

**A Look into Firefighter Burnout and Wellbeing from the Impacts of Excessive Overtime in  
the Winston-Salem Fire Department.**

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### **Abstract**

This qualitative study aims to examine the impact of excessive overtime on firefighters within the Winston-Salem Fire Department, focusing on mental and physical health. The research aims to better understand the correlation between overtime and burnout levels among firefighters, the influence of overtime on sick time usage, and the impacts on health and well-being from excessive overtime. The study seeks to better understand the effect of burnout by reviewing existing literature and conducting interviews with firefighters who worked the most and least overtime in the previous calendar year. The purpose is to highlight the challenges posed by the department's staffing model, emphasizing the negative impacts of excessive overtime on firefighter health and well-being. By examining the mentioned issues, the study aims to contribute to developing strategies for improving the overall health and resiliency of firefighters within the Winston-Salem Fire Department.

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## CHAPTER 1. INTRODUCTION

The Winston-Salem Fire Department is an “All-hazard” response agency that serves a population of 253,000 in 134 square miles. The department has 393 employees, with 377 on the frontline responding to emergencies. The department responds to over 32,000 calls for service out of a total of twenty fire stations. The department has three shifts with four battalions. Each battalion has a chief overseeing their respective battalion. Within the four battalions are eighteen engine companies, six ladder companies, a heavy rescue company, a hazardous material team, and a shift safety officer.

When the department is fully staffed, there are 115 firefighters on each shift. The daily minimum staffing number is 89. When the staffing levels fall below this number, this triggers the need to supplement staffing with the use of overtime. The battalion chiefs manage the daily staffing levels and often do so with overtime. Overtime is mostly voluntary, but mandatory overtime is utilized when needed. The current overtime policy does not allow firefighters to work more than 72 hours consecutive. There are instances of excessive overtime being worked by many firefighters, and the health impacts from the excessive overtime have yet to be explored.

Burnout can result in many health-related concerns. The range can be from elevated lipid levels and inflammation within the body to negatively impacting sleep. Firefighters who continue to work excessive overtime can have multiple days of impacted sleep patterns. Sleep interruption can occur from multiple shifts worked and calls for service during night hours. A better understanding of burnout among firefighters is needed to improve policy and firefighter health and wellness.

## Background

Winston-Salem firefighters face a multitude of stressors that can negatively impact their physical and mental health. Burnout in firefighters can become a significant problem when identified stressors are poorly managed. Burnout in the workforce is a top concern among fire departments nationwide. The issue has become more prominent within the fire service as fire departments struggle to recruit and retain firefighters. Burnout is the culmination of stressors that are poorly managed in individuals. The stress can be poorly managed by the individual or the employer failing to provide avenues to manage the stressors—the impacts of burnout can be linked to poor health and sleep.

Concerning health, burnout has a negative impact on many of the body's systems. Melamed et al. (2006) mention various health impacts ranging from inflammation to increased lipid levels. Without understanding and a better way to manage the stressors causing burnout potentially including a better staffing model, the stress can continue to decrease health among employees and can further impact the organization according to (Shirom & Toker, 2006).

With ongoing focus shifting across the country to mental health, the same attention is becoming more common in the fire service. Leaders in the fire service research are researching stress, burnout, and other mental health-focused information. The research attention involving burnout in firefighters has occurred in other countries such as Russia and Vietnam. While the fire service can have the same mission focus in other parts of the country, the cultural differences among the nations present a need for more research to be completed in America on firefighter burnout.

In an attempt to understand burnout among Winston-Salem firefighters, this research was developed to explore how burnout impacts an organization's employees and understand the

health impacts of burnout through reviewing previous written literature. Winston-Salem Fire Department will be used for this research by looking at the top five individuals who work overtime and the top five participants who work the least amount of overtime. The qualitative analysis will be completed through interviews to understand if burnout is related to the stressors of the job.

The main objective of this research was to explore burnout in the Winston-Salem Fire Department. The basis of the need was the continual need for overtime and the amount of overtime individuals are working. To enhance the abilities of the organization to better care and provide for its employees, the information can aid in decision-making on a possible better staffing model.

### **Significance of the Study**

Multiple studies have found burnout has a negative impact on employee performance and health. Different studies have examined the impacts of overtime and excessive overtime in many different professions, but rarely are firefighters one of them. The Winston-Salem Fire Department has found daily staffing a continuous challenge to maintain. While multiple factors impact the daily staffing maintenance, the impacts of excessive overtime many of the firefighters are working have yet to be explored.

The first step to addressing burnout is to identify if burnout is a problem among the Winston-Salem Firefighters. Winston-Salem Fire Department has gone from a department where staffing was maintained, and overtime was rare to one where it is rare not to have a firefighter working overtime. The need to address excessive and consecutive worked hours is the first initiative in the health and wellness discussion in the Center for Public Safety Excellence 21<sup>st</sup> Century Fire and Emergency Service Whitepaper (Center for Public Safety Excellence, 2021).

Researching if burnout is a problem among the firefighters working the least and most overtime can also provide a possible insight into the impacts of excessive overtime. According to the *Executive Fire Officer Handbook, understanding the internal culture related to overtime and its impact* can aid in building a healthier and more resilient workforce (National Fire Academy, 2023). Firefighter burnout has never been researched within the Winston-Salem Fire Department and can be an insight into improving the health and wellness of the department's firefighters.

### **Problem Statement**

The problem is the staffing model in the Winston-Salem Fire Department and the excessive overtime some firefighter's work. In a recent study, firefighters who worked three consecutive 24-hour shifts per month had higher self-reported exhaustion on the Maslach Burnout Inventory (Luther et al., 2017). The health impacts that can be caused by burnout range from inflammation to increased lipid levels (Melamed et al., 2006). Winston-Salem Firefighters are found working one or two extra 24-hour shifts a week. This is an additional 24 to 48 hours on top of their regular 56-hour work week. In their literature, Liu et al. (2002) shared the more overtime worked, the less sleep and sleep quality an individual tends to have. The only current policy for firefighters working consecutive shifts states that firefighters are allowed to work up to 72 hours straight. While mandatory overtime periodically occurs to maintain adequate staffing levels, most overtime is voluntary. Failure of excessive overtime management threatens the mental and physical health of the firefighters of Winston-Salem.

### **Purpose Statement**

The purpose of this qualitative study is to explore firefighters in the Winston-Salem Fire Department working the most overtime for the current calendar year and the mental and/or physical impact of excessive overtime. The study also aims to better understand the health impacts of burnout in the literature review.

### **Research Question(s) or Hypothesis**

Through literature review and qualitative research, the following questions will be sought to be answered.

- 1) How does excessive overtime impact burnout levels among firefighters?
- 2) How has the overtime caused an increase in sick time usage?
- 3) Have there been any health and well-being impacts from excessive overtime?

### **Summary**

Chapter 1 introduces the Winston-Salem Fire Department, providing details on its structure, staffing levels, and the challenges associated with excessive overtime. The chapter emphasizes the potential health impacts of burnout, highlighting the range from elevated lipid levels to sleep disturbances. The background section discusses the stressors firefighters face and the growing concern about burnout in the workforce, particularly within the fire service. The research looks to explore burnout among Winston-Salem firefighters, focusing on the top individuals working the most and least overtime. The significance of the study lies in its potential to inform decision-making on staffing models and improve employee well-being.

The chapter underscores the gap in research on firefighter burnout in the context of excessive overtime, highlighting the need for a closer examination within the Winston-Salem Fire Department. The problem statement identifies excessive overtime as a significant issue

impacting firefighters' health. The purpose of the qualitative study is outlined, intending to explore the impact of excessive overtime on the well-being of firefighters. The research questions focus on understanding the relationship between excessive overtime and burnout levels, sick time usage, health and well-being impacts, and the role of sleep quality in firefighter burnout.

## **CHAPTER 2: LITERATURE REVIEW**

### **Introduction**

The following literature review explores the challenges firefighters face in their demanding profession, emphasizing the potential consequences of burnout. Firefighters contend with a relentless cycle of traumatic experiences, responding to diverse emergencies and continuously having to adapt to evolving protocols. This review delves into the multifaceted nature of burnout within the firefighting community, examining its prevalence, contributing factors, and implications. The literature review will seek insight into the unique stressors introduced by the COVID-19 pandemic, escalating call volumes, and administrative shifts that continue to strain mental health. Organizational stressors, including communication challenges, staffing shortages, and evolving technology, are identified as key contributors to burnout. The literature seeks to highlight the profound impact of burnout on firefighters' physical and mental health, with potential consequences ranging from cardiovascular issues to heightened susceptibility to mental health disorders.

### **Existing Literature**

The calls firefighters face daily can expose them to many traumatic experiences with little time to recover mentally or physically. A firefighter can respond to a community member's breathing problem at one moment, and the next moment they are rushing to pull someone's loved one out of a burning house. Each one of these events can be mentally tough to process, and sometimes they happen within minutes of each other, and the stress continues to build up.

Calls for service are not the only issues firefighters must respond to while on shift. Firefighters are held to a standard of completing hours of continued education and hands-on training to keep their certifications updated. Firefighters must also adapt to their administration's

ever-changing protocols and policies. Changes in regulations, protocols, and policies allow firefighters to serve their communities more efficiently and effectively. These changes can come from safety and medical protocol changes in practice. Fire departments must constantly review and assess to continuously improve service delivery and meet the needs of communities. With all the expectations on firefighters, burnout can occur if stressors are not organizationally managed. Burnout plagues the American fire service in numbers so great that it is higher than the public burnout (Smith et al. 2019).

### **Burnout**

The demand for firefighters has become overwhelming and possibly causing burnout to occur. The term burnout is best described by the World Health Organization (2019) as "a syndrome conceptualized as resulting from chronic stress in the workplace that an individual has not successfully managed" (para. 4). Burnout is characterized by three dimensions: feelings of "energy depletion or exhaustion, increased mental distance from one's job, or feelings of negativism or cynicism related to one's job, and reduced professional efficacy" (World Health Organization, 2019). Firefighters may put themselves at risk of harm because their focus and skills are not at the highest level due to burnout. The constant exposure to death or other traumatic incidents is only a small variable that plays a part in firefighter burnout. A recent study by Smith et al. (2019) shared:

"Firefighters must confront significant physical and psychological demands on an ongoing basis, and they must also cope with irregular work hours, high and unpredictable call volumes, time pressure, and expectation to perform flawlessly in situations regardless of the personnel and resources available."

Due to continuous service delivery, Firefighters continue to be exposed to this level of stressors without a means to cope.

### ***Burnout Through the Pandemic***

Considering the COVID pandemic, call volumes at fire services increased significantly. The increase is associated with most of today's medical calls for service being redirected from the Emergency Medical Service (EMS) departments to the fire departments, according to (Wright, 2021). While calls have been redirected to the fire departments, the day-to-day responsibilities have not been reduced. Firefighters must continue to complete training, keep the stations clean, keep an inventory of the addition of proper COVID-related PPE, and make sure all call records are accurately documented.

COVID's increased workload on the fire department increased the administration's awareness of the firefighters' mental stressors. The administration had to focus on the demands of COVID protocols, mask mandates, and staffing shortages. According to Goodman, French, & Mann (2020), employee assistance programs were overlooked, and peer support groups were pushed to the side because the added duties distracted the need. When mental health and coping with stress should be at the front of a chief officer's mind, oversight can occur due to the increased call volumes and reduced day-to-day tasks being completed.

### ***Organization Stressors***

Fire departments are expected to meet higher evidence-based standards but are not always provided with the appropriate resources. Technological advancements have led to the fire service becoming more data-driven. Fire departments are taking the data they receive and using it to analyze the needs and wants of the department, so firefighters have the staffing and equipment needed to assist their community. These data points are also compared to benchmark numbers set by the National Fire Protection Association (NFPA) that set a recommended

standard for call-processing times, turnout times, response times, and other metrics. Variables such as low staffing, large territories, station design, and individual burnout can negatively impact a department's ability to meet these metrics. Fire administration is tasked to focus on how their department compares to the metrics provided. If their stations are not meeting the benchmarks and standards, senior staff are charged with the additional work to determine why.

Directives from the Fire Chief and Town Administrators are communicated through meetings, emails, and policies. The increased communication can come from all directions to firefighters, and when not balanced or consistent, it can be overwhelming, causing stress on the employee (Griffin & Moorhead, 2014). The lack of positive or encouraging communication can make firefighters feel unappreciated for their current efforts, which adds to the stress and burnout.

Staffing shortages in many departments have also contributed to stressors on firefighters. Many senior firefighters have retired from the fire service, individuals who were burned out left the department, and there has been a decrease in recruitment. While scheduled retirement is a factor fire administration can gauge based on longevity and age, many firefighters elected for early retirement due to the added stress of the pandemic. Turnover in general is plaguing the fire service for various reasons. Fire Administrators reflect on the causes of high turnover burnout, pay, schedule, and the previous requirement of the COVID vaccination (World Health Organization, n.d.). Some of these causes can be prevented with internal administrative support, while others, such as schedule, are not as easy to change. Lastly, recruitment rates within the fire service have been lower over the past few years (Neal, 2017). This can be attributed to the loss of retirement benefits, risk of the job, and even pay. In an instance a department faces challenges in

recruiting enough personnel to address the vacancies arising from turnover and retirement, it can impose a strain or stress upon the individuals who persist in their roles.

Data metrics, communication, and staffing shortages can lead to burnout within the fire department. When burnout is poorly managed within an organization, the organization will find many negative impacts on its employees. The focus of burnout's effects for this research is looking at the firefighter's mental health and how it negatively influences one's mental health.

Burnout can affect all ranks, from the new hire to the senior firefighter. Everyone has their own tolerance level before reaching the actual burnout stage. Many believe that a firefighter with more tenure who has seen more traumatic incidents is likely to experience higher levels of burnout, but this is not always the case. The newly hired firefighter responding to their first incident and not mentally prepared may start to enter the burnout stage. A study in Russia observed firefighters and compared age and burnout in their firefighters. The study found that neither age nor time in service impacted the amount of burnout that a firefighter may face (Vinnikov et al., 2019).

The same study showed that poor communication within a fire organization was a statistically significant cause of burnout (Vinnikov et al., 2019). While trying to keep up with ever-changing technology, organizations attempt to improve their communication methods with their employees but struggle to communicate effectively. What fire administration may view as active and consistent communication can be considered useless or damaging to those receiving the communication. Understanding the organization and the human resource needs of the employees can assist in better communication.

## **Impact on Health**

Firefighting is a high-stress profession that comes with a multitude of health-related concerns. Burnout has many different health impacts on individuals, such as metabolic syndrome, hypercortisolism, inflammation, sleep disturbance, decreased immunity, blood coagulation, type 2 diabetes, cardiovascular disease, mental health disorder, reproductive issues, and many more health risks (Melamed, Shirom, & Toker, 2006). Three critical areas of discussion regarding the impact of burnout on firefighters are physical health, mental health, and quality of sleep. A firefighter needs to be aware of how their body responds to burnout. An organization can help improve its employee's health by understanding how to manage burnout.

### ***Mental Health***

One of a firefighter's most common symptoms when experiencing burnout is fatigue. This fatigue comes from sleepless nights running calls and having to resume everyday life once they clock out. Research has shown that low levels of sleep and feelings of fatigue are among the nine criteria for diagnosing depression among the general population (Melamed, Shirom, & Toker, 2006). There is a strong positive correlation between burnout and depression, with studies showing that emotional exhaustion and burnout share 26% of their variance (Melamed, Shirom, & Toker, 2006). Depression and burnout can mimic each other. Some individuals may feel depressed, but they are burned out. Exhaustion can also play a role in burnout and depression. Fatigue has increased over the past few years due to the pandemic, ever-changing restrictions, continually growing workloads, and constraints. If the firefighter cannot cope with exhaustion, this can lead to a high level of burnout.

Mental health problems in firefighters are increasing. Statistics show that in the U.S. alone, 20 percent of the population will suffer annually from a mental health condition (Dreiman,

2018). Diving deeper into the firefighter population, Post Traumatic Stress Disorder (PTSD) alone is one of the most common mental health challenges affecting 22 percent of the population (Dreiman, 2018). The buildup of these mental health challenges in the firefighter population can lead to the by-product of suicide. Dreiman's study shows that out of 1,000 active and retired firefighters, almost half reported they had experienced the thought of suicide and 16 percent had attempted suicide. These numbers are nearly three times more than the suicidal thoughts and tendencies of the U.S. population. These studies show that mental health challenges are present in the fire service and need adequate support from internal and external resources.

### ***Physical Health***

When an individual wants to become a firefighter, they must pass several physical fitness tests to show that they are strong and healthy enough to meet the day-to-day challenges the job throws at them. Once the firefighter is a part of the fire department, the traumatic experiences and added stressors can cause physical health to decline. Cardiovascular disease is the most common health concern in firefighters. Heart attacks are the most common cause of death among firefighters in the United States. There is evidence that the impact of burnout on cardiovascular disease is equal to and potentially more significant than the typical causes of cardiovascular diseases, such as age, body mass index, smoking, blood pressure, or lipid levels (Melamed, Shirom, & Toker, 2006). Additional research showed that in a group of firefighters wearing heart monitors and exposed to mental and physical stressors, there was an increase in heart rates and impact on mental awareness (Rodrigues et al., 2018). Over time, this has caused the American fire service to look at ways to improve heart health, diets, and physical fitness and recommend programs to support improved health and wellness among firefighters.

When a firefighter adds health risks to an already dangerous profession, increased demand from the administration, and the revolving need of the community, the overall health of firefighter's declines. Firefighters prepare daily for internal and external demands and now have the added pressure to maintain a healthy mind and strong fitness level to perform their best. Fire services need to look at the overall health of the firefighter and understand the factors that need to be removed or adjusted so that these risks can decrease.

### *Sleep Quality*

Firefighters work a 24-hour shift without a guarantee of sleep. During this 24-hour shift, they must be alert and attentive to all calls to which they may be dispatched. Sleeping during the night hours of their shift is allowed; however, there are many nights that sleep is interrupted or minimal because of the community's needs. This disrupts sleep patterns not only at work but also at home. Studies have shown that inconsistency in sleep patterns and hours of sleep negatively impacts one's overall health.

In a recent thesis study, Hunnicutt (2020) observed firefighters and police officers in Boone, NC, to understand the impacts of stress on their sleep and sleep patterns. Hunnicutt collected her data using electrodes to measure the brain activity while the participants slept. She observed a significant difference in the sleep architecture and the nocturnal autonomic function in firefighters and police versus the public. She found that the two groups had sleep deficiencies compared to the population age. The amount of sleep was comparable; however, the amount of time that firefighters and police were in REM sleep was significantly lower. In her text, Hunnicutt (2020) mentions that REM sleep supports daytime mental and physical performance. Reduced time spent in REM sleep negatively impacts the performance of the two professions.

The impact of less sleep was found in a research article by Smith, Mullins-Jaime, Dyal, & Dejoy (2020), which reduced firefighters' safety behavior. They studied the impacts of stress and how it increases burnout and reduces safety behavior. The authors found that "burnout not only impacted compliance-oriented behavior such as following standard operating procedures and properly wearing personal protective equipment, but also negatively impacts the safety citizenship behavior" (Smith, Mullins-Jaime, Dyal, & Dejoy, 2020).

### **Synthesis of the Existing Literature**

The literature's over-arching themes encompassed the challenges faced by firefighters, emphasizing the potential consequences of burnout. The multifaceted nature of burnout within the fire service is explored, including its prevalence, contributing factors, and implications. Organizational stressors impacting firefighters such as communication challenges, staffing shortages, and evolving technology is highlighted. The unique stressors introduced by the COVID-19 pandemic, increasing call volume, and administrative challenges are examined, highlighting their impact on firefighters' mental strain.

The shortcomings in the literature review include limited attention to the management of burnout within organizations, particularly involving communication effectiveness and support programs. The impact of organizational stressors, such as evolving protocols and policies, on firefighters' well-being is acknowledged, but strategies for mitigating these challenges are not explored. Furthermore, the literature acknowledges the heightened prevalence of burnout in the fire service compared to the public.

For future research, it is essential to address these limitations by exploring deeper into organizational strategies for managing burnout, exploring the efficacy of communication methods, and proposing targeted interventions to support the mental health of firefighters. Also,

a more comprehensive look at the impact of organizational stressors, staffing shortages, and technological advancements on burnout and overall well-being is needed.

### **Summary**

The literature review played a significant role in shaping thought in understanding of the challenges faced by firefighters, particularly in the context of burnout. The comprehensive review provided insights into the multifaceted nature of burnout within the fire service, shedding light on its prevalence, contributing factors, and implications for both mental and physical health. The literature review revealed the intricate dynamics of the firefighting profession, emphasizing on the relentless cycle of traumatic experiences, the impact of organizational stressors, and the challenges introduced by the COVID-19 pandemic. The literature review also highlighted the relationship between burnout and various health concerns, spanning both mental and physical dimensions. Understanding the factors contributing to burnout, including the demanding nature of the profession, administrative changes, communication challenges, and the mental and physical health impacts has shaped a holistic perspective on the subject.

In summary, the literature review served as a foundation for the current research, informing on the research questions, methodology, and overall research framework. The research will aim to gain insight into the Winston-Salem Fire Department and the impact of excessive overtime on burnout in firefighters.

## CHAPTER 3: METHODOLOGY

### Research Design

Given the exploratory nature of this research, a generic qualitative inquiry was conducted to answer the proposed research questions relating to the impacts of excessive overtime on firefighters' burnout levels and well-being. Qualitative research was completed over quantitative to explore burnout in firefighters and gain an understanding of why it is occurring versus quantitative “what” and “how” research. Quantitative research is driven by understanding the variables impacting the problem. With limited quantitative measures, mixed methods research was also not a viable research option. Mixed methods research is completed by using both qualitative and quantitative research methods to explore a topic. Qualitative research is defined as a means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem (Creswell & Creswell, 2018). When completing qualitative research, the final report is allowed flexibility in writing the findings. The study aimed to explore any commonalities that might be observed during one-on-one interviews.

To complete the qualitative study, interviews were selected as the instrument in the methodology to be used. The methodology instrument selected will allow the interviewer an opportunity to have one-on-one time with individuals to try and gain insight and possibly common themes among the selected population. The common themes will guide the attempt to answer the proposed research questions.

- 1) How does excessive overtime impact burnout levels among firefighters?
- 2) How has the overtime caused an increase in sick time usage?
- 3) Have there been any health and well-being impacts from excessive overtime?

Before the interview started, all participants were asked to sign a consent form, and all participants were assigned an identifier to protect their identity. The interview questions were developed based on the Maslach Burnout Survey (1981) to better understand the impacts with burnout and well-being.

### **Population and Sample Size**

The Winston-Salem Fire Department is an “All-hazard” response agency that serves a population of 253,000 in 134 square miles. The department has 397 employees, with 357 on the frontline responding to emergencies. The department responds to over 25,000 calls for service out of a total of twenty fire stations. Winston-Salem is in what is known as the “Triad” region of North Carolina. This study will focus specifically on the Winston-Salem Fire Department and the burnout and well-being of firefighters from excessive overtime. For the purpose of this study, excessive overtime is more than 48 hours a week.

Fire Chief Trey Mayo was contacted via email, explaining the research, and asking permission to conduct the with the Winston-Salem Fire Department. Chief Mayo responded with his support and permission to complete the research. The interview sample consisted of five individuals who worked the most overtime for 2023 regardless of rank and five who have worked minimal to no overtime for 2023. This information was obtained using the department staffing software. The individuals were contacted and asked if they would volunteer for the interview without punitive outcomes based on participation decisions. The individuals who participated were asked to sign a consent form, and everyone was assigned an identifier (A through E) to protect their identity. To separate the two categories of most worked from least worked, A1 through E1 is used for the most work individuals, and A2 through E2 is used for the least work.

### **Instrument(s)**

The research methodology used to conduct research for this project was interviews as the primary instrument. The interview protocol was designed by drawing inspiration from the established Maslach Burnout Survey and tailored to open-ended questions. This approach aimed to gain insight into the burnout impacts of overtime.

A validation process was implemented to enhance the credibility of the interview instrument. Independent experts without affiliation to Winston-Salem or the fire service were asked to field test the interview questions. This step was imperative to assess the reliability and dependability of the interview questions. Field testing also helps to ensure that the instrument effectively captures the intended dimensions of burnout.

The chosen data collection method involved in-person interviews, which allowed for direct and interactive engagement with participants. This method also fostered a conducive environment for nuanced responses and exploring burnout associated with excessive overtime.

### **Research Process**

The survey undertaken in this study aimed to understand the impacts of excessive overtime (more than 48 hours) on the firefighters of Winston-Salem. The Maslach Burnout Survey (1981) was used as a foundational framework for formulating open-ended interview questions to construct the survey instrument. The following interview guide was used:

1. How do you manage and cope with situations where the job demands excessive overtime? Can you provide an example of when you worked more than 48 hours of overtime and how it impacted your work-life balance?
2. How do you generally feel emotionally and physically in the workplace? How did you cope with the feelings?
3. What has been your relationship with your colleagues or clients when you have worked excessive overtime? How do you manage those feelings?

4. Are there instances where you feel your well-being has been impacted by excessive overtime? How are you addressing the instances?
5. To what extent do you feel supported by the organization in managing your workload and achieving your goals? Are there organizational factors that you believe contribute to feelings of burnout?

To determine the reliability and dependability of the interview questions, each interview question was field tested by an expert in the field not affiliated with this study. An expert selected by Dr. Tamara Mouras with Columbia Southern University, reviewed the interview questions to ensure each question best captured the intended information and ensuring the questions were not leading.

Interview participants were selected by using the department staffing system, Kronos Telestaff, and running a report exploring overtime worked by each personnel. The top five individuals with the most overtime worked in 2023 were then asked if they would voluntarily participate in the one-on-one interview. The top five individuals with the least amount of overtime were also asked if they would voluntarily participate in one-on-one interviews. No parameter was used, such as age, sex, race, or rank within the organization, when selecting those to be interviewed.

The interviews were conducted face-to-face to build trust and rapport with the participants. Each participant signed a consent form the National Fire Academy provided to participate in the interview. Before each interview, each participant was informed of how the interview would be conducted and advised that they could stop at any moment. The location was the fire station the participant was working at that day and in a private setting to protect the confidentiality of the participant. The time of day was between eight in the morning and five in the evening, between the days of Saturday, January 27, 2024, through Tuesday, January 30,

2024. The interviews were also conducted without interrupting the fire companies' availability for calls to service. The researcher used a recording app to collect feedback and analyze the themes of the feedback. The researcher then used inductive analysis to work to identify themes through data coding. The saturation of data was sufficient to find common themes and stay within the time constraints for the course. The collected instruments will be kept with the researcher for four years. The collected hard copy material will be kept in a file and the recordings will be saved on the researchers' Apple iCloud account which is password protected.

### **Ethical Considerations**

The ethical considerations for this research are the interviewees' consent and identity protection. Before the interviews were conducted, everyone was asked to read and sign an interview consent form provided by the National Fire Academy. Individuals were assigned a personal identifier to protect the identity of those who participated. Those who worked the most overtime was identified as A1 through E1. The individuals who worked the least amount were given the identifiers of A2 through E2.

Another ethical consideration was the work history and knowledge of the participants the researcher may have previously established. The researcher conducted the research without preconceived biases toward the interviewed participants. The researcher also verified the participant did not feel pressured to participate based on the researcher's status within the organization.

### **Summary**

To summarize the methodology of this research project, a qualitative study employs interviews to investigate the impact of excessive overtime on burnout levels and well-being among firefighters. The study aims to address specific research questions related to the

consequences of overtime on burnout and overall well-being. Consent forms and identifiers were used to uphold ethical standards and protect participant confidentiality.

The research focused on the Winston-Salem Fire Department, which comprises 397 employees, with 357 being frontline emergency response staff. Excessive overtime, defined in this study as more than 48 hours in a week, serves as the criterion for participant selection. The sample includes five individuals with the highest overtime for 2023 and five with minimal overtime in 2023, selected by using the department's staffing software. Participants were contacted and volunteered for interviews with the understanding there would be no punitive consequences and their identity would be safeguarded through assigned identifiers (A1 through E1 for high overtime, A2 through E2 for low overtime).

Interviews, with questions based on the Maslach Burnout Survey, served as the primary instrument for data collection. The open-ended questions aim to explore burnout impacts and well-being implications from excessive overtime. An external expert conducted field testing to ensure the interview question's credibility and dependability. The interview process was conducted in person and followed ethical considerations, emphasizing participant consent and identity protection.

In summary, the process involves the development of interview questions, participant selections based on overtime data, and adherence to ethical standards. The study sought to understand better the effects of excessive overtime on the well-being of firefighters in the Winston-Salem Fire Department.

## CHAPTER 4: STUDY RESULTS

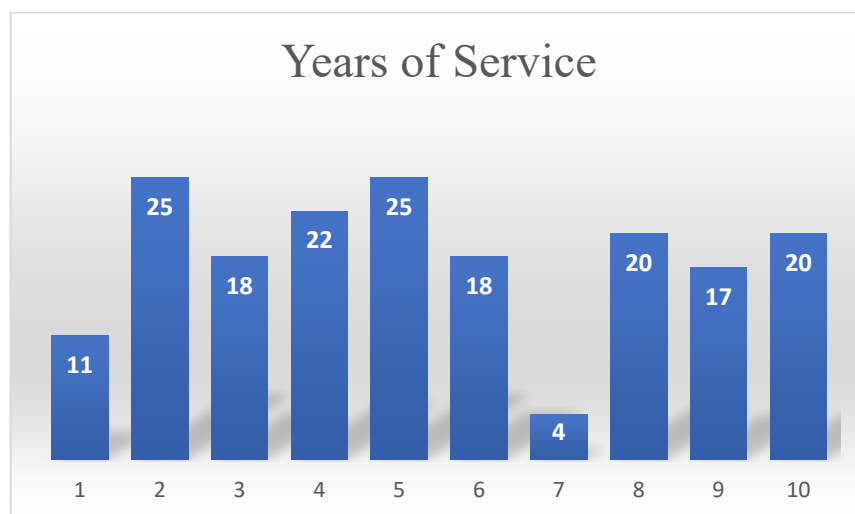
### Introduction – Demographics of the Participants

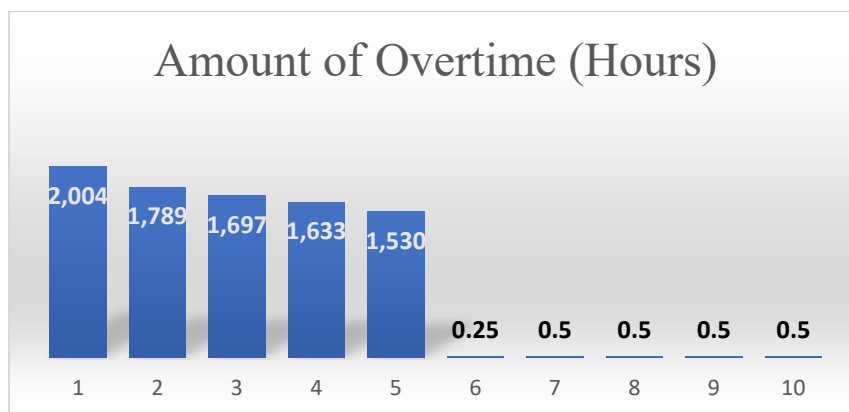
The researcher used the department's staffing platform to generate a report showing all the additional time worked for the firefighter ranks through battalion chief. Only voluntary or mandatory overtime was used to identify participants. The top five individuals with the most and the least amount of overtime were selected to participate. To protect the identity of the participants, each participant was assigned a designation A1 through E1 for those with the most overtime worked and A2 through E2 for those with the least amount of overtime.

In total, ten interviews were completed over a three-day period. Of those interviewed, six held the rank of firefighter, and four held the rank of captain. All the participants were male. Three of the participants were black, six were white, and one chose not to identify. Only one of the participants had less than ten years with the department, and the rest had more than ten.

#### Figure 1.

##### *Participant Years of Service*



**Figure 2.***Amount of Overtime per Participant*

This qualitative study explored firefighters in the Winston-Salem Fire Department working the most overtime for the current calendar year and the mental and/or physical impact of excessive overtime. As seen in Figure 2, the significant amounts ranged from over 2,000 hours to the least amount being a half hour. The following were the research questions that assisted in developing the interview questions.

- Q1) How does excessive overtime impact burnout levels among firefighters?
- Q2) How has the overtime caused an increase in sick time usage?
- Q3) Have there been any health and well-being impacts from excessive overtime?

### **Research Results**

Interview question number one asked: *How do you manage and cope with situations where the job demands excessive overtime? Can you provide an example of when you worked more than 48 hours of overtime and how it impacted your work-life balance?* This question sought to gain insight into the participants working more than 48 hours and how they best manage the added work hours. The responses varied by participant, and many of the participants who worked limited overtime provided very little insight. The following themes were noted.

*Theme one:* Several participants identified planning as their best way to manage excessive overtime. Participants A1, B1, D1, E1, A2, and C2 shared that they manage best by planning the added work hours with their families. Participant C2 shared the difficulties that are faced when scheduling childcare, the instance childcare falls through, and having to manage that best, (Participant C2, personal communication, January 28<sup>th</sup>, 2024). A point was made that mandatory overtime is used very seldom. Most of the overtime is voluntary, and individuals can plan and govern themselves accordingly (Participant E1, personal communication, January 27<sup>th</sup>, 2024).

Interview question number two asked: *How do you generally feel emotionally and physically in the workplace? How did you cope with the feelings?* This question aimed to understand the emotional and physical state the participant was currently in and how they best managed themselves. The overall response was good, but two themes emerged from the question.

*Theme one:* All participants felt emotionally and physically good in the workplace. One participant said, “They know they are currently burned out and that they best manage this through fitness and speaking to someone outside the department” (Participant E2, personal communication, January 30<sup>th</sup>, 2024). One individual shared that previously, “he was facing burnout and coped with the use of alcohol” (Participant C2, personal communication, January 28<sup>th</sup>, 2024).

*Theme two:* Participants B1, D1, A2, C2, and E2 all shared that their company assignment impacted their physical and emotional states. Participant C2 shared that when he was assigned downtown, the many calls and sleepless nights took a mental toll on him (Participant C2, personal communication, January 28<sup>th</sup>, 2024). Another participant shared that when he was

transferred based on his seniority to the HazMat company, it took a toll on him mentally and that his current assignment has helped him cope with burnout (Participant E2, personal communication, January 30<sup>th</sup>, 2024). The theme of the fire station assignment and crews was consistent among the participants.

Interview question three asked: **What has been your relationship with your colleagues or clients when you have worked excessive overtime? How do you manage those feelings?**

This question sought to understand how the participant's attitude might be impacted due to excessive overtime. The participants were similar in their noted two themes.

*Theme one:* In theme one, the participant would find themselves quiet or want distance from their colleagues after working excessive overtime. Participants A1 and D1 shared they would feel this type of separation or impact due to excessive overtime. To answer the follow-up question, participant A1 said he would “rest to cope with those feelings in hopes of returning more rejuvenated” (Participant A1, personal communication, January 30<sup>th</sup>, 2024).

*Theme two:* The other identified theme shared was that they felt no difference and managed themselves by taking breaks. One participant shared that due to a recent divorce, he often felt the overtime was therapeutic for him (Participant D1, personal communication, January 30<sup>th</sup>, 2024). The participant expressed that interacting with fellow co-workers provided him with an opportunity to address and manage feelings of depression and loneliness through general conversations and companionship.

Interview question four asked: ***Are there instances where you feel your well-being has been impacted by excessive overtime? How are you addressing the instances?*** The intent of this question was to capture a time when the participant worked excessive overtime and noticed an impact on their well-being as a result.

*Theme one:* Participants A1, B1, A2, and E2 all shared they experienced some form of impact on their well-being due to overtime. Participant A1 shared that on more than one occasion, he would find himself so exhausted when getting off after excessive overtime that he would hang around longer at the fire station and consume caffeine to feel alert enough to drive home (Participant A1, personal communication, January 30<sup>th</sup>, 2024). Another participant shared that he is currently “burnt out and exhausted and is managing it with fitness and no longer working overtime” (Participant E2, personal communication, January 30<sup>th</sup>, 2024).

*Theme two:* The other theme was that there had been no impact at all. Participants D1, E1, B2, C2, and D2 shared that they either never experienced this impact or did not work enough overtime to face this instance. It was also shared that it is “important to have a supportive family at home that understands the impacts and exhaustion and accommodates rest to support them” (Participant E2, personal communication, January 30<sup>th</sup>, 2024).

The final question asked: ***To what extent do you feel supported by the organization in managing your workload and achieving your goals? Are there organizational factors that you believe contribute to feelings of burnout?*** This question was used to see if burnout was present and created without overtime and if it was done so by organizational factors. There were two common themes based on this question. One was lift assists, and the other was lack of support from administration.

*Theme one:* Lift assists are incidents where a patient is not requiring any medical treatment, just assistance being lifted off the floor. This type of response started in 2022 to help better support Forsyth County EMS. Participants D1, E1, A2, and C2 all shared their burnout from running this type of incident. One participant shared that “the constant system abuse wears

on a firefighter's purpose to make an impactful change when constantly responding to these types of incidents" (Participant C1, personal communication, January 30<sup>th</sup>, 2024).

*Theme two:* Another theme continuously shared was the feeling that the administration does not support them in their needs. One participant shared his belief that the administration had "forgotten what it was like to work shift work when making policy decisions" (Participant D1, personal communication, January 30<sup>th</sup>, 2024). Another shared input was that the "administration continued to require more for the workers to become promoted and failed to better manage and provide the required courses needed for promotion" (Participant D2, personal communication, January 30<sup>th</sup>, 2024). Another participant shared that he felt there were continuous assessments to pass to maintain their jobs, such as the NFPA physical and annual ability test (Participant E2, personal communication, January 30<sup>th</sup>, 2024).

### **Summary**

The study examined the effects of excessive overtime on firefighters within the Winston-Salem Fire Department. Over a three-day period, ten interviews were conducted with participants ranging from firefighters to captains, each assigned an anonymous designation for confidentiality. The participants were exclusively male, comprising six firefighters and four captains, with a diverse demographic distribution. Notably, planning with family emerged as a prevalent strategy for managing excessive overtime. Themes related to emotional and physical well-being surfaced, revealing diverse coping mechanisms such as fitness, seeking external support, or using alcohol. Fire station assignments and crews consistently influenced participants' experiences. Responses to colleague relationships varied, with some seeking distance post-overtime, while others felt unaffected and managed through scheduled time off. Well-being impacts were heterogeneous, ranging from exhaustion and burnout to no discernible adverse

effects. Concerns were raised regarding lift assists and perceived inadequate support from the administration, encompassing dissatisfaction with policy decisions and promotion-related issues. These findings contribute valuable insights into the multifaceted experiences of firefighters grappling with the challenges of excessive overtime.

## **CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS**

### **Summary of the Results**

The research investigated the impact of excessive overtime regarding firefighters in the Winston-Salem Fire Department. The research involved ten interviews over three days. Participants were assigned anonymous designations for confidentiality and included six male firefighters and four captains with diverse demographics. Planning with family emerged as a prevalent strategy for managing overtime and its associated stressors. Also, many mentioned the support of the family in instances where the participant was exhausted from interrupted sleep. The coping mechanisms for emotional and physical well-being varied, including fitness, seeking support, or the use of alcohol. Fire station assignments notably influenced burnout among those interviewed. When feeling burnout from excessive overtime, some participants sought distance from colleagues when working their normal shifts, while others remained unaffected. The impacts on well-being ranged from exhaustion to no effect. Commonly identified systemic organizational stressors included lift assists and inadequate support from fire administration regarding policy decisions and promotion-related issues.

### **Conclusions Based Upon Your Results**

Most of the participants noted that overtime can be physically and emotionally stressful, but they all noted individuals can manage their schedule better if they start to become impacted by excessive overtime. Most of the interviewees mentioned planning with family as a top priority in managing the added stressors. It was concluded that while there is some element of impact from the additional hours, as additional overtime is voluntary, the interviewees felt they could manage the impacts of burnout.

There was no identified theme that spoke to increased sick time usage. The interviewed participants mentioned various levels of burnout impacts, alcohol usage, and exhaustion, but none specifically impacted their use of sick time. Only one candidate acknowledged they thought they were currently burned out.

The overarching health impact was impacted sleep habits and exhaustion. Multiple times, an individual would express the station assignment and the number of interruptions impacting their sleep. This led to one individual sharing he would hang around longer in the morning to ensure he felt alert enough to drive home safely. As mentioned earlier in the literature review, Smith et al.,(2020) discuss the impact of safety behavior on those who are experiencing sleep deprivation.

Overall, the research provides insight that can guide organizational policies, interventions, and support systems to assist in better managing and mitigating the negative impacts of excessive overtime and promote firefighter health and well-being. By addressing these issues, advances can be made in strategies for managing overtime-related stressors and ultimately enhance firefighters' overall health and safety.

### **Limitations**

While this research was unique in its field and a start in exploring a better understanding of the impacts of excessive overtime on firefighter's emotional and physical health, there were noted limitations. One specific limitation was the sampling method. The chosen sampling method was utilized due to the course's time constraints and the participants' availability. The participants represent only a small percentage of one fire service organization. There are many variables based on organization and community that are not accounted for, such as specific station assignments and call volume, community socio-economic variables, and so on.

Another limitation based on the sample is the biases that potentially existed in those interviewed. While the sample collected provided themes, the researcher does not feel more samples would have provided further insight. However, further investigation and research could narrow in on the station assignments and the impacts of working overtime at those locations.

### **Implications and Recommendations to the Field**

One takeaway from the research is that those who work excessive overtime do so most of the time voluntarily. When these individuals plan and coordinate with their families, the added hours worked are better accomplished with less negative impact. A common theme was the fire station assignment and the associated call volume. When firefighters worked additional hours at the busier fire stations, the participants felt more emotionally and physically drained. The organization can research if the staff at busier stations are burned out from their normal work hours. It is possible that re-assigning those individuals to a less busy station would aid in the number of instances an employee would need to work extra hours at that location. Correcting this recommendation can aid in supporting the firefighter's mental health.

Another area the organization can explore to help curb burnout is evaluating its response to lift assist calls. The common concern was the abuse of the emergency response system. The efficiency of this modeled response should be evaluated to gain insight into its outputs and outcomes.

### **Recommendations for Future Research**

While this research aimed to understand better burnout and the impact of excessive overtime in firefighters with the Winston-Salem Fire Department, the research also exposed areas of future research to aid in better understanding and mitigating burnout in firefighters.

Future research could be a longitudinal study to track the long-term effects of excessive overtime on firefighters' emotional and physical health. This research style would allow insight into the cumulative impact of overtime and the changes that might impact it. This would allow for policy and organizational improvements and changes to aid in firefighters' emotional and physical care.

Another area for future research would be a comparative study. The study would aim to compare the experiences of firefighters in different departments in different regions of the United States with varying overtime policies. With this style of study, it can aid in identifying best practices for managing overtime and minimizing the negative health effects. The benefit of this recommendation to the fire service will be a greater emphasis on caring for firefighters' emotional and physical health.

One final recommendation for future research would be an intervention study. This study would aim to evaluate the effectiveness of interventions to mitigate the negative effects of excessive overtime. The focus could include targeting organizational policies, individual coping strategies, or support systems available to firefighters and their families. This study style can benefit the fire service by exploring whether or not the current interventions are working.

### **Conclusion**

The literature review played an important role in shaping our understanding of firefighters' challenges, especially regarding burnout. Through a comprehensive examination of existing literature, insight was provided into the multifaceted nature of burnout within the fire service, including its prevalence, contributing factors, and implications for mental and physical health. The literature also sheds light on profession-related stressors such as constant exposure to traumatic incidents, the impacts of organizational stressors, and the impacts of a global pandemic.

A qualitative inquiry was used to explore the impacts of excessive overtime on firefighters' burnout levels and well-being within the Winston-Salem Fire Department. The study used interviews as the primary instrument to understand the selected participants, focusing on themes related to coping strategies, emotional and physical well-being, relationships with co-workers, and organizational support. Findings revealed that while excessive overtime can be emotionally and physically stressful, participants emphasized the importance of planning with family to manage the added stressors best. Despite the challenges posed by overtime, most felt individuals could manage themselves accordingly, especially with most overtime work being voluntary. The results noted that interrupted sleep while working excessive overtime was impacting the well-being of the firefighters.

Future research is needed to provide a more comprehensive understanding of the impacts of excessive overtime on firefighters' health and well-being. Future research could track the long-term effects of excessive overtime, identify best practices to combat overtime and its effects, and conduct an intervention study. Focusing future research on these identified gaps can aid in advancing fire service knowledge and develop evidence-based interventions to support firefighter health and safety.

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## APPENDICES

### Appendix A- Interview Consent form

#### Interview Consent Form

##### Identification of Investigators & Purpose of Study

You are being asked to participate in a research study conducted by W. Andrew Gray from the National Fire Academy (NFA) and Columbia Southern University. The purpose of this study is to develop a better understanding of a critical issue in the fire and emergency services. This study will contribute to the researcher's completion of their final project for the Executive Fire Officer program.

##### Research Procedures

Should you decide to participate in this research study, you will be asked to sign this consent form once all of your questions about the study have been answered to your satisfaction. The study consists of an interview that will be administered to individual participants. You will be asked to provide answers to a series of questions related to your experience within a particular community. **An audio recording of the interview will be taken for transcription purposes. The audio file will be deleted at the conclusion of the study and will not be shared with anyone other than the researcher.**

##### Time Required

Participation in this study will require approximately 30 minutes of your time.

##### Risks

The investigator does not perceive more than minimal risks from your involvement in this study (that is, no risks beyond the risks associated with everyday life).

The NFA, Columbia Southern University, and its contractors take no responsibility for the actions or outcomes of the research study.

##### Benefits

**There are no direct benefits to the participant; however, information from this study may benefit you, and other communities, in the future.**

##### Incentives

**There are no incentives (financial or otherwise) associated with participation in this study.**

##### Confidentiality

The results of this research will be presented to NFA and Columbia Southern University program faculty and students. The results of this project will be coded in such a way that the respondent's identity will not be attached to the final form of this study. The researcher retains the right to use and publish non-identifiable data. While individual responses are confidential, aggregate data will be presented representing averages or generalizations about the responses as a whole. All data will be stored in a secure location accessible only to the researcher. Upon completion of the study, all information that matches up individual respondents with their answers (including audio) will be destroyed. Final aggregate results will be made available to participants upon request.

## Participation & Withdrawal

Your participation is entirely voluntary. You are free to choose not to participate. Should you choose to participate, you can withdraw at any time without consequences of any kind.

## Questions about the Study

If you have questions or concerns during the time of your participation in this study, or after its completion, or you would like to receive a copy of the final aggregate results of this study, please contact:

**W. Andrew Gray**  
Student  
National Fire Academy  
agray5213@yahoo.com

**Dr. Justin Heim**  
Course Manager  
Columbia Southern University  
Justin.Heim@columbiasouthern.edu

## Giving of Consent

I have read this consent form, and I understand what is being requested of me as a participant in this study. I freely consent to participate. I have received satisfactory answers to my questions. The investigator provided me with a copy of this form. I certify that I am at least 18-years of age.

- I give consent to be filmed and audio recorded during my interview. \_\_\_\_\_ (interviewee initials)  
 I give consent to be audio recorded during my interview. \_\_\_\_\_ (interviewee initials)

|                                  |  |              |  |
|----------------------------------|--|--------------|--|
| <b>Interviewer<br/>Signature</b> |  | <b>Date:</b> |  |
|----------------------------------|--|--------------|--|

|                              |  |              |  |
|------------------------------|--|--------------|--|
| <b>Interviewee Signature</b> |  | <b>Date:</b> |  |
| <b>Interviewee Signature</b> |  | <b>Date:</b> |  |

### Appendix B- Interview Questions

1. How do you manage and cope with situations where the job demands excessive overtime? Can you provide an example of when you worked more than 48 hours of overtime and how it impacted your work-life balance?
2. How do you generally feel emotionally and physically in the workplace? How did you cope with the feelings?
3. What has been your relationship with your colleagues or clients when you have worked excessive overtime? How do you manage those feelings?
4. Are there instances where you feel your well-being has been impacted by excessive overtime? How are you addressing the instances?
5. To what extent do you feel supported by the organization in managing your workload and achieving your goals? Are there organizational factors that you believe contribute to feelings of burnout?

*\*These questions were field-tested by Columbia Southern University.*