Fire Department. Mindgarden.com is a third party agency that administers this questionnaire, and it is completely *anonymous*. I will not have access to any identifiable information. I will only get raw data.

You will soon receive an email from Mindgarden with a link to complete the questionnaire which takes about five minutes. The email link through Mindgarden ensures the anonymity of your responses. The questions on the third page after "gender" and "age range" are not required items and are voluntary.

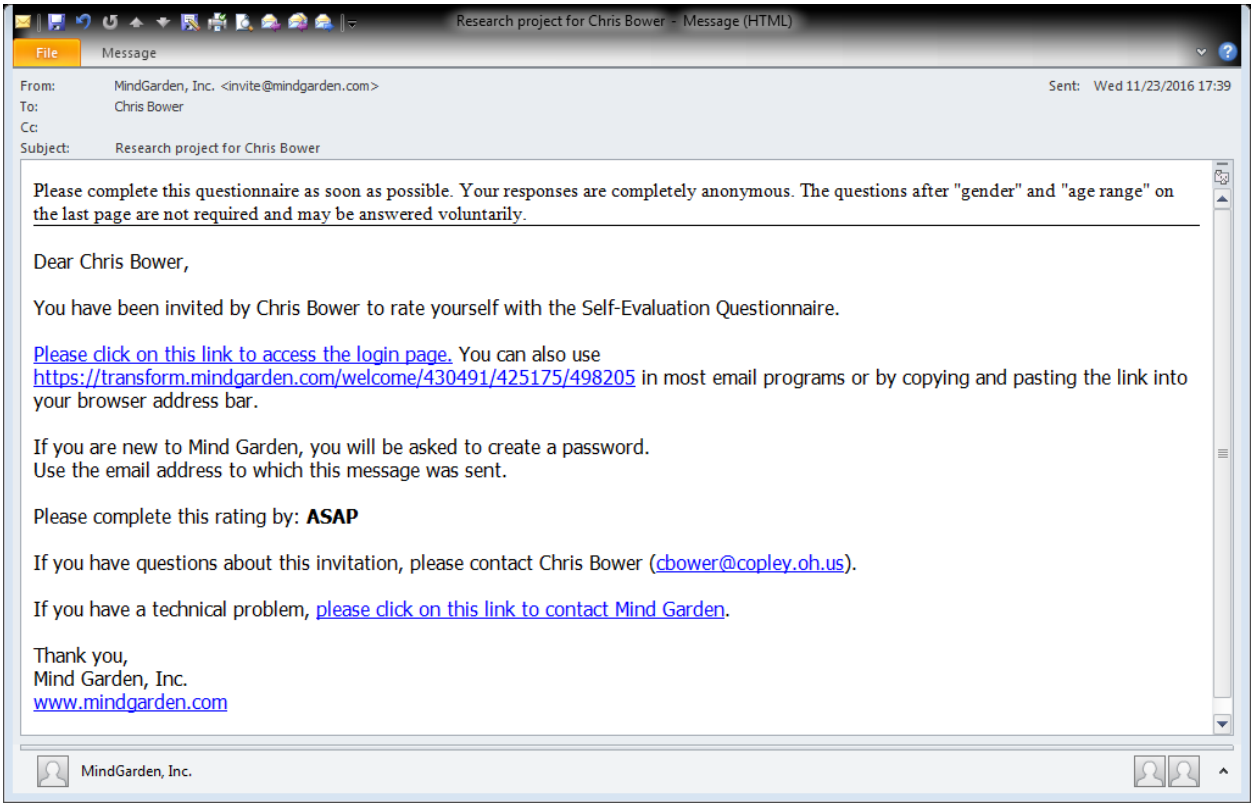
If you have any questions or comments, please contact me. Thank you in advance for your help with this important effort.

Chris Bower
Captain
Copley Fire Department
1540 S. Cleveland Massillon Rd
Copley, OH 44321
cbower@copley.oh.us
Office 330-666-6464
Fax 330-670-4721
Cell 330-603-4629

"You miss 100% of the shots you don't take."

Chris Bower

Appendix B: Example of Mindgarden Email with link to PDP



Research project for Chris Bower - Message (HTML)

File Message

From: MindGarden, Inc. <invite@mindgarden.com> Sent: Wed 11/23/2016 17:39
To: Chris Bower
Cc:
Subject: Research project for Chris Bower

Please complete this questionnaire as soon as possible. Your responses are completely anonymous. The questions after "gender" and "age range" on the last page are not required and may be answered voluntarily.

Dear Chris Bower,

You have been invited by Chris Bower to rate yourself with the Self-Evaluation Questionnaire.

Please click on this link to access the login page. You can also use https://transform.mindgarden.com/welcome/430491/425175/498205 in most email programs or by copying and pasting the link into your browser address bar.

If you are new to Mind Garden, you will be asked to create a password.
Use the email address to which this message was sent.

Please complete this rating by: **ASAP**

If you have questions about this invitation, please contact Chris Bower (cbower@copley.oh.us).

If you have a technical problem, please click on this link to contact Mind Garden.

Thank you,
Mind Garden, Inc.
www.mindgarden.com

MindGarden, Inc.

Appendix C: Copley Firefighters PDP raw data results with cut off scores

Table C 1

Copley Firefighters Raw Scores from PDP

	Depression	Hopelessness	Anxiety	Anger	Total Score
FF 1	5	5	8	6	24
FF 2	7	5	12	10	34
FF 3	11	8	12	14	45
FF 4	5	5	9	5	24
FF 5	5	5	5	5	20
FF 6	21	19	18	13	71
FF 7	8	8	13	7	36
FF 8	11	5	16	6	38
FF 9	9	9	10	9	37
FF 10	5	5	5	5	20
FF 11	18	13	20	19	70
FF 12	7	5	8	9	29
FF 13	5	5	5	5	20
FF 14	11	10	16	22	59
FF 15	5	5	5	5	20
FF 16	5	5	6	5	21
FF 17	5	5	7	7	24
FF 18	5	6	9	5	25
FF 19	20	12	9	9	50
FF 20	5	5	5	5	20
FF 21	5	8	5	8	26
FF 22	10	10	10	10	40
FF 23	5	5	5	5	20
FF 24	7	6	11	9	33
FF 25	5	5	7	7	24
FF 26	5	6	12	16	39
FF 27	5	5	5	5	20
FF 28	5	5	5	5	20
FF 29	5	5	5	6	21
FF 30	6	5	10	7	28
FF 31	15	10	17	9	51
FF 32	12	10	10	11	43
FF 33	10	9	14	12	45
FF 34	6	5	16	5	32
FF 35	5	5	5	5	20
n =	35	35	35	35	35
	Key	Minimal	Mild	Moderate	Severe

Table C 2

PDP recommended cut-off scores

Severity	Depression	Hopelessness	Anxiety	Anger	Total
Minimal	5-6	5-6	5-7	5-6	20-27
Mild	7-12	7-12	8-12	7-9	28-47
Moderate	13-18	13-17	13-18	10-14	48-67
Severe	>18	>17	>18	>14	>67

Note. PDP single scale cut off scores adapted from the Psychological Distress Profile Manual (Elkins & Johnson, 2015).

Appendix D: Permission to use PDP

Permission for Chris Bower to reproduce 1 copy within one year of October 7, 2016

mind garden

www.mindgarden.com

To whom it may concern,

This letter is to grant permission for the above named person to use the following copyright material for his/her research:

Instrument: ***Psychological Distress Profile***

Authors: ***Gary Elkins and Aimee Johnson***

Copyright: ***2015 by Gary Elkins and Aimee Johnson. All rights reserved in all media.***

Three sample items from this instrument may be reproduced for inclusion in a proposal, thesis, or dissertation.

The entire instrument may not be included or reproduced at any time in any published material.

Sincerely,

Robert Most
Mind Garden, Inc.
www.mindgarden.com

Appendix E: Permission to use PDP manual

Psychological Distress Profile Manual

(Includes Instrument and Scoring Key for review only)

By

Gary Elkins and Aimee Johnson

Published by Mind Garden, Inc.
info@mindgarden.com
www.mindgarden.com