


January 2015

A Qualitative Exploration of Firefighter Participation in Wellness Programs within a Career Fire Department in Northern Ohio

Conner O'Halloran
Eastern Kentucky University

Follow this and additional works at: <https://encompass.eku.edu/etd>

 Part of the [Mental and Social Health Commons](#), [Occupational Health and Industrial Hygiene Commons](#), and the [Training and Development Commons](#)

Recommended Citation

O'Halloran, Conner, "A Qualitative Exploration of Firefighter Participation in Wellness Programs within a Career Fire Department in Northern Ohio" (2015). *Online Theses and Dissertations*. 301.
<https://encompass.eku.edu/etd/301>

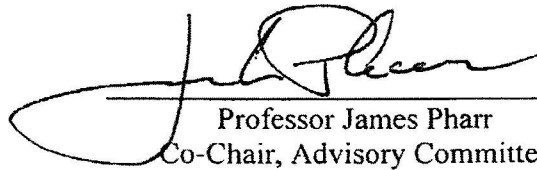
This Open Access Thesis is brought to you for free and open access by the Student Scholarship at Encompass. It has been accepted for inclusion in Online Theses and Dissertations by an authorized administrator of Encompass. For more information, please contact Linda.Sizemore@eku.edu.

A QUALITATIVE EXPLORATION OF FIREFIGHTER PARTICIPATION IN
WELLNESS PROGRAMS WITHIN A CAREER FIRE DEPARTMENT IN
NORTHERN OHIO

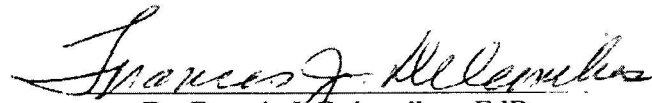
By

Conner Terrance O'Halloran


Thesis Approved:



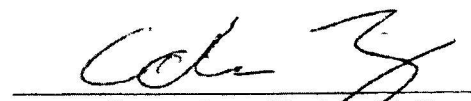
Professor James Pharr
Co-Chair, Advisory Committee



Dr. Francis J. Deleonibus, EdD
Co-Chair, Advisory Committee



Professor Sarah Morris
Member, Advisory Committee



Dr. Andrew Tinsley, Ph.D.
Member, Advisory Committee



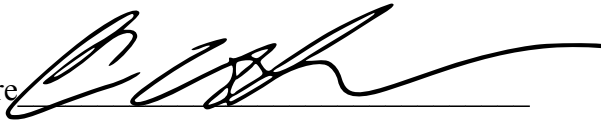
Dean, Graduate School

Statement of Permission to Use

In presenting this thesis/dissertation in partial fulfillment of the requirements for a Master of Science degree at Eastern Kentucky University, I agree that the Library shall make it available to borrowers under rules of the Library. Brief quotations from this thesis are allowable without special permission, provided that accurate acknowledgement of the source is made.

Permission for extensive quotation from or reproduction of this thesis may be granted by my major professor, or in his/her absence, by the Head of Interlibrary Services when, in the opinion of either, the proposed use of the material is for scholarly purposes. Any copying or use of the material in this thesis for financial gain shall not be allowed without my written permission.

Signature



Conner T O'Halloran

Date: 4-12-15

A QUALITATIVE EXPLORATION OF FIREFIGHTER PARTICIPATION IN
WELLNESS PROGRAMS WITHIN A CAREER FIRE DEPARTMENT IN
NORTHERN OHIO

By

Conner Terrance O'Halloran

Bachelor of Science in Applied Science
Youngstown State University
Youngstown, Ohio
2012

Associate of Applied Science
Youngstown State University
Youngstown, Ohio
2011

Submitted to the Faculty of the Graduate School of
Eastern Kentucky University
in partial fulfillment of the requirements for the degree of
MASTER OF SCIENCE
May, 2015

Copyright © Conner T. O'Halloran, 2015
All rights reserved

DEDICATION

This research is dedicated to all the firefighters putting their lives on the line day in and day out protecting others.

ACKNOWLEDGMENTS

I would like to thank my friends and family for supporting me during this process. Most importantly, I would like to thank my wife who has stuck by my side this entire process. You have been with me through stressful times and happy times. I am truly grateful to have such a great friend. I love you Jessica.

I also want to thank Dr. Francis J. Deleonibus. Kip, you have provided supportive feedback and stuck by me during this long process. I am grateful you agreed to be a part of my research and my graduate program. Thank you.

ABSTRACT

Firefighters respond to dangerous emergencies every day. The physical and mental wellness of firefighters is very important to their overall job performance. To support this, fire departments must have established, comprehensive wellness programs (International Association of Firefighters, 2008). Even with national standard recommendation of wellness programs, one does not exist in a fire department located in Northern Ohio.

The focus of this research is to explore reasons why these highly recommended wellness programs are not established. Successful establishment of a wellness program requires understanding why this fire department is hesitant or unsuccessful in implementing and maintaining a wellness program.

This research consisted of a qualitative study with employees from a single fire department. Three employees were chosen at three different levels of the fire department rank structure: entry-level, middle management, and high management. These three employees were chosen at random by the chief of the department. Employees were asked various questions about their knowledge of (a) the leading cause of firefighter fatalities, (b) awareness of wellness programs, (c) whether their department should have a wellness program, and (d) who in the department would be advocates for a wellness program.

Participants all agree that the components of the wellness programs are important. Results from the interviews indicated that cost was not a reason preventing implementation; however, three main issues surfaced: (1) there was a clear breakdown of communication between different levels within the department, (2) the previously implemented wellness program failed, and (3) the department lacks voluntary participation.

TABLE OF CONTENTS

CHAPTER	PAGE
I. BACKGROUND.....	1
Problem Statement.....	2
Research Question.....	3
II. REVIEW OF LITERATURE.....	4
Firefighter Mortality Statistics.....	4
Firefighter Mental Health.....	5
Firefighter Suicide Statistics.....	6
Firefighter Obesity.....	7
Firefighter Wellness Program.....	8
Wellness Program Impact.....	10
Fire Department Legal Concerns.....	12
Literature Summary.....	14
III. METHODOLOGY.....	15
Location.....	15
Participants.....	15
Protocol.....	16
Collection and Analysis.....	16
Research Limitations.....	17
IV. RESEARCH FINDINGS.....	18

V. DISCUSSION	20
Recommendations	21
Communication breakdown	21
Failure of previous wellness program	22
Department participation	23
Future Research	23
REFERENCES	24
Appendix A: Interview Introduction and Questions	27
Appendix B: Interviewer/Interviewee Informed Consent and Confidentiality Agreement	30
Appendix C: Department Consent Request	31
Appendix D: OSHA 1910.134 App C Questionnaire	34
Appendix E: Notice of IRB Exemption Status	43
Appendix F: Interview Transcripts	45
Entry-Level Participant	46
Middle-Management Participant	48
High-Management Participant	51
Vita	54

List of Figures

Figure 1	7
----------------	---

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

CHAPTER I

BACKGROUND

When an emergency occurs, there is an expectation that someone will respond to mitigate the emergency. The public expects the individuals responding to be mentally and physically ready to appropriately and safely deal with the emergency. More importantly, these individuals are expected to quickly recover from that emergency in order to be ready for the next emergency. The individuals discussed here are firefighters and at all times must be ready to immediately go into highly stressful, highly intense, highly physical environments. In general, these situations involve medical emergencies, vehicle crashes, fires, gas, and utility emergencies. These emergencies can range from the person who feels ill to the person who has stopped breathing, to fire alarm activations, to fires. The firefighter must be fit both mentally and physically to mitigate any situation for which his or her services are requested.

Emergency situations cause stress on responders and continuous exposure to that intense stress can develop medical problems. However, stress can also be thought of as a useful tool for firefighters. Stress from the emergency can stimulate the firefighter's sympathetic nervous system giving him or her the adrenaline rush needed to perform above and beyond the firefighter's normal ability. The sympathetic nervous system is commonly described as the "flight or fight" response (Bledsoe, Porter, & Cherry, 2009). This response is the adrenaline rush that pushes people beyond their normal ability.

Continuous exposure to stress could develop into medical concerns. Prolonged exposure to stress has been linked to medical problems (The American Institute of Stress, 2014; Bledsoe, Porter, & Cherry, 2009). For example, according to the United States

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

Fire Administration's report, *Firefighter Fatalities in the United States in 2010*, the leading cause of firefighter fatalities occur as a result of medical emergencies.

Specifically, 63% of firefighter deaths were classified as "stress or overexertion" (United States Fire Administration, 2013). A clear problem exists in today's fire service that has been widely publicized.

The International Association of Firefighters and International Association of Fire Chiefs have discussed this growing problem and have collaborated together to establish an initiative. Together they drafted *The Fire Service Joint Labor Management Wellness-Fitness Initiative* (WFI). The mission of the initiative includes key points such as (a) confidentiality, (b) progressive wellness improvement, (c) commitment, (d) physical and wellness programs that are not punitive, and (e) a holistic wellness approach (International Association of Firefighters, 2008). This is the third edition of the initiative and looks like a fix to the aforementioned problems. However, to be effective, these wellness programs have to be put into practice.

Problem Statement

In Northern Ohio, there appears to be a low prevalence of wellness programs, specifically at this one career department being studied. Wellness programs are designed to reduce the mortality of firefighters and increase the health of firefighters. It is not known why this Northern Ohio fire department is not participating in or implementing a wellness program.

Research Question

The focus of this research is to explore why this fire department is not participating in or implementing wellness programs. Discovering why this fire department is hesitant to implement these programs will enable the firefighting community to work towards mitigating those reasons. Why is this fire department not providing a wellness and fitness program despite national standards and national research?

CHAPTER II

REVIEW OF LITERATURE

It is irrefutable that firefighters work in a dangerous occupation and those choosing the profession of firefighting inherently face certain health risks. There are times when firefighters must take a significant risk to accomplish tasks. For example, when a civilian is trapped in a house fire, firefighters must take a large risk for the potential to save a human life. These incidents are not necessarily predictable. They happen at a moment's notice and firefighters are expected to be mentally and physically trained to make a rescue. .

Firefighter Mortality Statistics

The United States Fire Administration (USFA) has tracked firefighter fatalities for the past thirty-six years. They release an annual report consisting of studies that show areas of concern. Most operational changes can be traced to a finding identified by these reports. For example, if there is a high prevalence of emergency vehicle collisions, emergency vehicle driving programs will be developed (United States Fire Administration, 2013).

According to the USFA report, a total of eighty-one firefighter fatalities occurred in the year 2012 (United States Fire Administration, 2013). While conducting research for this thesis the USFA report for 2013 was not available. The highest percentage of fatalities during 2012 was stress or overexertion (United States Fire Administration, 2013). An alarming 70.4% of fatalities were included in this category. Specifically, the USFA defines this as a general category of firefighter deaths that are "... cardiac or

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

cerebrovascular in nature, such as heart attacks, strokes...” (United States Fire Administration, 2013). This percentage of fatalities has grown over time; in 2003, it was 46.9% (United States Fire Administration, 2013). Clearly, this growing cause of fatalities is an increasing problem for today's fire service. Over the period of time between year 2003 and year 2013, cardiac related fatalities increased from forty-six percent to seventy percent.

A portion of the 2013 report revealed an analysis of fatalities using the ages of firefighters. The analysis revealed that younger firefighters are more likely to experience a fatal injury from “trauma or asphyxiation” compared to their older counterparts who are more likely to experience a fatal injury from a “heart attack/cerebrovascular accident (CVA)/other” (United States Fire Administration, 2013). This is important because it indicates that the prevalence of firefighter fatalities is linked to medical concerns with older firefighters. There is a chance to reduce this high prevalence of cardiac disease if prevention programs are developed early in a firefighter's career.

Firefighter Mental Health

Firefighter psychological health is also a significant concern. Firefighter stress has been the catalyst for twenty-five to thirty percent of firefighters abusing alcohol (Norwood & Rascati, 2012). Stress by definition is difficult to define. It varies from person to person. It can affect people at different times and in different ways (The American Institute of Stress, 2014). Firefighters are no different; at times, stress is needed to perform the required job. A firefighter performing a rescue uses stress to help him or her save a person. However, there are negative aspects of stress. Prolonged

exposure can lead to obesity and develop into mental illnesses (Norwood & Rascati, 2012). It has been suggested that firefighter mental illness develops from a prolonged period of continuous stress and not necessarily a single event. Past mindset suggested only a single event caused firefighter mental illnesses (Murphy, 2014).

Firefighter Suicide Statistics

To bridge the gap of unstudied suicide rates, Captain Jeffrey Dill created a reporting organization for fire departments that lose members to suicide called *Firefighter Behavioral Health Alliance*. Captain Dill provided data from analyzing firefighter suicide rates for this research (Dill, 2014). In a recent news story, Philip Rogers reported the alarming suicide rate in the fire service. He quotes Chicago Fire Department's Elizabeth Crowe, "Our firefighters and paramedics see the type of trauma and type of things that nobody else would see in a lifetime" (Rogers, 2014). This helps explain that firefighters are at risk for mental health concerns.

In the data received, Captain Dill organized 467 firefighter suicides into categories. First, the age of the firefighter was analyzed. The age range of forty-one to fifty years represented the highest rate of suicides (n=100). Next, Dill compared the method of suicide. The use of firearms was the leading method for firefighter suicide (n=265). Finally, firefighter suicide was organized by year. The important point of this research is to show that firefighter suicide is a real and growing threat within today's fire service.

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

Figure 1 shows the total suicides that occurred in various years. It is important to note that from year 1880 to 1999, there were 89 suicides that occurred over this one hundred and nineteen year time period. In a two-year time period, 2012 and 2013, there were 58 and 59 suicides respectively.

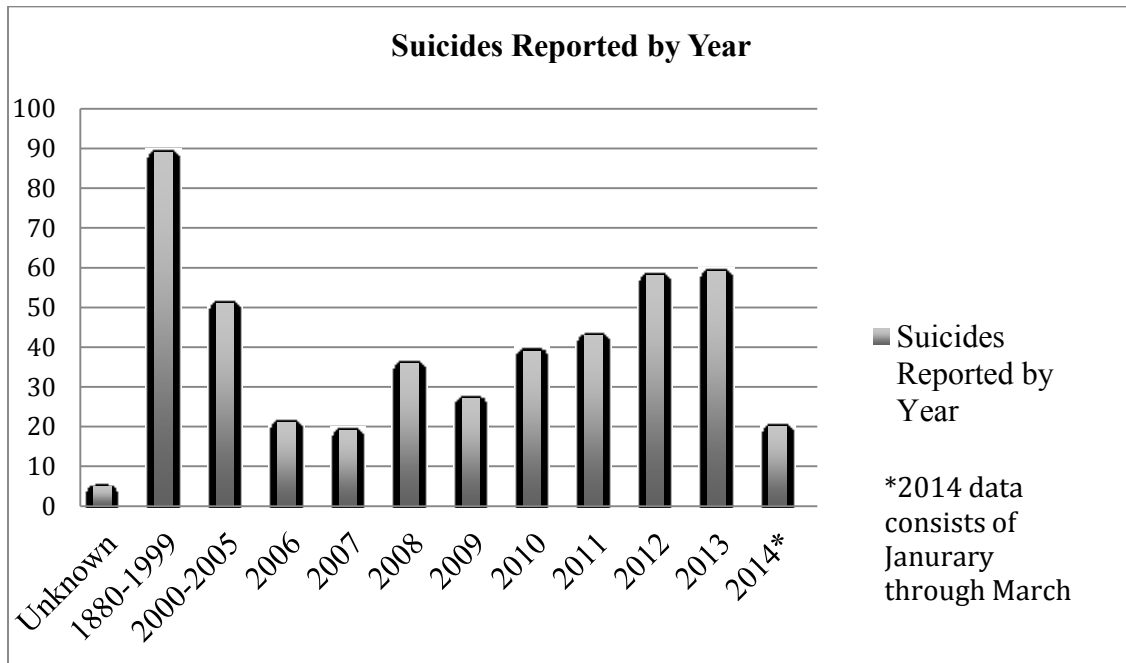


Figure 1. Suicides by Years. Source: Dill, J. (2014). *Firefighter Behavioral Health Alliance*. Retrieved May 5, 2014, from http://ffbha.org/FBHA_Page.php

Firefighter Obesity

Obesity is an everyday concern for one-third of the country (Centers for Disease Control and Prevention, 2014). The CDC determines obesity by measuring the body mass index (BMI) of an individual. The BMI is calculated by dividing weight in pounds (lbs.) by height in inches (in.) squared and multiplied by a conversion factor of 703.

An adult is considered overweight when the BMI is between 25.0 and 29.9. An individual is considered obese when their BMI is 30 or higher. The CDC uses an example of a person five feet nine inches tall weighing between 169 and 202 lbs. is

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

considered overweight. A weight greater than 203 lbs. is considered obese (Centers for Disease Control and Prevention, 2014).

Thirty to forty percent of firefighters are clinically obese (Haddock, Poston, & Jahnke, 2011). This is a severe increase compared to the general public. Haddock, Poston, and Jahnke (2011) reported that the causation for obesity in the fire service could be any number of predisposing factors such as sleep interruption, shift work, unhealthy eating, and lack of physical fitness.

Obesity is proven to be a direct link to health complications (Centers for Disease Control and Prevention, 2014; Haddock, Poston, & Jahnke, 2011; Elpidoforos, Hauser, Kawachi, Christiani, & Kales, 2008). In fact, firefighters who had a greater than 28.5-body mass index (BMI) had a seventy percent increased risk of job disability compared to those below the 28.5 BMI (Elpidoforos, Hauser, Kawachi, Christiani, & Kales, 2008).

Firefighter Wellness Programs

While not new, the topic of firefighter health has been an important concern for fire departments. In fact, the first standard for medical requirements was included in the 1974 edition of National Fire Protection Association (NFPA) 1001, *Standard on Professional Qualifications for Firefighters*. These medical requirements, however, focused on candidate firefighters. Since then, the standard has grown to include overall firefighter wellbeing. This program, now called NFPA 1582, *Comprehensive Occupational Medical Program for Fire Departments* works with subject matter experts along with various agencies to include protocols for medical evaluations. This standard sets criteria for candidate firefighters as well as incumbent firefighters. Earlier, the

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

standard only focused on new, entry-level firefighters. Specifically, it identifies medical conditions that may interfere with essential job tasks of firefighters. NFPA 1582 focuses on helping a physician make decisions about a firefighter's work status when certain medical conditions are present (National Fire Protection Association, 2013). Again, focus of these requirements is on new, entry-level firefighters. There is (according to this standard) regulation on established firefighters.

The International Association of Firefighters (IAFF) joined with the International Association of Fire Chiefs (IAFC) to write *The Fire Service Joint Labor Management Wellness-Fitness Initiative* (WFI). The IAFF also worked with the NFPA committee developing NFPA 1582, *Standard on Comprehensive Occupational Medical Program for Fire Departments*. The WFI has five components: (a) medical, (b) fitness, (c) medical/fitness/injury rehabilitation, (d) behavioral health, data collection and, (e) reporting. The components essentially walk a fire department through each section from medical examinations to mental health and wellbeing to physical fitness. This comprehensive program works toward assuring firefighters are well enough to attack whatever emergency they encounter. The WFI also incorporates a rehabilitation program to get affected firefighters back to full function. The most important component of the WFI is that it is not designed to be a punitive program for firefighters. It is focused on improving the wellbeing of all uniformed personnel in the organization (International Association of Firefighters, 2008).

In addition to program components, the WFI offers implementation steps and strategies. Specifically, the WFI discusses the importance of developing a strategic plan for implantation. Additionally, the WFI discusses a monitor progress and data collection

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

process. This is important to establish further benchmarks. (International Fire Service Training Association, 2008)

As with any new program, there are certain implementation concerns that departments will face. Michael Medeiros (2008) reported several items that departments often lack when implementing a wellness program. First fire departments may not plan fully and misjudge the total cost of starting a wellness program. Second, fire departments implement a wellness program with no prior instruction, thus leading to injuries and accidents. Third, departments do not establish or do not stick to implementation timeline. Fourth, administrators set goals with no input or consideration from the subordinate ranks. Fifth and finally, departments do not have a clear strategy for wellness program compliance. It is important to understand other roadblocks other departments have had in order to properly implement a wellness program.

Wellness Programs Impact

Research has been supportive of wellness programs for quite some time. Gebhardt and Crump (1990) discuss wellness programs in the workplace. They linked wellness programs to positive changes in employee health. Additionally, they discuss findings of decreased absenteeism, turnover, and injuries for those who participate in a wellness program (Gebhardt & Crump, 1990).

More recently, Mattke et al. (2013) perform a comprehensive analysis of worksite wellness programs. They found a similar positive trend in employee health. As part of their comprehensive analysis, they looked at the role of incentives with employee participation in wellness programs. Incentives consisted of penalty only, reward only, penalty and reward, and other. The majority of employers surveyed had an incentive

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

program with rewards only. Specifically, monetary incentives have been proven effective (Mattke, et al., 2013).

Mattke et al. also looked at implementation factors. Specifically, organizations with wellness programs employed specific strategies (Mattke, et al., 2013). These strategies range from face-to-face interaction to mass communications. Mattke et al. further discuss how a lack of effective communication can negatively impact the wellness program initiation. Therefore, they conclude that effective communication is a key component to program implementation (Mattke, et al., 2013).

Baicker, Cutler, and Song (2010) conducted a literature review from peer-reviewed meta-analyses of employee wellness programs. Their most important finding was the total cost savings from wellness programs. In all, there was an average \$3.27 return on medical costs for each one dollar spent on wellness programs. Additionally, there was an average \$2.73 return for each dollar spent on absentee costs (Baicker, Cutler, & Song, 2010).

Gebhardt and Crump determined that wellness programs decrease absenteeism, turnover, and workplace injuries. Mattke et al found an overall increase in employee health associated with a wellness program. Baicker, Cutler, and Song found wellness programs cost effective. Therefore it can be said that wellness programs are an effective tool for employers.

Fire Department Legal Concerns

Firefighters are required to use respiratory protection during their course of duty (International Fire Service Training Association, 2008). As mentioned earlier, law requires some wellness program components. Because of the firefighting respiratory requirement, regular medical exams are required for firefighters. In Ohio fire departments not providing annual medical exams are in direct violation of the Ohio Administrative Code (OAC).

The Occupational Safety and Health Administration (OSHA) respiratory standard, 29 CFR 1910.134 requires medical evaluation of employees. Specifically §1910.134(e) states:

Using a respirator may place a physiological burden on employees that varies with the type of respirator worn, the job and workplace conditions in which the respirator is used, and the medical status of the employee. Accordingly, this paragraph specifies the minimum requirements for medical evaluation that employers must implement to determine the employee's ability to use a respirator.

The standard states that the employer shall have a physician perform a medical evaluation of employees using respirators by issuing a medical questionnaire (Appendix D, hereafter *questionnaire*), or an initial medical evaluation. Due to simplicity, it is likely that the preferred method for obtaining this information would be the questionnaire versus a physician medical exam. In the questionnaire, if the employee answers in the affirmative to questions one through eight in part A, the employer is required to provide a follow-up medical exam. Further, if the physician's professional opinion is that the

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

employee needs a follow-up exam from reading his or her questionnaire, the physician can request an employer provided follow-up exam (§1910.134(e)(3)(i)).

Ohio for example, has a respiratory standard entitled *Ohio Administrative Code* (OAC) 4123:1-21-02(P). Specifically, OAC 4123:1-21-02(P)(3) requires a physician to annually certify each member required to use respiratory protection. To be *certified*, the physician may perform a medical exam or use the questionnaire as referenced earlier. If certain conditions or behaviors exist, the employer must see that the firefighter receives a medical exam by a physician (OAC 4123:1-21-02(P)).

From that questionnaire, there are not any pass/fail criteria defined in section P of the OAC. Ohio's attorney general, Michael DeWine, issued an opinion on this problem. In DeWine's opinion (2012-003), he concluded if there is a "yes" answer to any question one through eight in §2(A) of the questionnaire, the employer must insure a medical exam is performed by a physician. If a person has a history of cardiac disease, is a smoker, is a diabetic, etc., a medical exam must be performed. It is then the physician's responsibility by using "...his education, experience, and professional judgment..." to medically certify a firefighter (DeWine, 2012).

Fire departments must be aware of such laws already in place. At this point, it is easy for a firefighter injured in the line of duty to win a civil lawsuit against a fire department for an injury that is causally linked to not receiving a medical exam. Additionally if there is an injury sustained while using a respirator, the fire department may also be held liable.

Literature Summary

There is a risk for firefighters developing serious health conditions. Wellness programs focus on improving overall firefighter health. As mentioned earlier, evidence has shown wellness program success. Some laws require regular medical exams. So why does this department not embrace wellness program?

CHAPTER III

METHODOLOGY

The objective of this research study was to investigate why this fire department has not fully embraced occupational wellness programs. The methodology consisted of interviews with individuals in the fire service. Specific methods were developed from qualitative literature from John Creswell (1994) and Michael Patton (2002). A qualitative study looks at exploring the grounded theory (Creswell, 1994).

Location

One fire department was chosen in the Northern Ohio region. The focus of this study was to explore why that fire department did not have a wellness program.

Participants

The researcher interviewed a selection of fire department members. The research sample size was determined by Patton's "Maximum variation (heterogeneity) sampling". This sample methodology focused on capturing and describing the central themes between diverse groups (Patton, 2002). Specific to this study was the rank structure of the fire department. Members at different ranks in this hierarchy had a diverse point of view but all of them have an impact on the fire department. For example, fire chief likely views an issue differently than a captain, who views it differently than an entry-level firefighter. Therefore, it was pertinent to this research to identify the central theme between these three diverse ranks: high management (chief level), middle management

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

(captain/lieutenant), and entry-level employee (probationary firefighter). The researcher interviewed three individuals chosen by the chief of one fire department.

Protocol

Data was obtained by conducting a one-on-one interview with an individual from management, an individual from middle management, and an employee with less than two years of experience with this employer. Each interview followed a specific list of questions found in Appendix A and the interview style was a standardized open-ended interview as defined by Patton (Patton, 2002). The interviewee had to agree to the informed consent found in Appendix B. The interviewer and interviewee discussed any questions about the informed consent. In addition, the fire department chief officer provided a letter of permission to interview the employees (Department Consent Request, Appendix C)

Collection and Analysis

The interviews were audio recorded with two recording devices and the researcher created hand written, detailed notes. Each audio interview was transcribed into written notes. Analysis was performed on those transcriptions. The data received was used to explain why this department is not implementing a wellness program. The focus of the analysis discussed the similarities and differences between the ranks in the fire department, which by itself could be a reason for not implementing a wellness program. For publication, any identifying information was redacted to prevent the identification of the individuals involved.

Research Limitations

This research is not without limitation. This fire department is small, which limited the sample population. Additionally, this study did not include a quantitative component. A quantitative component could have identified how prevalent these issues are in other departments.

Bias could also affect this research. The researcher works for the fire department studied and witnessed first-hand issues discussed by the participants. The researcher knew before the study was initiated that the fire department did not maintain its prior wellness program that failed. Moreover, the researcher was not employed at this department during its prior attempt to establish a wellness program.

The collected data was triangulated to increase validity of this study and to reduce bias (Yin, 2013). First, the researcher used an open-ended questionnaire. Second, the researcher used audio recording devices to obtain the questionnaire answers and created detailed notes during the interviews. Third, the data was presented to a committee of three unbiased professors with backgrounds in different areas of graduate level academia.

CHAPTER IV

RESEARCH FINDINGS

The intent of this project was to explore why this fire department is not participating in a wellness program. To explore this question, three members from a single fire department at three different positions in the fire department rank structure were interviewed. Interviews consisted of an entry-level firefighter, middle management firefighter, and a high management chief level officer. The results showed similarities and differences among the different research participants. Results also showed a communication breakdown between the different ranks. Transcripts from interviews are in Appendix F.

Between the three different ranks in the department, all agreed annual medical exams and fitness programs were beneficial and should be implemented. Generally, all agreed that cardiovascular emergencies were the leading cause of line of duty deaths. With regard medical exams, all research participants agreed that there is a need for regular medical exams and fitness analysis. This is in line with their belief that there is a high risk for cardiovascular emergencies. The research participants agreed that medical exams have the possibility to catch “a medical condition that could lead to your death”.

Fitness exams are also an important component because firefighting is a physically demanding job. From a management perspective, fit firefighters are more useful than unfit firefighters. The research participant from high management gave an example of self-contained breathing apparatus (SCBA) air usage at a fire. He described that a fit firefighter can work longer on one cylinder of air than the firefighter's unfit counterpart. This department is forced to work with limited staffing so after consuming

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

an SCBA air cylinder there is limited time to change the empty air cylinder or for a firefighter to rest at a fire.

From a firefighter and middle management perspective, both ranks focus on the ability to do the job. The middle-management research participant reported that firefighters unable to do the job place their coworkers in potentially dangerous and life threatening positions. The entry-level research participant discussed that since there is an expectation of fitness when a firefighter is hired, that expectation should remain since the "...job is the same and you have to be able to perform."

All participants also agreed that mental health is a concern that should be a part of a fire department wellness program. The entry-level research participant agreed in part saying firefighters should have the opportunity "to talk to someone" and "we are own worst enemy" [sic]. The other two research participants agreed completely with the idea that mental health concerns and treatment are important. The high-management research participant said, "we see what people shouldn't see" and the middle-management research participant said, "[I] truly believe that mental [exams] go right along with yearly physicals." This indicates that representatives of a fire department's high and middle management support mental health exams.

The literature indicated a strong need for wellness programs. All participants agreed that different parts of wellness programs are beneficial and should be implemented. Even though personnel support active wellness programs, none exist.

CHAPTER V

DISCUSSION

Comparing these three interviews, it is evident that a communication breakdown exists. According to the high management research participant, annual medical exams and regular physical fitness are required. This is unbeknownst to the lower ranks in middle management and entry-level. The middle management research participant pointed out that an entire wellness program was implemented approximately three to four years ago. The question focuses on why the department's wellness program failed to continue.

An all-encompassing wellness program requires multiple resources. Medical exams require, but are not limited to, physicians, labs, and radiologists. Fitness exams and programs require physical fitness experts and professionals. Mental health treatment and counseling require trained counselors and psychiatrists. All of these professionals have a cost associated with their services. With everything combined, it is likely a wellness program is very expensive to initiate and maintain.

It would be easily understood if a wellness program was not possible because of cost and budget concerns. The high management research participant stated this is not the case based on high management's clear answer "It is not financial..." The research participants suggested that "failure to follow through on programs" are road blocks throughout the department. As discussed during the middle management research participant interview, the department previously had a wellness program. The department was able to initiate the program; however, it was not maintained. Additionally, the high management research participant clearly stated that follow-through

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

is the difficult part for a wellness program. The entry level research participant suggested that program success is dependent on leadership both from the administration and young company officers.

Previously, wellness program participation was voluntary. The research participants said that the program must be mandatory to be successful. The middle-management research participant brought up an interesting and important point. Making a program mandatory will cause tension with those who "...do not feel like they should be told what to do..." but yet these same people likely will not participate in an optional program. It is possible that these same problematic people are the "bad attitudes" discussed by the entry-level research participant.

Recommendations

During the interview process, it became evident that this department once had a wellness program that failed to continue. It appeared from talking with the research participants there is a strong failure to maintain within this department. Having a successful wellness programs is dependent on fixing three concerning facts.

Communication breakdown. During the interviews, it was apparent that a communication breakdown exists. This breakdown prohibits information to flow from superiors to subordinates and vice-versa. As discussed in the literature review, Mattke et al. (2013) stated effective communication is key to wellness program initiation. The proposed solution to this communication breakdown is to develop effective communications. Department meetings could fix this communication gap. These meetings will assure everyone not only knows about the wellness program but also knows how to access components of the wellness program. Additionally, during these

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

meetings, new ideas and policies can be introduced before they are implemented giving everyone time to prepare.

Failure of previous wellness program. A feeling of inability to follow-through was felt during the interviews. To solve this, a system of benchmarks should be implemented during the development of the wellness program as recommended by the *Wellness-Fitness Initiative* (WFI). The WFI described a way to collect data and establish benchmarks after the program implementation. After each benchmark is met, the successes and failures of the program must be discussed. This can be done at regular monthly meetings.

During interviews with the middle management and high management research participants, it was revealed that the previous wellness program failed because the individual who was tracking the fitness program left the department. The wellness program enjoyed good participation while that person was in charge. To enhance the success of a new wellness program it is recommended to once again have someone in charge of the fitness program. This person should be trained in all aspects of wellness such as physical fitness and medical and mental health. With physical fitness, programs should be developed to teach proper workouts and recommend healthy activities to members of the department. In cases involving medical and mental health, firefighters will be referred as needed. This position could be a member of middle management and have other responsibilities outside of the wellness program. It is critically important that this person has specific training in the aforementioned areas. Without specific training, this position will not be effective and therefore program success is not guaranteed.

Department participation. Participation can be either voluntary or mandatory and fire administration needs to discuss which will likely succeed. Wellness programs focus on improving the well-being of all employees within a fire department. Requiring participation in a wellness program will assure 100% compliance. The majority of workplace wellness programs focus on reward type incentives instead of penalty type incentives (Mattke, et al., 2013). Fire department administrative reward incentives will help alleviate ill feelings resulting from a mandatory wellness program. For example, if a firefighter meets a set goal, he or she receives an incentive. These incentives can include monetary bonuses or extra paid time off. A mandatory wellness program is much more likely to succeed from using incentives to motivate the firefighters to excel.

Future Research

Further research should focus on how many departments face these same issues. Additionally, future research can explore solutions departments may try to ensure their wellness programs succeed.

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

REFERENCES

- Baicker, K., Cutler, D., & Song, Z. (2010). Workplace Wellness Programs Can Generate Savings. *Heath Affairs* .
- Bledsoe, B. E., Porter, R. S., & Cherry, R. A. (2009). *Paramedic Care Principles and Practice* (Third Edition ed., Vol. I). Upper Saddle River, New Jersey: Pearson Prentice Hall.
- Centers for Disease Control and Prevention. (2014). *Adult Obesity Facts*. Retrieved April 27, 2014, from Centers for Disease Control and Prevention:
<http://www.cdc.gov/obesity/data/adult.html>
- Creswell, J. W. (1994). *Research Design Qualitative & Quantitative Approaches*. Thousand Oaks, California: Sage Publications Inc.
- DeWine, M. (2012). Opinion No. 2012-003.
- Dill, J. (2014). *Firefighter Behavioral Health Alliance*. Retrieved May 5, 2014, from
http://ffbha.org/FBHA_Page.php
- Elpidoforos, S. S., Hauser, R., Kawachi, I., Christiani, D. C., & Kales, S. N. (2008, January 18). Obesity and Risk of Job Disability in Male Firefighters. *Occupational Medicine* ,245-250.
- Gebhardt, D., & Crump, C. (1990). Employee Fitness and Wellness Programs in the Workplace. *American Psychologist* .
- Haddock, C. K., Poston, W., & Jahnke, S. (2011). Addressing the Epidemic of Obesity in the United States Fire Service. *National Volunteer Fire Council* .
- International Association of Firefighters. (2008). *The Fire Service Joint Labor Management Wellness-Fitness Initiative* (Third Edition ed.).

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

International Fire Service Training Association. (2008). *Essentials of Fire Fighting and Fire Department Operations* (5th Edition ed.). Upper Saddle River, New Jersey:

Brady.

Mattke, S., Liu, H., Caloyeras, J., Huang, C., Van Busum, K., Khodyakov, D., et al.

(2013). *Workplace Wellness Programs Study*. Santa Monica, CA: RAND

Corporation.

Medeiros, M. (2008). 10 Steps for Ensuring Successful Health and Wellness Programs.

FireRescue1 News .

Murphy, B. (2014). Firefighter Mental Health: Helping Your Own. *Fire Department*

Insutrcutor Conference.

National Fire Protection Association. (2013). Comprehensive Occupational Medical

Program for Fire Departments. *NFPA 1582* .

Norwood, P., & Rascati, J. (2012). Recognizing and Combating Firefighter Stress. *Fire*

Engineering .

Patton, M. Q. (2002). *Qualitative Research & Evaluations Methods*. Thousand Oaks:

Sage Publications.

Rogers, P. (2014, May 7). Firefighters Address Alarming Suicide Rates.

NBCChicago.com .

The American Institute of Stress. (2014). Retrieved April 27, 2013, from

<http://www.stress.org>

United States Fire Administration. (2013). Firefighter Fatalities in the United States in

2012. *U.S. Fire Administration* .

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

Yin, R.K. (2013). *Case study research: Design and methods* (5th ed.). Thousand Oaks, CA: Sage

Appendix A:

Interview Introduction and Questions

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

Firefighter Occupational Wellness

Interview Introduction and Questions

Thank you for agreeing to take part in this masters thesis research study in the Safety, Security, and Emergency Management program at Eastern Kentucky University. I will ask you a series of questions to facilitate a discussion on fire department participation in occupational wellness programs. This interview will be recorded and the recording transcribed; however, your identity will remain anonymous in reporting the results of this study. This document signed by the researcher outlines the protection agreement stating that your identity will not be released and there are no risks to you for taking part in this study. Further, at any time if you wish to no longer take part in this interview, you only need to tell the researcher and the interview will be stopped immediately and the data discarded. Please read over this agreement, you may keep it for your records. Do you have any questions before we begin?

Please sign a copy of the informed consent. You may keep a copy for your records.

Interview questions:

1. Do you agree to the terms of this study and agree to take part in this interview?
2. What do you view as the predominant cause of firefighter line of duty deaths?
3. From question #2 why do you view that as the predominant cause of firefighter line of duty deaths?
4. Are firefighters in your fire department required to undergo annual medical/fitness exams?

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

5. In your opinion, should firefighters in your department have annual medical exams?
6. In your opinion, should firefighters in your department have fitness analyses?
7. In your opinion, should firefighters in your department have mental health analyses?
8. Are you familiar with the International Association of Firefighters and International Association of Fire Chiefs joint Wellness/Fitness Initiative?
9. Why or why not would your fire department benefit from a comprehensive wellness program?
10. What limitations do you see with your fire department implementing such a plan?
11. Who would be the best advocate for instituting a wellness program?
12. Is it better to make wellness programs mandatory or optional? What difference will it make in firefighter participation in the program?

Appendix B:

Interviewer/Interviewee Informed Consent and Confidentiality Agreement

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

Firefighter Occupational Wellness Interviewer/Interviewee Informed Consent and Confidentiality Agreement

To Whom It May Concern:

A qualitative study is being conducted to assess occupational wellness in the fire service. In this study, three members will be asked to participate in an interview. Your participation should take about thirty (30) minutes.

There are no risks to you or your organization. Any identifying material will be removed or redacted and will not be released. Every attempt will be made to assure that the interview with each individual occurs in a secure manor to prevent the identification of the participating members.

All information will be handled in a strictly confidential manner so that no one will be able to identify you, the organization, or the participants when the results are reported.

Participation of your organization and the interviewee is voluntary, and you may withdraw at any time without negative consequences. If the organization wishes to withdrawal at any time or an interviewee wishes to withdrawal, they may do so by contacting me during the interview, via telephone, or via e-mail (my contact information is below).

Please feel free to contact me if you have any questions. Also below is contact information for Eastern Kentucky University, the thesis coordinator, and the committee chair for this project.

I understand the study described above and have been given a copy of this agreement. I am 18 years of age or older and I agree to participate.

Signature of Participant

Signature of Researcher
Conner O'Halloran, Principle Investigator
Conner_ohalloran@mymail.eku.edu
(330) 559-4991

Francis J. Deleonibus, EdD Chief Faculty Advisor
Francis.Deleonibus@eku.edu
(412) 726-5140

Sarah Morris, Thesis Coordinator
Sarah.morris@eku.edu

Appendix C:

Department Consent Request

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

Firefighter Occupational Wellness Department Consent Request

Dear Chief:

A qualitative study is being conducted to assess occupational wellness in the fire service. In this study, three members will be asked to participate in an interview. Each individual's participation should take about thirty (30) minutes.

I am requesting your permission to conduct this study with your organization. I am also requesting three individuals to interview. I am looking to interview a representative from the administration, a representative from middle management, and a new employee (less than one year of employment). Please, on department letterhead, provide a letter of consent and three employees who meet the aforementioned requirement to participate in the interview.

There are no risks to you or your organization. Any identifying material will be removed or redacted and will not be released. Every attempt will be made to assure that the interview with each individual occurs in a secure manor to prevent the identification of the participating members. All information will be handled in a strictly confidential manner and no one will be able to identify you, the organization, or the participants when the results are reported.

Your organization's participation and each individual interviewed in this study are voluntary and you may withdraw at any time without negative consequences. If the organization wishes to withdrawal at any time or an interviewee wishes to withdrawal, they may do so by contacting me during the interview, via telephone, or via e-mail (my contact information is below).

Please feel free to contact me if you have any questions. Also below is contact information for Eastern Kentucky University, the thesis coordinator, and the committee chair for this project.

Signature of Researcher
Conner O'Halloran, Principle Investigator
Conner_ohalloran@mymail.eku.edu
(330) 559-4991

Francis J. Deleonibus, EdD Chief Faculty Advisor
Francis.Deleonibus@eku.edu
(412) 726-5140

Sarah Morris, Thesis Coordinator
Sarah.morris@eku.edu
(859) 622-7991

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

Appendix D:

OSHA 1910.134 App C Questionnaire

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

RESPIRATOR MEDICAL EVALUATION QUESTIONNAIRE (MANDATORY)

EMPLOYEE: Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers. Your employer must tell you how to send or deliver this questionnaire to the health care professional who will review it.

Part A. Section 1. (Mandatory) Every employee selected to use any type of respirator must provide the following information (please print).

Date: _____

Name: _____

Job title: _____

Age: _____ Sex: M F Height: _____ Weight: _____

Phone number: () _____

A phone number where the health care professional can reach you (include the Area Code): () _____

The best time to phone you at this number: _____

Has your employer told you how to contact the health care professional who will review this questionnaire (check one)? Yes No

Check the type of respirator you will use (you can check more than one category):

- a. N, R, or P disposable respirator (filter-mask, non-cartridge type only).
- b. Other type (for example, half or full-face type, powered-air purifying, supplied-air, self-contained breathing apparatus).

Have you worn a respirator (check one)? Yes No

If "yes," what type(s)? _____

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

Part A. Section 2. (Mandatory) Every employee selected to use any type of respirator must answer questions 1 through 9 below (please check "yes" or "no").

1. Do you *currently* smoke tobacco, or have you smoked tobacco in the last month? Yes No

2. Have you *ever* had any of the following conditions?
 - a. Seizures Yes No
 - b. Diabetes Yes No
 - c. Allergic reactions that interfere with your breathing Yes No
 - d. Claustrophobia (fear of closed-in places) Yes No
 - e. Trouble smelling odors Yes No

3. Have you *ever* had any of the following pulmonary or lung problems?
 - a. Asbestosis Yes No
 - b. Silicosis Yes No
 - c. Asthma Yes No
 - d. Pneumothorax (collapsed lung) Yes No
 - e. Chronic bronchitis Yes No
 - f. Lung cancer Yes No
 - g. Emphysema Yes No
 - h. Broken ribs Yes No
 - i. Pneumonia Yes No
 - j. Any chest injuries or surgeries Yes No
 - k. Tuberculosis Yes No
 - l. Any other lung problem that you have been told about Yes No

4. Do you *currently* have any of the following symptoms of pulmonary or lung illness?
 - a. Shortness of breath Yes No
 - b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline Yes No
 - c. Shortness of breath when walking with other people at an ordinary pace on level ground Yes No
 - d. Have to stop for breath when walking at your own pace on level ground Yes No
 - e. Shortness of breath when washing or dressing yourself Yes No
 - f. Shortness of breath that interferes with your job Yes No
 - g. Coughing that produces phlegm (thick sputum) Yes No
 - h. Coughing that wakes you early in the morning Yes No
 - i. Coughing that occurs mostly when you are lying down Yes No
 - j. Coughing up blood in the last month Yes No
 - k. Wheezing Yes No
 - l. Wheezing that interferes with your job Yes No
 - m. Chest pain when you breathe deeply Yes No

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

- n. Any other symptoms that you think may be related to lung problems Yes No
5. Have you *ever* had any of the following cardiovascular or heart problems?
- a. Heart attack Yes No
 - b. Stroke Yes No
 - c. Angina Yes No
 - d. Heart failure Yes No
 - e. Swelling in your legs or feet (not caused by walking) Yes No
 - f. Heart arrhythmia (heart beating irregularly) Yes No
 - g. High blood pressure Yes No
 - h. Any other heart problems that you have been told about Yes No
6. Have you *ever* had any of the following cardiovascular or heart symptoms?
- a. Frequent pain or tightness in your chest Yes No
 - b. Pain or tightness in your chest during physical activity Yes No
 - c. Pain or tightness in your chest that interferes with your job Yes No
 - d. In the past 2 years, have you noticed your heart skipping or missing a beat Yes No
 - e. Heartburn or indigestion that is not related to eating Yes No
 - f. Any other symptoms that you think may be related to heart or circulation problems Yes No
7. Do you *currently* take medication for any of the following problems?
- a. Breathing or lung problems Yes No
 - b. Heart trouble Yes No
 - c. Blood pressure Yes No
 - d. Seizures Yes No
8. If you have used a respirator, have you *ever* had any of the following problems? (If you have *never* used a respirator continue to question 9)
- a. Eye irritation Yes No
 - b. Skin allergies or rashes Yes No
 - c. Anxiety Yes No
 - d. General weakness or fatigue Yes No
 - e. Any other problem that interferes with your use of a respirator Yes No
9. Would you like to discuss your answers with the health care professional who will review this questionnaire? Yes No

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

Questions 10 to 15 must be answered if you will use either a full-face respirator or a self-contained breathing apparatus (SCBA).

10. Have you ever lost vision in either eye temporarily or permanently? Yes No
11. Do you *currently* have any of the following vision problems?
- a. Wear contact lenses..... Yes No
 - b. Wear glasses..... Yes No
 - c. Color blind Yes No
 - d. Any other eye or vision problem Yes No
12. Have you *ever* had an injury to your ears, including a broken ear drum? Yes No
13. Do you *currently* have any of the following hearing problems?
- a. Difficulty hearing..... Yes No
 - b. Wear a hearing aid Yes No
 - c. Any other hearing or ear problem Yes No
14. Have you *ever* had a back injury?..... Yes No
15. Do you *currently* have any of the following musculoskeletal problems?
- a. Weakness in any of your arms, hands, legs, or feet..... Yes No
 - b. Back pain Yes No
 - c. Difficulty fully moving your arms and legs..... Yes No
 - d. Pain or stiffness when you lean forward or backward at the waist..... Yes No
 - e. Difficulty fully moving your head up or down..... Yes No
 - f. Difficulty fully moving your head side to side Yes No
 - g. Difficulty bending at your knees..... Yes No
 - h. Difficulty squatting to the ground..... Yes No
 - i. Climbing a flight of stairs or a ladder carrying more than 25 pounds ... Yes No
 - j. Any other muscle or skeletal problem that interferes with using a respirator Yes No

Part B. Section 1. The health care professional who will review this questionnaire may add these questions and any other questions not listed at their discretion.

1. In your present job are you working at high altitudes (over 5,000 feet) or in a place that has lower than normal amounts of oxygen? Yes No
If "yes", do you have feelings of dizziness, shortness of breath, pounding in your chest, or other symptoms when you are working under these condition? Yes No
2. At work or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g., gases, fumes, or dust), or have you come into skin contact with hazardous chemicals? Yes No

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

3. Have you ever worked with any of the materials, or under any of the conditions listed below:

- a. Asbestos Yes No
- b. Coal (for example, mining)..... Yes No
- c. Silica (e.g., sandblasting) Yes No
- d. Iron Yes No
- e. Tungsten/cobalt (grinding or welding this material) Yes No
- f. Tin Yes No
- g. Dusty environments Yes No
- h. Beryllium Yes No
- i. Any other hazardous exposures Yes No
- j. Aluminum Yes No

If "yes," describe these exposures:

4. List any second jobs or side businesses you have:

5. List your previous occupations:

6. List your current and previous hobbies:

7. Were you ever in the military services? Yes No
If "yes" were you exposed to biological or chemical agents
(either in training or combat)? Yes No

8. Have you ever worked on a HAZMAT team? Yes No

9. Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications)? Yes No

If "yes," name the medications if you know them:

Part B. Section 2. Supplemental information for the health care professional filled out by the employer.

10. Will the employee use any of the following items with your respirator(s)?
- a. HEPA filters Yes No
 - b. Canisters (i.e., gas masks) Yes No
 - c. Cartridges Yes No

11. How often will the employee use the respirator(s)? (Mark "yes" or "no" for all answers that apply.)
- a. Escape only (no rescue) Yes No
 - b. Less than 2 hrs. per day Yes No
 - c. Emergency rescue only Yes No
 - d. 2 to 4 hrs. per day Yes No
 - e. Less than 5 hrs. per week Yes No
 - f. Over 4 hrs. per day Yes No

12. When the employee uses the respirator(s), is their work effort:
- a. Light (less than 200 kcal per hour): Yes No
- If "yes," how long does this period last during the average shift?
 hrs. _____ mins. _____

Examples of light work effort are sitting while writing, typing, drafting, or performing light assembly work; or standing while controlling machines.

- b. Moderate (200 to 350 kcal per hour): Yes No
- If "yes," how long does this period last during the average shift?
 hrs. _____ mins. _____

Examples of moderate work effort are sitting while nailing or filing; driving a truck, drilling, nailing, performing assembly work, or transferring a moderate load (about 35 pounds) at trunk level; walking on a level surface about 2 mph or down a 5 degree grade about 3 mph; or pushing a wheelbarrow with a heavy load (about 100 pounds) on a level surface.

- c. Heavy (above 350 kcal per hour): Yes No
- If "yes," how long does this period last during the average shift?
 hrs. _____ mins. _____

Examples of heavy work are lifting a heavy load (about 50 pounds) from the floor to your waist or shoulder; working on a loading dock; shoveling; standing while bricklaying or chipping castings; walking up an 8 degree grade about 2 mph, climbing stairs with a heavy load (about 50 pounds).

13. Will the employee wear protective clothing and/or equipment (other than the respirator) when using their respirator? Yes No

If "yes," describe this protective clothing and/or equipment:

14. Will they be working in hot conditions (temperature more than 77 degrees F)? ... Yes No

15. Will they be working in humid conditions?..... Yes No

16. Describe the work they will be doing while using their respirator(s):

17. Describe any special or hazardous conditions they might encounter when using a respirator(s) (for example, confined spaces, life threatening gases):

18. Provide the following information, if you know it, for each toxic substance that they will be exposed to when using their respirator(s):

Name of the first toxic substance: _____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____

Name of the second toxic substance: _____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____

Name of the third toxic substance: _____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____

Name of any other toxic substances that they will be exposed to while using a respirator:

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS
PROGRAMS

19. Describe any special responsibilities they will have while using their respirator(s) that may affect the safety and well-being of others (i.e., rescue, security):
-

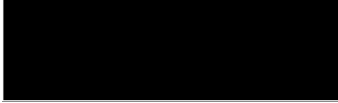
A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS
PROGRAMS

Appendix E:
Notice of IRB Exemption Status

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS



□
□
□
□
□



□
□

NOTICE OF IRB EXEMPTION STATUS

Protocol Number: 15-101

Institutional Review Board IRB00002836, DHHS FWA00003332

□

Principal Investigator: **Conner D'Halloran** Faculty Advisor: **Dr. Sarah Morris** □

□

Project Title: **Firefighter Occupational Wellness**

□

Exemption Date: **11/18/14** □

□ □ □

Approved by: **Dr. Jada Slusher, IRB Chair**

□

This document confirms that the Institutional Review Board (IRB) has granted exempt status for the above-referenced research project as outlined in the application submitted for IRB review with an immediate effective date. Exempt status means that your research is exempt from further review for a period of three years from the original notification date. No changes are made to the original protocol. If you plan to continue the project beyond three years, you are required to reapply for exemption.

□

Principal Investigator Responsibilities: It is the responsibility of the principal investigator to ensure that all investigators and staff associated with this study meet the training requirements for conducting research involving human subjects and follow the approved protocol.

□

Adverse Events: Any adverse or unexpected events that occur in conjunction with this study must be reported to the IRB within ten calendar days of the occurrence.

□

Changes to Approved Research Protocol: If changes to the approved research protocol become necessary, a description of those changes must be submitted for IRB review and approval prior to implementation. If the changes result in a change in your project's exempt status, you will be required to submit an application for expedited or full IRB review. Changes include, but are not limited to, those involving study personnel, subjects, and procedures.

□

Other Provisions of Approval, if applicable: None

□

Please contact Sponsored Programs at 359-622-3636 or send email to liffany.hamblin@eku.edu or isa.royalty@eku.edu with questions.



Eastern Kentucky University is an Equal Opportunity/Affirmative Action Employer and Educational Institution

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS
PROGRAMS

Appendix F:
Interview Transcripts

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS
PROGRAMS

Interview Transcripts

Entry-Level Participant

Q1: Do you agree to the terms of this study and agree to take part in this interview?

A: Yes.

Q2: What do you view as the predominant cause of firefighter line of duty deaths?

A: Heart attacks, car accidents. Inexperience, deaths related to inexperience. Fire scene accidents specific to structural firefighting.

Q3: Why do you view that as the predominant cause of firefighter line of duty deaths?

A: Heart attacks, as you progress through the fire service, you [become] not as committed to your health as you should. Hours [worked] and stress of the job play a factor. Sleep and erratic schedule plays in. Complacency.

Q4: Are firefighters in your department required to undergo annual medical/fitness exams?

A: Not that I am aware of.

Q5: In your opinion, should firefighters in your department have annual medical exams?

A: Absolutely. Why? It is for your own safety. [It] gives you the opportunity to catch a medical condition that could lead to your death and potentially the death of those you work with or you are helping.

Q6: In your opinion, should firefighters in your department have fitness analyses?

A: Yes, absolutely. This is a physically demanding job. [If] there is an entry level expectation of fitness there should be the same expectation as you go on.

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

Granted, typically as you progress in a career perhaps there is less of a physical demand. Ultimately your job is the same and you have to be able to perform. [From a] leadership perspective, new guys, if they see their officers and senior officers maintaining their fitness and eating healthy, that also effects how the new hires function.

Q7: In your opinion, should firefighters in your department have mental health analyses?

A: I don't think there should be an exam; I think you [should] have the opportunity for the chance to talk to someone. We are our own worse enemy [sic]. [We are] not always the best judge of what we need. Putting someone in the situation where [mental health support] is there [it] could lead to more opportunities.

Q8: Are you familiar with the International Association of Firefighters and International Association of Fire Chiefs Joint Wellness/Fitness Initiative?

A: No

Q9: Why or why not would your fire department benefit from a comprehensive wellness program?

A: We would [benefit]. We would need leadership to make it happen, if it does not start at the top it's not going to work.

Q10: What limitations do you see with your fire department implementing such a plan?

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

A: People who have a bad attitude [by] saying we don't need it. It must occur from the leadership down. [This change would be a] cultural change.

Q11: Who would be the best advocate for instituting a wellness program?

A: The new guys and the young officers

Q12: Is it better to make wellness programs mandatory or optional? What difference will it make in firefighter participation in the program?

A: Portions of it need to be mandatory, [the] physical fitness portions. Nutrition, maybe mental health, I don't know [how to] force people to do that. If the culture changes a little bit that will lend itself to the successful program. I do not think you can force people to change their attitudes or live a certain way. [With] making it mandatory, I don't know if it would do anything.

Middle-Management Participant

Q1: Do you agree to the terms of this study and agree to take part in this interview?

A: Yes

Q2: What do you view as the predominate cause of firefighter line of duty deaths?

A: Lack of training, lack of physical fitness and yearly physicals, lack of staffing, lack of adequate management.

Q3: Why do you view that as the predominant cause of firefighter line of duty deaths?

A: Physicals play directly into the physical fitness. Just like Firefighter Smith's¹ point of view, maybe if he had a stress test that could have pick[ed] up on his preexisting coronary issue. Staffing, the first thing that gets cut is staffing

¹ This firefighter had a heart attack about two weeks before this interview while functioning on an emergency scene. Firefighter Smith is a pseudonym.

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

which puts increased stress on all individuals. This forces staff to do a lot more with a lot less people. Doing several tasks with one crew or one person.

Q4: Are firefighters in your fire department required to undergo annual medical/fitness exams?

A: They were required but have not been done over the past three years. It is in the regulations but they have not been done in three years.

Q5: In your opinion, should firefighters in your department have annual medical exams?

A: Yes, discussed earlier.

Q6: In your opinion, should firefighters in your department have fitness analyses?

A: Certainly, if you have an individual who can't lift or walk on a treadmill for five minutes, they could get themselves into a situation or someone else into a situation at a fire inside of a building. This could identify if they are unable to do their job.

Q7: In your opinion, should firefighters in your department have mental health analyses?

A: Certainly, in general there is a [mental health] concern. For what we do and what we see, [there] are very little outs for people to talk to people, unable to get things off their chest. I keep things internal and things catch up to me with physical symptoms. [I] truly believe that mental [exams] goes right along with yearly physicals. They (the firefighters) should have the ability to talk to

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

someone once a year. If someone needs to talk to someone more than once a year it should be paid for by the department.

Q8: Are you familiar with the International Association of Firefighters and International Association of Fire Chiefs Joint Wellness/Fitness Initiative?

A: Yes, [this was] one thing that was started. Two personnel got their physical fitness instructor. [The] program started and fell off.

Q9: Why or why not would your fire department benefit from a comprehensive wellness program?

A: Yes it would benefit, in fact it did three years ago. Wellness program was actually started [sic]. We worked out as a group two or three times a week. We got good ideas about eating healthier. This was an excellent thing we are no longer doing.

Q10: What limitations do you see with your fire department implementing such a plan?

A: Reasons the program failed are limitations. One individual who was a big help to the program left the department. Just like anything else, we start a project and it (the project) goes by the waist side [sic]. Lack of personnel, we need more people to take charge of [the] different things we start.

Q11: Who would be the best advocate for instituting a wellness program?

A: [It] starts at the top. Everyone must be on board. [There should be] a designated position who is a fitness trainer.

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

Q12: Is it better to make wellness programs mandatory or option? What difference will it make in firefighter participation in the program?

A: With mandatory, some people do not feel like they should be told what to do but if it's optional, those same people probably will not do it. It needs to be a mandatory, contractual thing. During yearly fitness exams, if someone hits a mark, there should be a contractual incentive for that (comp time, eight hours paid, etc).

High-Management Participant

Q1: Do you agree to the terms of this study and agree to take part in this interview?

A: Yes

Q2: What do you view as the predominant cause of firefighter line of duty deaths?

A: Too many fat firemen. Heart attacks, strokes, [too much] fast food, too many jobs, high stress.

Q3: Why do you view that as the predominant cause of firefighter line of duty deaths?

A: Stress, drinking [alcohol], [working] multiple jobs. Not working out, lack of physical fitness.

Q4: Are firefighters in your fire department required to undergo annual medical/fitness exams?

A: Yes, annual[ly] on their birthday. It includes [a] chest x-ray, physical [exam], and EKG (electrocardiogram).

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

Q5: In your opinion, should firefighters in your department have annual medical exams?

A: Yes, but it should be more in-depth. It should include cancer screenings and prostate exams.

Q6: In your opinion, should firefighters in your department have fitness analyses?

A: Fitness analyses once a year. Mandatory fitness, everyone should have to work out. [Fitness causes] less injuries for the fire department, less when you are in shape. [There is] more production from personnel who are in-shape. A guy who is in-shape can go through one bottle less quick than someone who is not [in-shape], especially with limited staffing. The body is not as stressed [when in shape].

Q7: In your opinion, should firefighters in your department have mental health analyses?

A: Absolutely, we will never say if we have mental symptoms. There was two [suicides] yesterday in Florida on two separate departments. We see what people shouldn't see and we just blow it off.

Q8: Are you familiar with the International Association of Firefighters and International Association of Fire Chiefs Wellness/Fitness Initiative?

A: Yes, [I] took the forty-hour class.

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

Q9: Why or why not would your fire department benefit from a comprehensive wellness program?

A: Yes absolutely [would we benefit]. Their (the wellness initiative) is it's not mandatory but people will not do it if it is not mandatory. [There] needs to be something that we do all the time for everyone.

Q10: What limitations do you see with your fire department implementing such a plan?

A: If not financial, I would say [sic]. Overall participation [is a limitation]. Having more trainers, someone on each shift [would help], someone to oversee day to day operations when we [chiefs] are not here. Putting the plan together is the easy part, follow-through would be the tough part.

Q11: Who would be the best advocate for instituting a wellness program?

A: Firefighter level people are. If you see someone doing it, you're going to do it. When we s[aw] people working out regularly, we had more people working out. If your partner works out, everyone eventually will work out during that shift.

Q12: Is it better to make the wellness programs mandatory or optional? What difference will it make in firefighter participation in the program?

A: Should be mandatory, everyone should do it. Everyone is under the same stress and workload so we all should be working out.

A CAREER FIRE DEPARTMENT'S PARTICIPATION IN WELLNESS PROGRAMS

Vita

Conner T. O'Halloran was born in Youngstown, Ohio. He graduated with honors from Boardman High School in Boardman, Ohio in 2008. In the summer of 2008, Conner obtained his EMT-Basic certification from Youngstown State University. That fall, Conner attended Eastern Michigan University on a varsity swimming scholarship with a major of public safety administration. After a year, Conner transferred back to Youngstown State University to complete the paramedic program.

In 2011 Conner completed his Associate of Applied Science in Emergency Medical Technology. The following year, Conner graduated from Youngstown State University (YSU) with a Bachelor of Science in Applied Science in Allied Health. Throughout his time at YSU, Conner became a certified level II firefighter for the state of Ohio and a nationally registered and state certified paramedic. During the completion of his bachelor's degree, Conner was hired full time as a firefighter paramedic with a career fire department in Ohio.

During his time at this fire department, Conner completed multiple management classes from the Ohio Fire Chiefs Association such as Fire Officer levels I and II, and Maxwell's 21 Irrefutable Laws of Leadership. Conner also became a certified fire safety inspector, EMS instructor, and fire instructor.

Conner enrolled in Eastern Kentucky University's Master of Science program studying Safety, Security, and Emergency Management with a concentration in Fire and Emergency Service. In August of 2013, Conner finished his graduate level certification in Fire and Emergency Service.