

A Tale of Disparity: A Delphi study of Gender Diversity in the U.S. Fire Service

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CERTIFICATION STATEMENT

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

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ABSTRACT

Inclusive gender diversity is a desirable trait in the American fire service but with the 2000 US census reporting less than 4% of the firefighter population being women; progress is proving to be slow. The problem is that only a small percentage of women are working and/or volunteering in the American fire service causing a lack of gender diversity in fire departments across the country. This is a problem as the added perceptions of diversity have shown to make organizations more respected and trusted to their customers as well as being able to provide more options to promote organizational efficiency and customer value. The purpose of this research project was to examine why more women are not working and/or volunteering in the fire service. This descriptive study used the Delphi Method to examine the following research questions: Why do women choose not to pursue the fire service as a career or service? Why do women choose to join the fire service? What unique barriers are there for women to become firefighters? What are the best potential opportunities to recruit and retain women in the fire service? The study results suggest that the fire service culture and public perception of firefighting are major root causes for gender disparity issues. The study recommends several ideas for the fire service to help improve gender issues such as public education, firefighter mentoring programs, changes in the fire service culture towards inclusion, and more research. The study also recommends ideas to be implemented at Halifax Community College as well such as working with local fire departments to highlight women firefighters, teach inclusive diversity classes and utilize more women fire instructors.

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INTRODUCTION

Long buried in facts, are the misconceptions that women are frail and improperly made for manual labor, or that their minds are incapable of mathematical and scientific thoughts. Section two of the nineteenth amendment to the constitution passed in 1919 gave women the right to vote, setting the stage for gender equality (Law, 2010). Women have made great scientific breakthroughs such as the discovery of radiation; (Fromen, 1996). Women have travelled in space (Goddard, 2010), led troops into battle (Willens, 1996), and made great strides for their nation in politics (Garza, 2010). With accolades such as these one has to wonder why gender diversity is still an issue in the fire service.

The problem is that only a small percentage of women are working and/or volunteering in the American fire service causing a lack of gender diversity in fire departments across the country (USFA, 2010). Diversity in an organization can lead to better community understanding, new ideas, cultural awareness of others and many other benefits (Armstrong, Berkman, Floren, & Willing, 1993; Pravis, 2003). A lack of diversity may result in inefficiency, misunderstandings, narrowed response abilities, lack of community trust, and others, costing the community, available resources, safety and money (Kircheimer, 2003).

The purpose of this research project is to examine why more women are not working and/or volunteering in the fire service. It is hoped that by filling this gap in knowledge that tools can be developed to increase the gender diversity of the American Fire Service as well as that of local area fire training programs such as the one at Halifax Community College in North Carolina.

This descriptive study used a three round Delphi study method to focus on the following research questions: Why do women choose not to pursue the fire service as a career or service? Why do women choose to join the fire service? What unique barriers are there for women to become firefighters? What are the best potential opportunities to recruit and retain women in the fire service?

Background and Significance

The U.S. fire service has traditionally been dominated by white male workers although the service protects and serves very diverse communities (Sagen & Pini, 2008). Diversity of employees is a desirable function in order to better serve and understand the customer base (Kottak, 2003). Ideally an organization would like a workforce to mirror the customer base in diversity to ensure that the organization is able to understand and provide the best service possible to every customer (Pravis, 2003). The fire service has been attempting to increase the diversity within the ranks, but unfortunately the efforts have not yielded the desired results after decades of attempts (Halton, 2010; Walter, 1999). This can probably best be exemplified by gender diversity in the fire service. While 47% of the American workforce is represented by women, the fire service retains a paid female fire population of only 2-4% (Census, 2000; i-women, 2010; Yu, 2000). More than half of the paid fire departments in the country have never had a woman member (Lang, 2008). Women pioneers in the fire service have shown that they can perform the necessary tasks to be good firefighters (Armstrong, et al., 1993). These women have shown that women can make for effective leaders and that the female perspective may be different but can offer great alternatives and advancements to issues facing the fire service on a daily basis (PBS, 2010).

This paper primarily focuses on the question of why more women do not choose the fire service as a career or an option for volunteer service. This is not only an important issue for the benefits of diversity in an organization but also from an issue of staffing stations. As modern trends force the average family to consist of working mothers and fathers with one or both often having second jobs, the fire service is finding that it is harder to recruit quality candidates into their ranks, especially in the volunteer service (Armstrong et al., 1993; Freimuth, 2006; McErlean, 2010). This can be a huge problem as even in these modern times approximately 80% of the U.S. fire service is comprised of volunteers (USFA, 2010). This staffing problem transcends the fire departments and into support organizations that try to help prepare citizens to become firefighters. This can be exemplified by institutions such as Halifax Community College (HCC) in North Carolina.

The delivery of emergency service training programs in North Carolina has been legislated to the fifty-eight local community colleges (NCCCS, 2010). These colleges provide initial and continuing training to the emergency service organizations within state set special districts. The emergency service workers, paid and volunteer, are provided job related training tuition exempt (NCCCS, 2010). Like other fire related organizations Halifax Community College has found it challenging to recruit adequate numbers of quality applicants into its fire service programs to be able to serve their communities as firefighters. This is particularly true in the volunteer side where firefighters are asked to train, serve and protect with no monetary reward (McErlean, 2010). Recruitment has also been difficult in the area of bringing local women into the fire service. Halifax Community College is located in rural Northeast North Carolina on the I-95 corridor. The college serves a local population of more than seventy-thousand residents in two counties (Temple, 2008). Halifax Community College locally serves

two combination fire departments, twelve volunteer fire stations and one industrial fire brigade. Within those ranks there have been no paid women firefighters, less than a dozen active volunteer women firefighters, and four female fire brigade members.

It is the researcher's philosophy that in order to increase the number of women firefighters an extended effort must be made to recruit more women into the initial fire training programs. Likewise, to keep qualified women firefighters a concerted effort must be made to encourage women firefighters to remain active in the continuing fire education programs like those at Halifax Community College. It is also the researcher's philosophy that to recruit and retain more women firefighters into the program there needs to be more knowledge gleaned on the root causes of why women choose and do not choose the fire service as an option. It is hoped that the information gained from this study will help fill the gap in knowledge in this area to allow for the development and implementation of corrective measures to the problem for the fire service in general and for the support organizations such as Halifax Community College.

This paper will not only provide insight concerning gender diversity to the Fire Service and individual agencies such as Halifax Community College, but also meets the requirements of the applied research program for the National Fire Academy's Executive Development course. Gender diversity ties directly into the teachings of the National Fire Academy (NFA) Executive Fire Officer (EFO) Executive Development course as it explores cultural, leadership and creative issues. By increasing diversity in the fire service the opportunities from new perspectives can be found to help every level of the fire service (Murphy & Murphy, 2010). New perspectives can directly impact all four of the USFA (2003) operational objectives of reducing risk, improving preparedness, enhancing service capabilities and improving the fire service's professional status.

LITERATURE REVIEW

Introduction

To academically discuss diversity can be a challenge. Diversity has been defined in many different ways by numerous people and groups (Murphy & Murphy, 2010; Nice, 2010). The word diversity can be traced back to the fourteenth century meaning the inclusion of different people (Merriam-Webster, 2010). Legally the word has been more narrowly focused by Title VII of the Civil Rights Act of 1964, to classes based on race, national origin, sex and religion (EEO, 2010). Individual states have increased the definition to include classes such as sexual orientation, disabilities, etc. (HRHero, 2010; Murphy & Murphy, 2010). Some organizations that have experienced specific issues have even narrowed the definition to meet organizational specific needs (Murphy & Murphy, 2010). Forward thinkers have taken a more modern twist to the definition though by encompassing each individual as a unique or diverse person (Nice, 2010). That is to say, everyone has a unique perspective to offer and therefore every individual is diverse with value.

A recent study conducted of more than 1400 human relations professionals and diversity experts found that organizations do claim to believe that diversity is an important concept but basic questions such as a definition or plans for forward movement on the issues are lacking (HRM, 2008). With thousands of articles written on the topic of diversity having no clear cut definition or answers leaves the fire service still fending for itself as it moves forward on the issue (Murphy & Murphy, 2010). This becomes problematic as organizations try to move forward with no clear cut plan, or worst no true value of diversity due to not understanding the implications and nuances.

There are certainly advantages to a diverse workforce for an organization over a homogeneous environment (Pravis, 2003). When creating a pool of different values, experiences, and backgrounds, a wide array of perspectives can lead to new creative ideas to solve problems, increase efficiency, and enhance customer satisfaction (Connerly & Pederson, 2005). A diverse work environment that mirrors the customer base can increase understanding, validity and respect for the organization (Kircheimer, 2003). The fire service, like other organizations, can better serve their customers through diversity (Walter, 1999). Organizations do need to ensure that diversity is a value that is shown in its leadership as well as the workforce in order to show sincerity and overcome issues experienced with diversity (Rosenberg, 2008). That is to say that true diversity is beneficial as long as restrictions such as glass ceilings are not permitted to exist.

Research conducted by the nonprofit group, 20/20, suggests that the community and the fire department both may be at additional risk due to trust, communication, and knowledge issues by not being diversified (Sagen, Pini, 2008). Gender diversity has been a lopsided issue in the American fire service since its conception. While the fire service started out with no women in service over 200 years ago, today there is approximately eleven-thousand paid women firefighters. This represents only 3.7% of the total paid firefighter population in America (Hulett, Bendick, Thomas, & Moccio, 2008). An exact count of women in the fire service is a hard number to accurately predict due to the dynamic nature of the fire service and state variations of fire service recordkeeping, but it is estimated that about 5% of the volunteer force is women (Armstrong, et al., 1993). Women typically join the fire service for the same reasons as men do, to give to their community, participate in rewarding work and the dynamic work environment (Hauprich, 2010). This paper will explore why, if the desire and ability exists, such a disparity between the genders has persisted over the last two hundred years.

Information for this review of literature came from local library sources, the National Fire Academy Resource Center, Inter-library loan program, Capella University online library, various websites and other sources. Key words used in the search included but was not limited to women, female, firefighters, gender, diversity and equality. While the review of literature found that many articles and thoughts existed on the subject of diversity in the fire service that actual scientific data and search for true root causes of the problem were sparse. No study was found on the subject using the Delphi method.

There were several major themes that came from the literature review concerning gender diversity in the fire service. Probably the most notable was the culture of the fire service. Culture is an organization's portrayed values and characteristics. The fire service's culture is strongly engraved by history and tradition (Coleman, 2003). The fire services tradition has been historically that of the macho male vision (Murphy & Murphy, 2010). Other themes that emerged from the literature review included unique challenges and barriers to women, recruiting efforts of the fire service, and career perceptions.

Culture

Fire has played a major role in America's history since the first recorded fire in Jamestown, Virginia in 1609 that destroyed the town and all its provisions (Fire history, 2010). Manhattan was originally settled by crew members from the Dutch ship, Tiger, which burned in the New York Harbor in 1613 (Fire history, 2010). While women were not allowed a major role in the fire safety programs that developed after these fires, there are some notable exceptions. For example, Molly Williams, a slave in New York during the early 1800s was known for her firefighting abilities and determination. History records Marina Betts as an active member of the bucket brigade in Philadelphia at about the same time (PBS, 2010). Into the twentieth century

other female firefighters emerged such as Marie Stack, thought to be the first woman captain of a fire company in America in 1912. Others included Jo Carol Hamilton, Fire Chief of the Shirley Arkansas Volunteer Fire Department, Sandra Forcier, thought to be the first paid female firefighter, and Genois Wilson who pioneered the first fire prevention program for deaf children (PBS, 2010). Many other women of the past blazed into new firefighting territory for other women to follow. Unfortunately these capable firefighters were not the rule; they were the exception because women have found it difficult to break into the strong male cultured fire service.

Culture can be a difficult concept to fully grasp. Culture can be defined as those values and characteristics that a group shares. The fire service has traditionally been a white male, working class culture deeply immersed in its traditions and history (Freimuth, 2006). To feel accepted into an organization's culture is not just a matter of overcoming any obvious biases or prejudices but a matter of inclusion into the group. Often the predominate group does not view themselves as exclusionary to a different type of individual, but their existing culture may make them look exclusionary to others (Carr-Ruffino, 2003). For example, a crew with a new woman firefighter may not see anything wrong with constant conversations of cars, hunting and home repairs. If the female firefighter has no interest in these topics it will be hard for her to feel included into the group. A survey conducted of women firefighters that had quit the fire service found that many of the women felt isolated and excluded. One interview in the survey responded "I had no support group, no girlfriends; I was the only female firefighter in the region." (Willing, 1996).

Several surveys have been done to explore the cultural issues of women in the fire service. Often the traditional male firefighter claims not to have a problem with a woman

firefighter if they can do the job (Floren, 1999). Surveys often find that to fit in women have to be assimilated into the already existing culture. One survey found the highest compliment that a male firefighter could make to a woman firefighter was that she fit in or was one of the guys (Floren, 1999). Not only does this devalue the individual perspective but can have destructive side effects. For example, an interviewee of a study concerning women in the fire service remarked, “The guys were mean to me and the other female firefighter was meaner.” (Willing, 1996). This behavior may have allowed the female firefighter the ability to be one of the guys, but at a high price to her and the profession. Psychologists have found that witnesses are less likely to confront a wrong being committed when there is a group than if alone (Halton, 2010). This may be the cause some of the cultural issues in the fire service as the firefighters are typically in a group rather than just an individual.

Even when looking at cultural diversity through the term of fairness issues ensue. For example, the definition of fairness itself is problematic. Fairness is often looked at as a statement of outcome, but in diversity it has to be an input (Floren, 1999). For example, many fire departments have strict grooming standards including hair length. Under a strict rule of fair, that would mean that women would have to abide by the same short haircut requirement as men even though it is not the society norm. Likewise it would mean that all students would have to be taught the same way to be called fair. For example, to be fair an instructor would show everyone how to tie a knot the same right handed way. This could unfairly put the left handed students at a disadvantage (Armstrong et al., 1993). Exceptions to accommodate diverse individuals or groups can even be interpreted by others as unfair (Murphy & Murphy, 2010).

Lack of respect for women firefighters by their male counterparts is a frequent complaint (Willing, 1996). Respect for differences need to be embraced by the culture for diversity to work

(Murphy & Murphy, 2010). For example, one of the three simple values that Lockheed Martin Defense Company has is to respect others (Lockheed Martin, 2010). By including respect into the organizations written goals the company is demonstrating it as an important value for the organizational culture. Shah (2006) points out that a value has to be more than words it has to be shown in the actions to become part of the culture. It is natural for leaders to act on the dominate culture but this can be countered with diversity in leadership (Shah, 2006).

Leadership often sets the tone for an organization's culture (Freimuth, 2006). In turn leadership also plays a major role in an organization's diversity issues (Watson, 2008). Fire leaders must be able to take charge and utilize the unique attributes of each employee for the betterment of the organization (Murphy & Murphy, 2010). To do this though, leaders must be able to recognize and understand the differences in a nonjudgmental way in order to pull together a cohesive team (Goldsmith, Greenberg, Chan, and Alastair, 2003). This can be an easier feat to talk about though than to accomplish (Shamir & Ben-ari, 2000). Putting a group together with different values and cultures can be threatening and end badly if not done appropriately (DuTorr, 2004). This might be where a woman firefighter is introduced into a traditionally male firehouse. If the free time discussions center on hobbies such as hunting and fishing, while excluding the woman firefighter's desire to talk of family and friends, a wrongful stereotype may be applied. The woman may see the men as uncaring and insensitive to people while the men may see the woman as soft and overly sensitive. These wrongfully applied stereotypes could lead to a confrontation on the fire scene as the woman may view a male firefighter's action(s) as callous and a male firefighter may view her action(s) as a waste of time or a deviation from the mission. Good leadership and management can help avert such possible problems that may be rooted in diversity issues (Pravis, 2003).

It should be pointed out that there are those that argue a different view of diversity should be taken. For example Jernigan (2010), points out that diversity can cause rifts and that firefighters need to come together as one collective group for the community. This idea has merit but it can be argued that the fire service is a culture or a group in their own rights with different perspectives from other emergency service groups, which by more modern definitions is diversity (Murphy & Murphy, 2010). That is to say it may be helpful to think of all firefighters as a single type or group, but it may not be realistic due to all of the individual differences.

With so much controversy over diversity and how it plays into an organization's culture it could be argued that more diversity training could be beneficial to the fire service. Before beginning diversity training though the culture of the organization must be determined (Watson, 2008). With a starting point realized and a realistic end point in mind diversity training can be much more effective. Classes for diversity awareness and acceptance are not the same as affirmative action classes (Nice, 2010). The instructor or facilitator must be careful not to fuel biases or to make anyone feel that they are being talked at as prejudice individuals (Watson, 2008). Classes need to concentrate on the inclusion of each individual not on archaic ideas of numbers, fairness or melting pot ideas (Murphy & Murphy, 2010).

The National Fire Academy and other organizations have designed classes to disseminate diversity issues to firefighters. Cultural Diversity for Fire and Emergency Service Instructors (1994) discusses the importance of inclusion, recruitment and retention techniques to be used in classes. The NFA has also developed Interpersonal Dynamics for the Emergency Services (2003) as a resource for the interpersonal dynamic issues of the fire service including inclusion and diversity. These classes are available to the fire service free of charge and can be a good place for an organization to start to work towards an inclusive culture.

Firefighting Perceptions

The fire service being a male dominated environment has made many women firefighters feel uncomfortable and even unwanted (Halton, 2010; Wiley, 1996). Many male firefighters have commented on their belief that a woman is not likely to have the strength to pull them out of a burning building should something go wrong (Murphy & Murphy, 2010). Some fire leaders have stated that women do not want this kind of work (Hulett et al., 2008). People in general have a tendency to believe that gender inequality is natural and unchangeable (Armstrong, 1993). Women have even commented that they did not think they would be able to perform the tasks of a firefighter because of the qualities and traits needed.

The numbers speak unfavorably to a diverse fire service. For example, it is estimated that 47% of the workforce is female but yet only 3.7% of paid firefighters are women (Hulett et al., 2008). Yu (2000) estimates a smaller number of approximately 2% of firefighters are women in America. The literature review found inconsistencies in number reporting due to job task breakdowns, paid versus volunteer, tracking tools, and other variables. For example, in the 1990 census a second category of fire prevention is in the occupational codes showing a female population of 16% of the total (Census, 1990). Within the 2000 census the fire prevention code is gone but a fire inspection category exists reporting a female population of approximately 18% (Census, 2000). Though small discrepancies were noted the trend of diversity issue was consistent in all reports. For example, the 1990 census reported out of over two hundred and eighteen thousand paid firefighters only 2.7% were women. Three states were reported as having no paid women firefighters (Census, 1990). The 2000 census reported that with over two hundred and forty thousand paid firefighters in America that the number of women moved to only 3.6% (Census, 2000). The fire service was not only slow in bringing women into the fold

but also minorities in general. From the 1990 to the 2000 census nonwhite firefighters rose from 16% to 18% of the entire paid firefighter population (Census, 1990; Census, 2000). One survey revealed that in 2000 only 51.2% of 291 major U.S. cities employed women firefighters and in 2005 less than one quarter of one percent of New York City firefighters were women (Hulett et al., 2008).

Firefighting is not for everyone (McErlean, 2010). As a career, the work schedule is very different with 24 hour shifts and call back responsibilities (Armstrong et al., 1993). As a paid or volunteer firefighter the job is often extreme physically and emotionally demanding. The job is often dirty and performed in austere environments under the poorest of weather conditions. The job has an element of danger that can never be totally removed (Kline, 2001). There are both men and women that would not care to be a firefighter due to the nature of the job (Hulett et al., 2008). With this in mind it becomes harder to determine what a fair expectation of population would be for women in the fire service. A study conducted of 184 occupations with similarities to firefighting found an average female population of 17% (Hulett et al., 2008). This study suggests that there very well may be a smaller percentage of women seeking firefighter jobs as there are men.

If one were to assume that a fire service comprised of a 17% woman population was more achievable and more realistic, there is still much that must be done to go from the current 3.7% to 17% (Hulett et al., 2008). Some departments have made great strides to this end already. For example, Minneapolis, Minnesota Fire Department has a 17% female population, Madison, Wisconsin a 15% female population, Boulder, Colorado Fire Department a 14% female population and Miami-Dade, Florida with a 13% female population (IAWFES, 2010). Another

study claims that other cities have made similar efforts such as Kalamazoo, Michigan with a female population of 23% and Tuscaloosa, Alabama at 24% (Hulett et al., 2008).

America has always been a land of immigrants and the country continues to grow as a land of diversity as it is estimated that by 2050 more than 54% of the population will be minorities (MSNBC, 2008). Mar Barak (2000) points out that diversity acceptance is not a matter held to the internal borders of an organization but it is a matter deeply rooted in society. Some would argue that diversity and inclusion issues are as much community issues as organizational issues (Mar Barak, 2000; Mallory, 2007; Roaten & Schmidt, 2009). There are areas in which steps are already being taken. For example, many teachers in elementary schools are addressing the issues of diversity and providing skills to help the students to be more prepared to embrace diversity (Roaten, & Schmidt, 2009). If the students can be taught at an early age to be more inclusive they should be able to carry these skills with them to adulthood (Mallory, 2007). This is certainly a good idea but consideration needs to be given as to how early children begin to accumulate exclusive ideas. For example, a small study done at Washington and Lee University suggested that preschool and kindergarten girls had already formed opinions of what careers they were limited to (Coyle, 2010).

A study conducted of fire departments in Wisconsin found that 85% of the respondents believed the major factor in lack of women fire service candidates was that women simply do not consider the fire service as a career choice for them (Marohl, 2002). Diversity is a matter of being different (Murphy & Murphy, 2010). There are going to be differences based on an individual's experiences. For example, baby girls are dressed in pink and baby boys in blue. Boys are typically taught to mow the grass and girls to do the dishes. Fathers are protective of their girls and wrestle with their boys. Boys play with trucks and girls play with dolls. Maybe

Barbie should have been a firefighter. To many firefighters shock, she was. While debates continue whether Barbie is a realistic role model, Coley (2010) found that by dressing a doll in different work clothes, including firefighter gear, the girls would change their mind as to what jobs girls could potentially do. This study suggests that the toys and games played by children may be able to influence future career and service decisions.

Family often sets the values for children to follow throughout their lives. Some families view firefighting as a sub-entry profession (Fox et al., 2006). Meaning that family will often push children to what is perceived as more prestigious careers such as medicine, law etc. These family beliefs and values can negate a girl from being a future firefighter simple due to the perspective given by others. In an era of mass media it should be considered the realm of child motivation goes outside the family unit (D'Arcy, 2004). That is to say that it may be possible for the media to influence children into careers as seen by professions such as professional athletes and singers.

The language used in the fire service can also send an exclusive tone to others. For example, the term fireman is often used to refer to all those in the fire service. It needs to be remembered though that often the public, especially the children, interpret this literally suggesting to them that girls cannot be firefighters (Walter, 1999). Firefighter is a respected term that could be used in place but is often not used simply due to tradition.

Unique Challenges/Barriers

Women face several unique challenges or barriers in the fire service. Some of the barriers are due to cultural differences, some are due to physical differences and some are due to other issues. These barriers often result in women not being accepted into the fire service or causing a lack of retention of qualified women firefighters.

Physically women are different than men and not just merely smaller (Melendez, 2006). With differences in frame ratios, hand size, finger length etc. outfitting women in traditionally designed gear for men put them at a disadvantage (Hulett et al., 2008). A study of firefighting gear at Arizona State University found much of the firefighter gear was designed for taller muscular men which put women at a disadvantage with its use (Melendez, 2006). For example, one study showed that 79.7% of the surveyed women indicated problems with non-fitting gear compared to only 20.9% of similar complaints from men. An International Association of Women in Fire and Emergency Service (IAWFES) survey found 51% of female respondents had complaints of improper fitting gear (IAWFES, 2010). In interviews a reoccurring complaint by women was the height of the air pack caused the pack to bump the helmet forward impeding the firefighters vision (Hulett et al., 2008). This complaint was seconded by researchers at Arizona State University where they have designed a shorter pack called the Aeroflex to combat this problem (Melendez, 2006).

A stereotype of women held by many is that women are not physically strong enough to do the job of a firefighter (Armstrong et al., 1993). While this has been shown not to be the case, one study shows the pass rate of women on physical agility tests in the departments surveyed at 47.3% compared to the male pass rate of 83.9% (Hulett et al., 2008). This disparity in the pass rate can often be contributed to the physical test that is given and the validity of that test to firefighting duties (Fox, Hornick, Hardin, 2006). For example, a study looking at the success rates of the candidate physical ability test, CPAT, showed a female pass rate of 68% over the reported pass rate of women at 49% that took other physical agility tests (Hulett et al., 2008). CPAT test results have been recorded as fairly similar between male and female candidates.

One study found that concerns with women's physical fitness level did contribute to the disparity in genders within the fire service (Marohl, 2002). The military has similar concerns dealing with the physical ability of women to do the tasks they are assigned. Experts agreed that there are women physically capable of doing the same military tasks as men (Willens, 1996). For example, the belief that women could not withstand the same G-forces that a man could, kept women from combat aviation. This belief was proven to have no merit (Willens, 1996). Women are now allowed to fly combat missions if qualified.

Studies have shown that both women and men have higher pass rates if they are knowledgeable about the testing policies and have the opportunity to practice prior to the exam (Hulett et al., 2008; Marohl, 2002). Some departments have taken advantage of this knowledge by running training programs for prospective candidates, giving out gym passes, offering pre-tests etc. in order to properly preparing candidates for job placement (Fox et al., 2006).

Another problem found in the hiring process for both written and physical exams is that they are weighted by scores (Hulett et al., 2008). Meaning a candidate with higher scores will automatically get the job whether the candidate is the best choice or not. By maintaining a passing level instead of a score allows a larger pool of qualified candidates to choose from to ensure the best employee possible for the position is chosen (Fox, et al., 2006). Like the physical agility exams written exams have also come into question as showing favoritism to one group over another. For example, SAT scores for women have been shown to be lower than men even though girls statistically have better grades in school than the boys do (Horn, 1990)

Pregnancy and child rearing has also been targeted as problems with bringing women into the fire service (Armstrong et al., 1993). Some leaders feel that by hiring women that they will have higher loss work days due to injuries and pregnancies (Armstrong et al., 1993).

Military statistics showed only a very small increase in sick time use of women over men and found that if the pregnancy cases were removed from the numbers women actually used less sick time than their male counterparts did (Willens, 1996).

Women firefighters have expressed issues with the responsibilities of family and job (Armstrong et al., 1993). Even in modern society children are often looked on as the mother's responsibility and this can cause issues for the woman firefighter from external sources as well as with internal conflict. If a mother does not have to worry about the condition or care of children they can perform much better on the job (Mathis, 2000).

Recruitment

In order to increase the number of women firefighters the fire service needs to be smart about their recruitment techniques (Fox, Hornick, & Hardin, 2006). For example, the measure of success cannot rely on the number of women that apply for positions but how many qualified women are placed in fire service positions (Armstrong et al., 1993). Furthermore the retention of these qualified firefighters has to be evaluated. If women leave the fire service after only a couple of years the number of women firefighters that are able to move up the ranks in order to serve as future role models is severely hindered (Willing, 1994).

Different groups and genders are reached in different ways in terms of advertising (Barlette, 2010). Studies have shown that minorities are more likely to hear about firefighter jobs through formal advertising than word of mouth (Fox et al., 2006). That is to say that the fire service may need to spend more money on public advertising to entice more women into the profession. Women tend to care for the details of an advertisement more than men do (Barlette, 2010). Research also shows that women and other minorities are more concerned with the ideals of inclusion and diversity than the traditional male firefighter (Fox et al., 2006). Meaning the

advertisement may need to actually use the words such as diversity, respect and inclusion. The visual cues may need to focus on diverse individuals as well as acceptance.

Two separate studies conducted on the recruitment issues of women in the fire service suggests that word of mouth through active recruitment may be the most significant tool available in recruiting women firefighters (Marohl, 2002; Niggeler, 2006). The fire service for many has been a matter of family tradition for men and now for women as well (Willing, 1994). It is suggested that the word of mouth be used in active recruitment of women to make them feel wanted in the service. Firefighters should be personally inviting civilian women with the traits to make a good firefighter to apply for positions just like they would for men.

The visibility of women in the recruitment efforts of other women has been thought to be an important factor in recruitment campaigns (Marohl, 2002). Women and other minority groups are more likely to apply for positions in organizations that appear to already be diverse and culturally inclusive (Fox et al., 2006). Not only does the department have to use the words of diversity but they must be able to demonstrate to the public their commitment in the process to best attract minorities (i-women, 2010).

Introductory programs such as an explorer post through the Boy Scouts can be a great place to indoctrinate young women on the fire service (Armstrong et al., 1993). The Blaze program on the west coast is a great example of an organization showing young women what it is like to be a firefighter (PBS, 2010). One study suggested that the local community college sponsor leadership camps for young women in the area to promote awareness in the community that women can perform the tasks of a firefighter (Marahl, 2002).

Where the fire service recruits women may be just as important as how the recruitment is done (Marohl, 2002). Not everyone is cut out to be a firefighter due to job characteristics such as,

outdoor environment, physical labor and paramilitary structure (Armstrong et al., 1993).

Recruitment efforts should be concentrated in areas where women exhibit a desire for these types of activities such as gyms, vocational trades, military bases, or civic groups (Marohl, 2002).

The International Association of Women Firefighters, point out that a successful woman recruitment program does not only involve the recruitment staff but the entire organization has to be involved (i-women, 2010). Before recruiting minorities a check needs to be done to ensure the organization is ready to include the group (Fox et al., 2006). Using women as an example, the department needs to ensure appropriate gear and facilities are available for women firefighters. The organizations needs to ensure the department is properly trained to be inclusive and the benefits of diversity (i-women, 2010). Niggeler (2006) suggests that the use of a recruitment team can help with the planning process that needs to occur before successful recruitment can occur.

Many men and women both choose the fire service for the rewards that it can bring (Armstrong, et al., 1993). The literature suggests that maybe these rewards alone are not enough to recruit qualified candidates from the hectic life that women and men lead. Other incentives may need to be offered. For example, single parents and both parents working are becoming more common in our society. If parents feel secure about the care of their children they are able to perform on the job better. Therefore programs such as child care should be considered by fire organizations (Mathis, 2000). This could be especially helpful in times of community crisis. It is hard for any firefighter to concentrate on helping others if the fate of their own family is uncertain.

If the fire service is to raise the number of women in the fire service it can not only focus on recruitment but common sense dictates that the retention of qualified and experienced women

firefighters needs to be a priority as well. Studies suggest several reasons for women to leave the fire service but some stand out, that are correctable. One study found that the top three reasons women leave the fire service are; the male dominate culture, lack of a support system, and hostile co-workers (Niggeler, 2006). Fire departments need to have an inclusive culture towards women in order to maintain them within the ranks (Murphy & Murphy, 2010; Willings, 1994). Without a visible presence of happy women firefighters in an organization the recruitment of other women only gets harder.

Summary

Unfortunately women firefighters are still subjected to archaic gender stereotyped attitudes (Halton, 2010). The literature review suggests that a male dominated culture is a contributing factor to the disparity of women in the fire service. More specifically the literature pointed to items such as testing procedures, inadequate gear and facilities, a lack of inclusion and the perception of the firefighter job itself contributing to the disparity between men and women in the fire service. The literature review did offer hope as other professions work to increase their gender diversity individual fire organizations have also made significant improvements in the area of inclusion and diversity.

The literature review not only pointed out issues and possible cures in the fire service at the national level but also the local level including support organizations such as Halifax Community College. One study suggests that technical colleges can help increase the number of women in the fire service through recruitment, networking, mentoring and education (Marohl, 2002). For this to occur colleges like Halifax Community College must work to maintain positive relations with area fire departments so all of the organizations can work together toward the same desired outcome (Marohl, 2002).

The literature review found a great deal of information and writings on the topic of gender diversity inside and out of the fire service. The review found some troubling issues on the topic as well though. For example, while there was much written on the topic much of it was older works. Some of the most comprehensive writing on the topic was found in the 1990's with some good follow ups in the early years of the turn of the century. Another interesting thing found is that much of the literature brought out the same issues, problems, and possible solutions. This in itself would not be a bad thing as it points to the reliability and validity of the works, but it is troubling that with all this collaboration the problem has remained relatively stagnate for approximately twenty years.

The review of literature did find some studies and work in the field of gender diversity in the fire service. Studies were found in all three categories, quantitative, qualitative, and mixed methods. A majority of studies on the topic were geographically isolated, self reporting surveys though. By being geographically isolated there are questions as to the reliability of the studies across the entire fire service. While self-reporting surveys are an appropriate tool for social research, they offer the limitation of reporting the participant's individual experience from their perspective. This does allow for participant biases to creep into the results. There was limited consensus work found in the literature review in the realm of gender diversity in the fire service with the exception of a few studies and a few papers.

The literature review showed that the problem is not only limited to the local area of the researcher but exists as a serious national problem. Manolakes (2001) calls gender diversity one of the most crucial internal issues facing the modern volunteer fire service in the country. Taking the literature review and conversations with fire service leaders into account it was decided that a geographically reliable study would be more beneficial for this project versus a geographically

isolated study. The literature review showed a national firefighter population of over one million (USFA, 2010). For a sample population to be valid with a confidence level of 95% and a confidence interval of 5% would take over 384 returned samples (MaCorr, 2010). This type of sample would still only focus on self reported answers. It was decided to use a group of experts from across the country to weigh in anonymously with a consensus as to what they perceived the issues are in regard to gender diversity in the American fire service. This form of study was not found in any of the studies in the literature review. It was thought that this study methodology may offer new and different insight on the problem and may go to further validate previous research done on the topic in different manners.

PROCEEDURES

This descriptive study used a three round, Delphi study method to focus on the following research questions: Why do women choose not to pursue the fire service as a career or service? Why do women choose to join the fire service? What unique barriers are there for women to become firefighters? What are the best potential opportunities to recruit and retain women in the fire service? These questions were asked using a mixed method of qualitative and quantitative questions over three rounds. The three rounds of questions each built upon the previous round allowing the experts to come to a group consensus.

The Delphi method of research was pioneered by the RAND Corporation where it was originally used as a forecasting tool (Loo, 2002). The Delphi method has since been found to be a valid and reliable tool for social research (Keeney, Hasson, & McKenna, 2006; Kennedy, 2004). The Delphi method has the ability collect expert perspectives from a large geographical region (O'Connor, 2006; Valdez, 2008). This has allowed the method to shed new light on complex issues (Loo, 2002; Sproull, 2002). The core concepts of the Delphi method rely on the

anonymous responses of the expert panelists as they work through iterations of the study to come to a group consensus to answers of the research questions (Skulmoski, Hartman, & Krahn, 2007). Consensus in a Delphi study is typically accepted as value of 80% or greater (O'Connor, 2006; Valdez, 2008). This study used the 80% of agreement or disagreement to indicate consensus.

This study used a mixed methods variation of the Delphi method to explore questions concerning gender diversity in the fire service. A mixed methods approach can be beneficial in a study as it allows the qualitative and quantitative differences to complement each other to provide a better picture of the phenomena being explored (Gilbert, 2006; Newman, 2006). The study is considered mixed method as it asked both open and closed questions to the panel (Skulmoski et al., 2007). Round 1 questions were all open ended, qualitative, allowing the participants to answer with no restraints, preconceived ideas or biases being introduced by the researcher (Creswell, 2009). Qualitative research is good for looking at complex problems and offering new insight (Leedy & Ormrod, 2005). Qualitative approaches can be useful in social research where it is hard to isolate or identify the variables involved in finding the answers (Glicken, 2003). These qualitative questions allowed the participants to discuss what they felt were factors in each of the questions presented.

The round 2 questionnaire was quantitative in nature asking the panel to numerically score the answers that the collective panel had presented in round 1 of the study. Quantitative questions allow for the study to more narrowly focus on an issue (Creswell, 2009; Neuman, 2006). Round 3 was also quantitative in nature as it asked the same questions as round 2 did. The round 3 information also contained the average response of the expert panel to allow them to come to a consensus of each issue for each question.

This study method consisted of asking questions to a purposefully picked panel of experts. The participants were selected based on their background in gender diversity issues in the American fire service. For this study an expert was defined as a female firefighter that was still active in the fire service with at least five years of service. Each expert had a background with gender diversity issues in the American fire service. Participants' qualifications in gender diversity ranged from mentor to national speakers and advocates for gender diversity. Participants ranged in rank from firefighter to chief officer. Participants were geographically dispersed across America. All experts voluntarily participated in the study with no compensation provided for the study. Experts were approached by the researcher based off of articles written, internet searches, and personal contacts made through this study's progress. The Delphi method has been found to be successful with as few as three experts to over one-hundred experts with no notable effect on the end result based on the number of participants (Skulmoski et al., 2007). For this study the panel consisted of ten experts in the field of gender diversity in the fire service.

The survey instruments for this study were modeled after those used in a Delphi study concerning emergency room nurses used by Valdez (2008). Due to modifications made to the original survey instruments for this study, a field test and pilot test were conducted of the survey instruments prior to the study being conducted. The study was field tested before being piloted or administered. See Appendix A for a copy of the field test letter. The initial participant letters, round 1 questionnaire, and format of round 2 questionnaire was sent to both academic and firefighter professionals for review. Small changes were made to the questionnaires based off the field testers' comments in the area of word usage for readability and correctness.

The actual survey instruments were developed and administered electronically using the web based tool Survey Monkey (Survey Monkey, 2010). Participant letters were written in word

documents. All study information was passed electronically through e-mail or through the survey instruments in Survey Monkey.

With the changes made to the study based on comments from the field testers the study underwent a pilot test. See appendix B for a copy of the pilot test letter. Where a field test merely looks at the instrument's functions a pilot test is a small scale trial run of the study to search out problems in the study format (Beauchamp & Childress, 2009). Experienced local female firefighters were recruited to pilot the program. The pilot test did reveal a glitch with the electronic survey instrument in round 2 that was easily fixed. No other problems were found. The respondents were polled following the pilot test and they found the study understandable and even commented on it being enjoyable to participate in. It was noted that the respondents in the pilot test took the survey very seriously with enlightening responses that turned out to be similar to the final study results adding to the reliability of the study.

After the completion of the pilot test the actual study was conducted. Participants had been selected based on their expertise on the subject of gender diversity in the fire service. Each expert completed a demographic form that described their demographic information as well as their accomplishments in the field of gender diversity. See appendix C to view a copy of the demographic letter. Ten experts participated in round 1 of the study. See appendix D and E to view the participant letter and round 1 questionnaire. The experts answered the round 1 qualitative questions which were coded into like themes for the round 2 questions to be developed. See appendix F and G to view the round 2 participant letter and questionnaire. The participants recorded their level agreement or disagreement through a seven point Likert scale during round 2 of the study. The round 3 questionnaire consisted of the same responses as round 2 for the experts to reconsider their previous responses. The round 3 questionnaire also included

the average response from round 2 for each response. This was provided so that the experts could judge their view on the response to the overall group to help them reassess their responses. See appendix H and I to view the round 3 participant letter and questionnaire. Following the completion of round 3 all responses were calculated to determine if a minimum of 80% consensus was achieved in agreeing or disagreeing with the answers to each question. The responses were also ranked according to the groups of overall response as indicated with the 7 point Likert scale.

The safety and security of all participants was a major concern looked at in this study. There was no unusual risk noted to participants or organizations in participating in this study. All participant information was held confidential by the researcher and kept secured. Participants were given unique identifiers to keep their names confidential to everyone but the researcher. The researcher only used the unique identifier to track survey participation not actual answers. The participants' responses were grouped to provide anonymity to the author. All participants in the field test, pilot study and actual study were provided with contact information of the researcher including email address and cellular phone number in the event that questions, concerns or comments arose.

To move forward with the research certain assumptions had to be made concerning the study. One of the assumptions made was that all of the selected gender diversity experts had a good understanding of the gender diversity issue within the fire service. Another assumption was that each of the panelists answered the questions honestly and to the best of their ability based on the knowledge they have towards the issue to ensure a proper implementation of the Delphi process. It was further assumed that the problem of gender diversity shares many of the same

contributing factors that can be related across the country's fire service organizations thereby being reliable and of use to all fire departments in the country.

As with any study, this study did have limitations. A Delphi study can range from as few as three experts to over a hundred with no set technical requirement (Skulmoski et al., 2007). More experts were originally desired for this study. Twelve experts were selected for this research ensuring a good breakdown of rank, diversity, geographical location and experiences. Due to a few selected experts dropping out prior to the collection of data there were no participants from the West Coast. It is thought that with the similarity of firefighting across the country and the responses versus the literature review that this study is still reliable across the United States. It was also found that with nine experts there was a great deal of repetition in the answers provided suggesting that more experts may not have made much of a difference in the study's conclusions or reliability. Another limitation of the study is that with a limited number of experts being purposefully selected that there may be other factors influencing the research questions that were not thought about with the current group of experts. The survey instruments were developed for this study. It is possible as they had not previously been proven that they could have unintentionally introduced research biases. Through the field and pilot test it is hoped that any problem with the survey instruments has been minimized allowing for reliable results.

RESULTS

The results from this study reinforced some of the beliefs and ideas found in the literature review as well as some new and interesting light on the topic of gender diversity in the fire service. The results from this three round mixed method Delphi study focused on the following research questions: Why do women choose not to pursue the fire service as a career or service? Why do women choose to join the fire service? What unique barriers are there for women to

become firefighters? What are the best potential opportunities to recruit and retain women in the fire service? It should be noted that the panel looked for the primary root issues for each question. As noted by one panelist “These apply in various cases.” meaning that there may be more and diverse reasons in different situations. The experts focused on what they considered the primary reasons are currently in the US fire service.

The first round questionnaire consisted of qualitative open ended questions that solicited unprompted answers from the ten experts. Each question was provided with ten blank fields for the expert to fill in possible answers to the questions. The experts were also provided with a text box where they could explain any issue that they felt was important to the question. These answers were then broke down by the researcher into common themes for each question to be used in round 2 of the study. Each question generated between 18 and 28 common themed answers for use in round 2 and 3 of the study.

Round 2 used the common themed answers from round 1. The questions were quantitative styled using a seven-point Likert scale for the experts to rank their level of agreement or disagreement with the proposed answer. By ranking answers this allowed the study to find agreement to the answers and a level of agreement to prioritize results later. Round 2 responses began to informally show a pattern of the fire service culture and stereotypical views of women as leading issues in gender diversity. While many of the proposed answers met consensus standards in round 2 over a dozen did not, requiring a round 3 of the study.

Round 3 of the study consisted of another survey instrument with the same answers to each question as the round 2 survey had. In round 3 the participants were also given the mean score of the group for each answer provided. This allowed the participant to look at their answer choice in comparison with that of the other experts to work towards a consensus answer.

Question 1

With regards to the first research question: Why do women choose not to pursue the fire service as a career or service? The panel found a variety of reasons. Twelve primary factors contributing to women not being a more predominate part of the fire service were agreed upon through anonymous consensus of the expert panel as outlined in figure 1. Agreed upon factors ranged from the highest ranking of time away from family to lack of prominent female firefighter role models, to fire departments did not portray a diverse picture. The leading theme to this question seemed to be the perception of firefighting being a man's job and the characteristics perceived to be needed to be competent in firefighting tasks. As shown in figure 1, five of the top six answers found to the question of why more women do not choose the fire service had to do with perceptions. For example, the answer that ranked second highest by the experts is the belief that women are not strong enough to complete the tasks of firefighting. The third highest ranked answer for the question was that society itself sees firefighting as a man's task. This was evident in the literature review as the term fireman was noted to be used very frequently in both firefighter written literature and civilian written literature. Even the answer indicating that many do not understand the technical aspects concerned with firefighting indicates a perception issue still exists by many as to what the job of the firefighter is.

Many of the answers from this study were expected based on the literature review. The pilot study conducted also accurately predicated some of the answers provided by this study. For example, the strong male culture was predicted to be an answer to why more women are not recruited and/or retained in the American fire service. The experts did present this issue and agreed that it was a factor but it was not scored as high as the literature review may have led one to believe it would be. In fact, the male culture ranked eleventh out of the twelve leading factors

the expert panel agreed on. Fear of verbal harassment was ranked an issue but as the lowest agreed upon leading reason which was lower than expected after the literature review was conducted.

Surprising some of the other issues brought forth in the literature review such as sexual harassment, unfair testing policies, and discrimination were all brought forth and deliberated on by the expert panel but were not agreed on as being primary factors keeping women out of the fire service. Communal living arrangements was brought forth by the expert panel as well but not considered to be a primary reason for women not becoming firefighters. All of these were issues that were brought out in the literature review, but were not found to be as important to the question as these issues of perception, family obligations and the male culture.

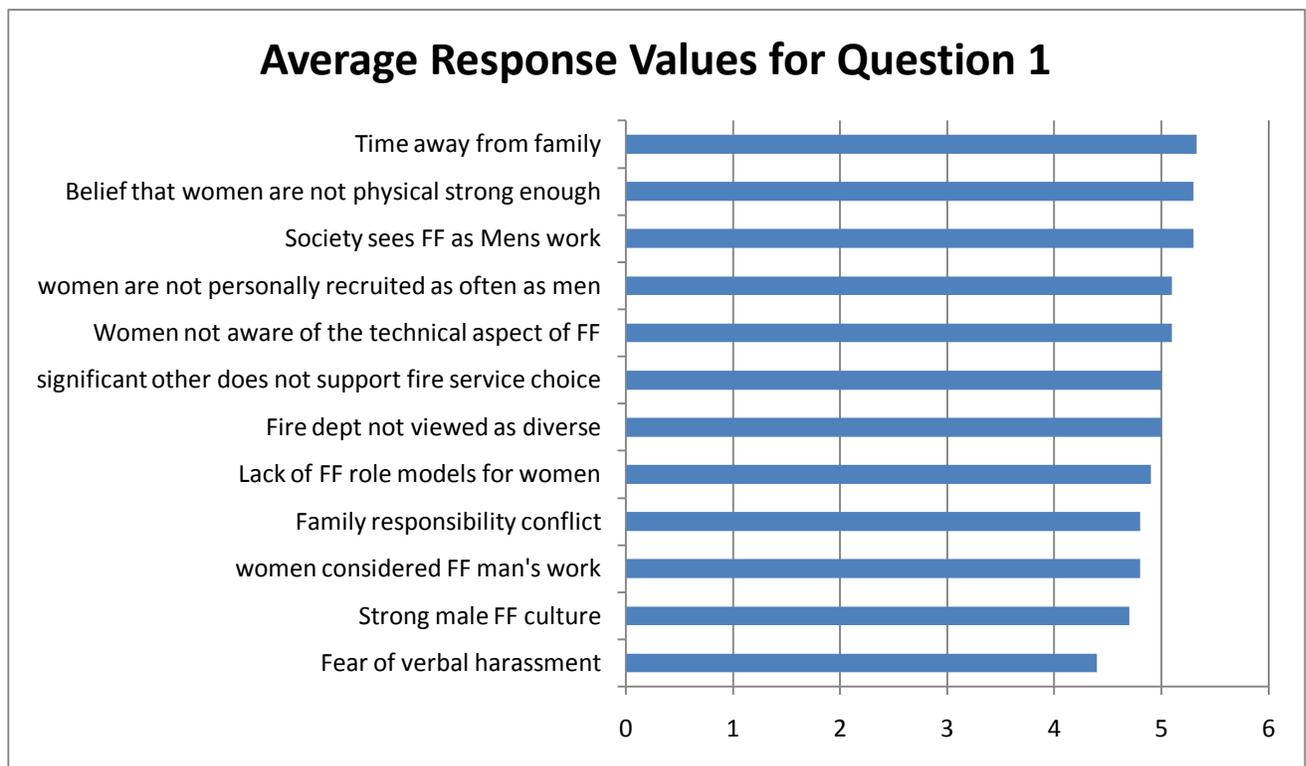


Figure 1. Indicates the average response from the expert panel for question indicating primary reasons women may not seek employment and/or volunteer in the American fire service.

Question 2

The second question of the research study explored why women do join the fire service. The twenty-one agreed upon answers varied from desire of helping others, to looking for a change in occupations as shown in figure 2. The highest marks dealt with the individual's traits of wanting to help and serve. The top three agreed upon reasons and five overall reasons for women being in the fire service dealt with the traits of the women themselves. This echoes the results of the literature review and the pilot study participants that many firefighters, men and women, are drawn to the profession due to their own values and beliefs.

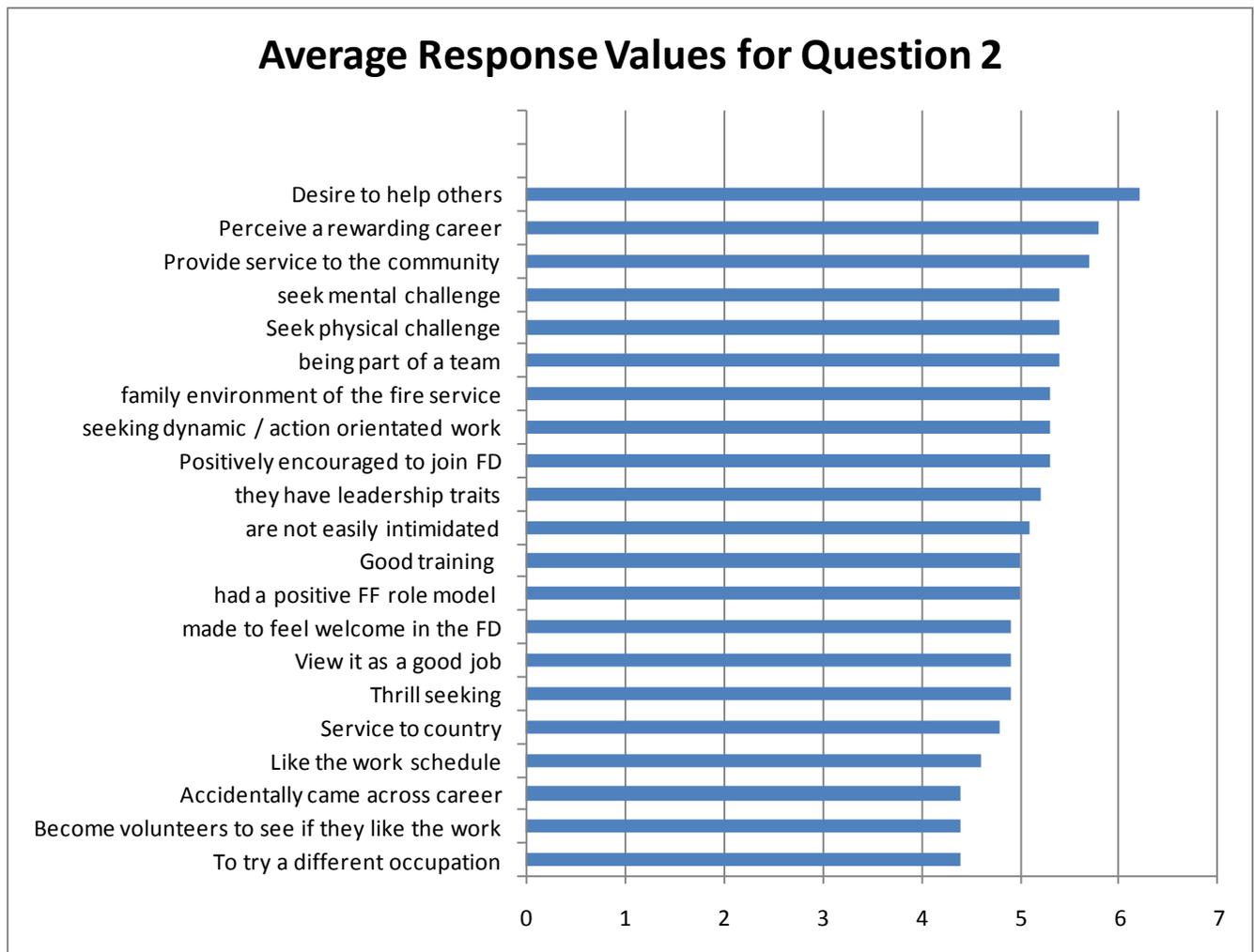


Figure 2. Indicates the average response from the expert panel concerning question #2, examining why women do join the fire service.

The individual traits were found in this study to be a highly motivating factor to women joining the fire service. This is similar to the findings of the literature review that certain personality types are drawn to the fire service. As shown in question 2 responses traits such as the desire to be challenged physically and mentally both were agreed on as factors drawing women into the fire service. One expert commented “A woman has to have already identified her preference of work styles, know what she wants in terms of workplace environment (office work versus hands on work).” This follows the findings of Hulett et al. (2008) that not all women, or men, are looking for the kind of work that firefighting presents.

The study results suggest that the fire service is looked upon by many as a good job. The study brought forth the work schedule, the challenges, training and rewards of the job are all positive influences on women joining the fire service. The work schedule was found to be a positive answer for why women do become part of the fire service. Contrarily, time away from family was found to be a reason why women do not join the fire service.

Family is a theme that was presented several times by the expert panel. The responses to question 2 listed the family atmosphere of the fire service and the desire to be a part of a team as reasons for women to be a part of the fire service. The panel did bring forth the question of whether or not team or family loyalty of the fire service conflicted women causing them to not report indiscretions or harassment by coworkers to superiors. While this was considered it was not brought forth in the study as a primary contributing factor to women not participating in the fire service.

Question 3

The third question asked the expert panel what unique barriers are there for women to become firefighters. The answers to this question were similar to the ones in question 1, as to

why women do not join the fire service. This makes sense, if the barriers or challenges are too much to overcome then one is likely to choose a different path. The panel agreed on twelve primary barriers that women face as outlined in figure 3. The overall theme to this question focused greatly on the fire service's dominating male culture and the stereotyping that is found in many fire organizations. Again it should be pointed out that the panel focused on what they perceived to be the primary factors as one panelist remarked "There are barriers everywhere you look for female firefighters, you just have to know what to take seriously and what to brush off."

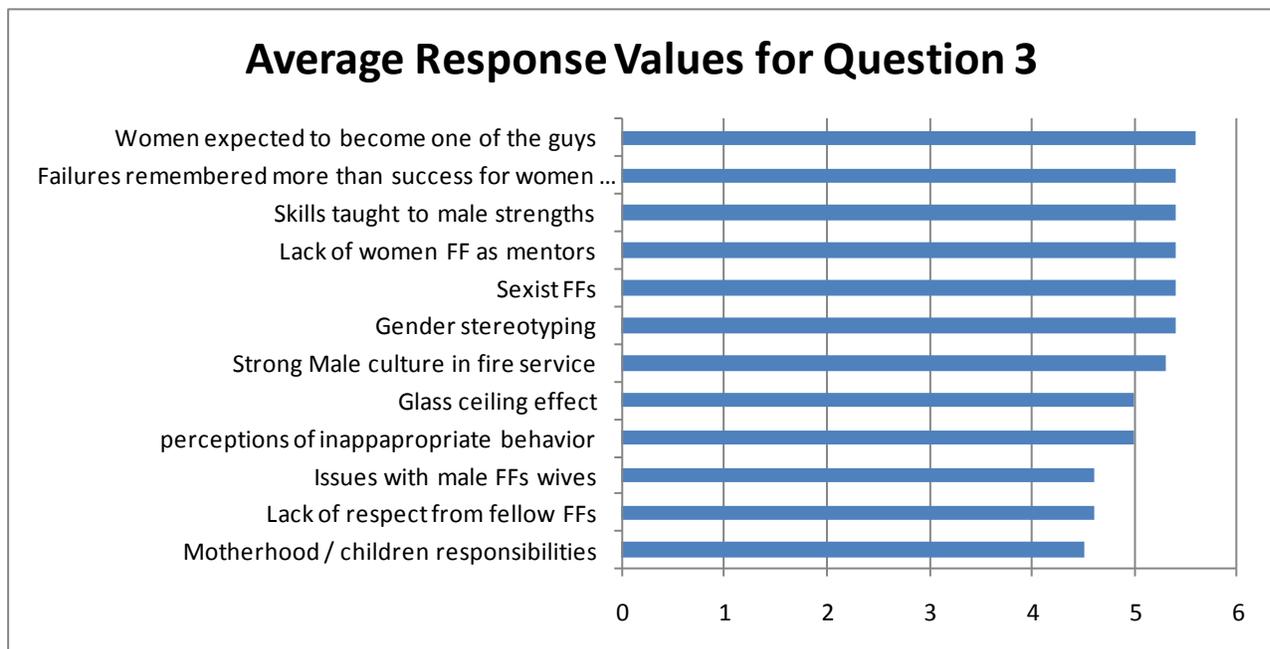


Figure 3. Indicates the average response from the expert panel concerning question #3, examining the unique barriers that women face in the fire service.

The responses to this question reflected on the lack of inclusion within the fire service of different groups. The highest ranking response to this question was that women are expected to become one of the guys to fit in. This exemplifies the lack of inclusion and also suggests a lack of understanding of the fire service as a whole as to what true diversity is and the benefits that come with all of the different perspectives of true diversity.

Interestingly, the agreed upon responses to the barriers to women focus more on issues of sexism, discriminatory issues such as the glass ceiling effect, and lack of respect than did the first question asking why there were not more women in the fire service. This may indicate that the barriers are still there but they are not the primary causes of women not pursuing firefighting. This may be a testament to the personality traits discussed in question 1 or the suggestion that the fire service still has these problems but they are not as predominate as they have traditionally been.

Barriers external to the tasks of firefighters were noted in the responses to the unique barriers that women face in the fire service. For example, the perceptions of improprieties and the external influences from the wives and girl friends of male firefighters were both indicated as barriers. For example, one panelist commented “Anytime that a woman spends more time with a male co-worker than the rest of them; others will deem that it is an inappropriate relationship.” This suggests that women firefighters have to be as aware of the perception of their actions to others as much as the action itself.

As important as it is to recognize the agreed upon answers by the expert panel in this study to unique barriers to women in the fire service, it is just as important to discuss the responses that were not agreed on as unique barriers. For example, the panel did weigh in on physical agility exams and the physical aspects of the tasks of firefighting and did not rank these as primary unique barriers though the literature review and the local pilot study did indicate physical demands and testing a barrier to women perspective firefighters. Another interesting response was the thought and rejection that pregnancy issues were a primary barrier. This may indicate that the fire service, as other organizations have, has come to terms and means to deal with the problems associated with pregnancy on the job.

Question 4

The fourth and final question asked of the panel was what can be done to improve recruitment techniques of women in the fire service. These answers supported much of the literature review ideas. The expert panel agreed on nineteen of the responses that were brought up as areas in which the fire service should concentrate more on to recruit and retain quality women firefighters as shown in figure 4. The leading theme from the question concerned improving the inclusiveness of the organizations from stronger enforced policies to better diversity training. The study points to inclusion as more of an issue than blatant harassment as demonstrated with one panelist comment "I am not talking about blatant sexual advances or sexually explicit comments. I am talking about the guys taking bets on which one will get the news reporters phone number or other behavior that is typically described as guys being guys".

Question four asked the expert panel to weigh in on the most important steps the fire service needs to take to recruit and retain women firefighters. Many of the recruitment ideas brought forward focused on demonstrating to young girls that it is possible and rewarding for them to become active in the fire service. For example, exposing young girls to successful women firefighters, the development of vocational programs, and making women firefighters more visible to the public all could change the perspective of future candidates that women can function as firefighters. One panelist described the importance of making women firefighters visible as "pictures of women who do the job, showing that you don't have to look like a goddess nor a man to be in this position." suggesting the need for realistic advertisement and public relations to create a more accurate picture of the woman firefighter.

Another interesting series of response brought forward by the expert panel deals with training. Training was brought up by the panel in two main formats. The first is that better

diversity training needs to occur within the fire service itself and the general public as well. This includes the concept of the diversity and the benefits that can be realized through a truly inclusive work environment. The other issue agreed on by the panel is to teach fire skills to the strengths of the female students, not just to the male strengths.

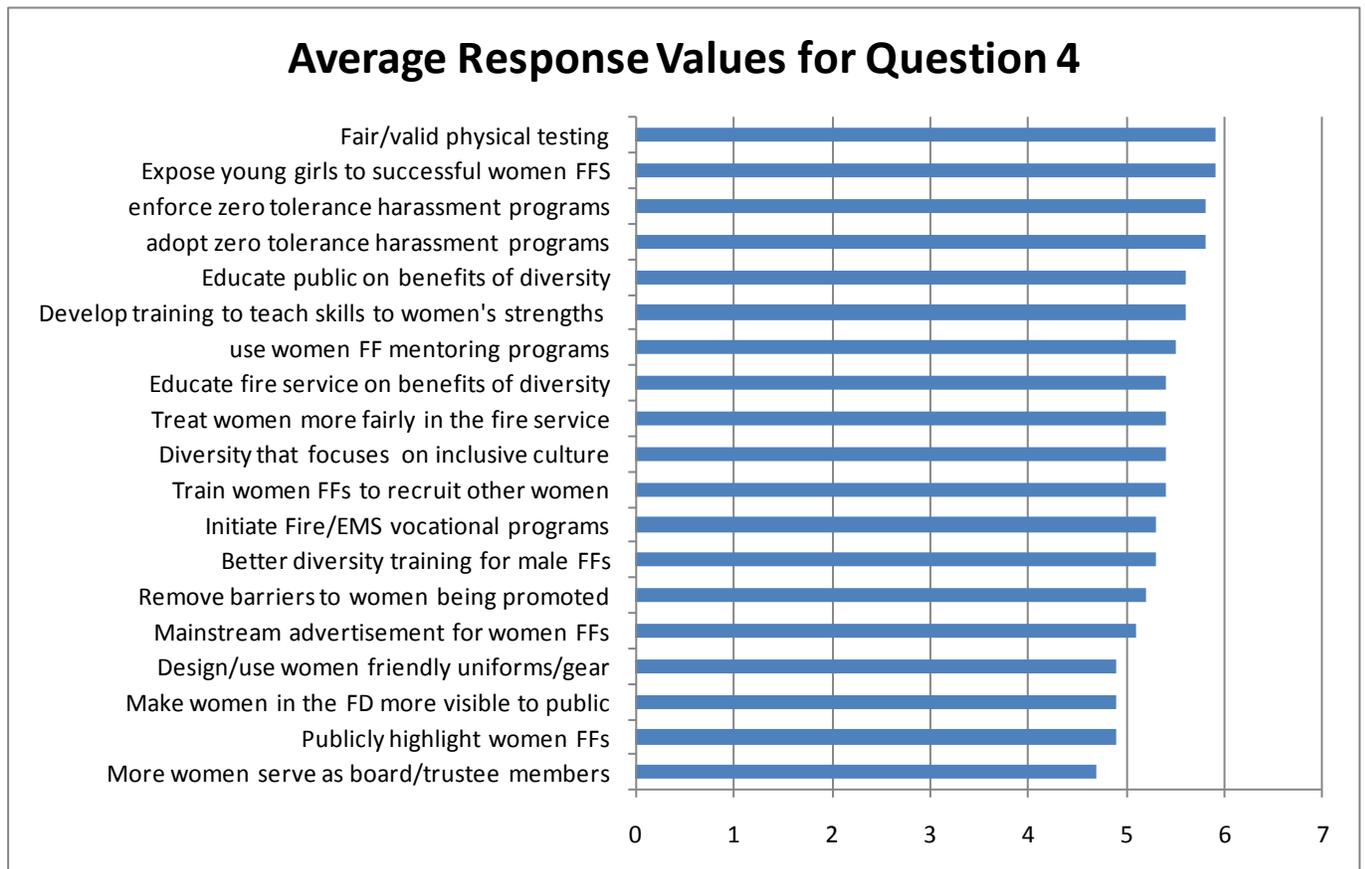


Figure 4. Indicates the average response from the expert panel for primary considerations the fire service may want to explore in order to recruit and retain quality women firefighters.

Though inclusion seemed to be the major theme, harassment issues were agreed on as needing attention for the retention and recruitment of women. It was brought forward and agreed on that departments needed to adopt zero tolerance harassment policies and to properly enforce the policies. This was noted as a reoccurring recommendation through the literature review as well and often referred to as a leadership obligation.

It should be noted that even though issues such as ill fitting gear, training methods, and lack of mentoring programs were not highlighted by this study as reasons for women not to chose the fire service All these issues were indicated as issues to recruit and retain more women in the fire service. This suggests that those with the desire to be firefighters maybe willing to overcome some barriers and obstacles. It also suggests that more effort placed on recognizing the differences of women will increase the feeling of inclusion, raising the number of women in the fire service. This may be summed up with the agreed on response of treating women more fairly. This is a fairly general statement that suggests a lot. One generalized the situation by giving the example “Women should not be expected to always do the cooking and clean up in the fire station.”

DISCUSSIONS/IMPLICATIONS

The purpose of this research project was to examine why more women are not working and/or volunteering in the fire service. In conjunction with this primary question this study also explored possible solutions or best practices to recruit more women into the fire service. It is hoped that by filling this gap in knowledge that tools can be developed to increase the gender diversity of the American Fire Service as well as that of local area fire training programs such as the one at Halifax Community College in North Carolina.

The literature review and the study both showed that gender diversity is still an issue in the fire service. While some organizations have made great strides in gender diversity the fire service as an overall entity still has a long way to go (i-women, 2010). The study confirmed many of the same issues causing a lack of women firefighters are still the same issues that were found almost twenty years ago. For example, this study suggests that a leading root cause of the gender diversity issue in the fire service is the organizational culture of the fire service itself.

This is the same conclusion offered by many others through the literature review (Batson, 2008; Hulett et al., 2008; Manolakes, 2001; Marohl, 2002; Whipple, 2008)

This study showed, as did the literature review, that the general culture of the fire service is still not a totally inclusive environment that is efficiently conducive to a diverse work group. This is a real problem when one considers the benefits of diversity in the workplace and the benefits the fire organizations are missing out on (Murphy & Murphy, 2010). It is also a problem in considering the demographic shift that America is undergoing and will continue to undergo for decades to come (D'Intino, 2006). That is to say that the fire service will have to recruit more minorities in order to keep up the work force numbers. This is especially true in the volunteer service where firefighter shortages are already having adverse affects on the organizations as well as the communities they serve (Carter, 2005). It is going to be difficult to bring in different groups to supplement declining workforce numbers if the culture is not inclusive (Whipple, 2008). This in fact could cause terrible workplace confrontations or even cause a shift in the dominate culture in a different direction but still not be diverse or inclusive to all.

Culture can be a hard thing to change. While there are things such as training, rules, and practices that can be modified to help make changes in today's fire service culture more permanent changes are needed (Friemuth, 2006). It was pointed out in the study that more successful women firefighter role models need to be shown to the community. By doing this it will help to break the cultural idea that firefighting is a man's work. This study points to role models, interaction with young women, and education for a change in the number of women being recruited into the fire service. These are all things that can be done early in the life of the communities' female population. Coyle (2010) showed that the impressions of possibilities can be placed on children at young ages and that the toys they play with can have an effect. Young

girls across America want to be singers because of Hannah Montana and other successful women singers they see on the television. This makes one wonder what the outcome would have been if Johnny Gage from Emergency in the 1970's was cast as a woman firefighter. The media does a great job of portraying firefighters as heroes, courageous, and worthy role models. They may need to do a better job of portraying firefighters as diverse, inclusive and brain over brawn to help the fire service quench the disparity of gender in the fire service.

The common perception of what a firefighter is and does versus what a woman is capable have been found by this study and the literature review to be very different things. These perceptions internal and external of the fire service are providing barriers to the fire service becoming more gender diverse. For example, a large portion of society sees the firefighter as a strong man. This might be related to the traditional image of a firefighter surviving with brawn over brain, but as any firefighter knows the job is becoming more technical all of the time. Large portions of society still raise their girls with traditional values of what girls can do when they grow up. The fire service needs to work to change this image in a path similar to law enforcement, the military and other traditionally male dominated professions that now women participate in.

This study did show some progress in the fire service in the realm of gender diversity. For example, past writings showed unfair physical agility tests and sexual harassment as reasons for women not joining the fire service. These issues were brought forward and considered by the expert panel of this study, but not agreed on as primary factors. This could mean that the fire service is making progress in these areas. After decades of pushing the diversity topic forward it is conceivable and desirable that the message is making a difference.

The implications of this study for the fire service at large are many as it helps to validate previous studies as well as points the direction in which the fire service needs to proceed in order solve the issue of disparity amongst the genders in the fire service. For example, the study pointed to stereotyping of women as a significant challenge for women coming into the fire service. This was confirmed in the literature review as well especially in respect to physical ability (Manolakes, 2001; Whipple, 2008). The study offers that this can be overcome with education and mentoring. The literature is overwhelmed with ideas on how to create more valid physical testing procedures (Armstrong, et al., 1993; Huellet et al., 2008).

One of the biggest implications of this study is the way that it points at the root causes of the problem instead of the symptoms. For example, unfair physical agility tests are not the true problem, the problem relates back to a firefighter culture that puts emphasis on upper body strength over endurance because that is the traditional thought. The invalid physical agility tests therefore are a symptom of the bigger problem. The fire service can continue to treat the symptoms in hopes that the problem will cure itself but that is kind of like a doctor only treating the pain of a cancer patient and ignoring the cancer itself. The patient may feel better for a short time, but eventually the patient is going to become less functional and finally terminal.

The implications of this study for local support organizations such as Halifax Community College are twofold. First, the same issues that tend to keep women from the fire service may be found in these support organizations as well. It is important for these support organizations to actively look for negatively impacting issues and find ways to improve them. This is critically important because support organizations, especially training are expected to be setting the right example and distributing the latest in ideas and concepts (Marohl, 2002). For example, teaching fire tasks to a man's strengths was found to be a problem in this study. To ensure this is not

happening locally, Halifax Community College will need to ensure they are giving students differing perspectives in training and try to ensure they are teaching women firefighters to their strengths when needed. This can be seen in Emergency Medical Services Training where some female students may have problems with certain skills because of their size and the design of the equipment such as stretcher operations and bag valve mask usage. In these instances the college has women instructors come and teach techniques that work for them. This same concept needs to be examined for the fire related classes as well.

The second part of the implication for support organizations such as Halifax Community College is that to a large degree they are at the mercy of the prevailing fire service culture. That is to say that if the college wants to teach fire skills to women's strengths it would be best done by a woman firefighter. If the local fire service has resisted women in the fire service or resisted any becoming instructors it will be hard for the college to find an appropriate instructor. This also affects the number of women that come into the fire service. If women do not see something of interest or have decided that the fire service is not worth the effort because of what they see at the local department they will not come to the first fire class. This becomes a vicious circle. If the training institutes cannot get them in the classes they cannot get to the departments. If the departments scare them away due to not looking inclusive they will not come to class. Local training agencies will have to work hard with local fire departments to create a culture of inclusion to recruit and retain more qualified women firefighters to allow the program to grow and progress.

RECOMMENDATIONS

The study and the literature review brought forth many issues in the realm of gender diversity that has the opportunity for improvement. Both the study and the literature review

brought forth several good ideas to remedy some of the problems with regard to gender diversity in the fire service. The following recommendations can be made from this study.

Recommendations for the American Fire Service

The current overall culture of the fire service is still a major problem in trying to close the gap in disparity between men and women firefighters. A culture of an organization can be a hard thing to change as it is based on the values and beliefs of the group. There are some steps that can be taken to begin the change of the current culture though. For example, the development and active administration of zero tolerance harassment policies should be implemented in organizations that are short in this area. These policies need to ensure that everyone understands that harassment of any type to any group or individual will not be acceptable behavior.

Training and education is another area that changes can be influenced in the fire service culture. The training recommended should be geared to inclusion and the benefits of diversity. Often diversity training is looked on negatively or even as punishment by the participants. These training events should be kept upbeat focusing on the good that can occur for the organization and the individuals.

It is the researcher's philosophy following this study that while some changes to culture can be made now, that a more permanent change needs to occur. The values and beliefs of those entering the fire service must be in favor of inclusion and believe in the benefits of diversity welcoming it. It is recommended that the fire service begin working to change the public perception, especially that of children, as to what the fire service is about and that women can and have functioned admirably in the service at every task and every rank. The fire service as a whole should become more public relations orientated and should put forth a diverse face within these public relation campaigns.

It is recommended that the fire service strengthen its current efforts to put forth more successful women firefighters to the public so that it is easily seen that women can become successful firefighters. The literature review found some organizations were doing well with this such as The International Association of Women Firefighters, The North Star Women's Firefighter Association and others. Unfortunately, the literature review found these programs to be the exceptions and not the rule. With more exposure to women firefighters it will be more accepted as a possibility as seen in professions such as police officers and the military now are.

The fire service should be taking a careful look at all candidate testing to ensure that it is valid and reliable. This is important for all candidates. Furthermore it is recommended that fire departments consider using pass/fail for written and agility tests in order to keep larger pools of qualified candidates to hire from. It has also been shown that candidates will perform better if they have been properly educated on the process and the testing requirements. It is therefore recommended that fire departments adapt pretesting training for potential candidates.

Ill fitting gear may cause poor performance on tests and on the job. More seriously, poor fitting gear can lead to firefighter injury and/or death. It is recommended that the fire service and individual organizations look at the fit and function of gear for all firefighters. It is further recommended that continued emphasis be put on research exploring the functionality of all firefighter gear to include the diverse use of the gear and the diverse user.

It is recommended that organizations consider following through with activities to get young women interested in the fire service. For example, explorer posts or leadership seminars could be used for causing interest in young women towards the fire service. Vocational programs brought to the high schools or community colleges could be beneficial in this way as well. It is

further recommended that larger organizations such as regions, states, or federal look at emulating projects such as the BLAZE program in the Northwest portion of the country.

It is the recommendation of this paper that women mentoring programs be put into place by organizations. Mentoring programs can help new hires or volunteers learn the ins and outs of the trade from a perspective similar to their own. A mentoring program can also help the new firefighters avoid common pitfalls that cause firefighters to leave the job early.

It is recommended that the fire service put forth a training manual for instructors to use that will help them teach to different strengths. This publication may include how to teach women to use their endurance over body strength. It could be used to teach left-handed students to tie knots naturally. It could even be used to train candidates with certain disabilities that normally may have been thought to be unable to complete firefighting tasks.

Recommendations for Halifax Community College

It is recommended that Halifax Community College should work with local fire departments to spotlight local women firefighters to the public. This could include using women firefighters as speakers at women functions and career day festivities at the college. This could help to show the public that women can function as firefighters. This recommendation includes increasing the use of women fire instructors in area fire classes.

It is recommended that the college offer diversity training to the local fire departments. The training should highlight inclusion and the benefits of diversity. Classes of this nature have already been developed for use in the fire service. The United States Fire Association has created two such programs that are free to organizations (USFA, 2010).

It is recommended that the college invest in mainstream advertising for the fire service classes aimed at women. This advertisement could take place in local medias such as television,

radio, and newspapers. It should be noted that the literature review found free advertisement campaigns for women already developed by the United States Fire Association (USFA, 2010).

The only cost left to the individual organization is the cost of advertisement space.

It is recommended that the college works with local fire departments to recruit more women into the volunteer service to help workforce shortage issues. This may help to allow more women to enter the local fire service where there is a workforce shortage in the volunteer companies. Women in these departments could help to ensure better staffing resulting in safer firefighting activities.

Recommended Research

Research is an important part of any profession's growth (Neuman, 2006). The fire service stands to benefit from continued research in technical issues as well as social aspects. With programs such as the National Fire Academy's Executive Fire Officer Program, research fellowships and the increasing number of firefighters pursuing graduate level degrees the opportunity for research is continuing to grow. While this study accomplished what it set out to do, it or no other study, should be accepted as the definitive answer. Therefore it is recommended that future studies be done.

There is a lot of conjecture and thoughts about the current fire service culture but little empirical data on the true culture of the fire service. Research should be conducted to explore this culture. This will give researchers a better picture of where the fire service is as a baseline. With a baseline as a gauge researchers will be able to evaluate different tactics and levels of success or failure. It will also give more of an indication as to what level the culture plays in the issue of diversity or other issues facing the fire service.

It may be possible that perception of inclusion is so different between the majority and the minority that problems are not understood. It is recommended that an Ethnographic type of study be conducted concerning gender differences in the fire service. A system of observations and interviews could be used to look at the individual's perception of inclusive behavior. This type of study could compare the difference between self reported attitudes and realistic attitudes in the fire service.

It is recommended that a study be conducted concerning the public perception of women firefighters and the ability for young girls to become firefighters. It may be useful to break such a study down by age groups and cultural backgrounds. By breaking perceptions down by groups it would allow for more specific advertising and recruiting campaigns to be developed to increase gender diversity in the fire service.

This study and the accompanying literature review focused almost completely on current firefighters. The group that is still silent in this question is those young ladies that did not choose to become a part of the fire service. It is recommended that studies be conducted using the women that did not choose to be firefighters as participants to find out from their experience why they did not choose the fire service as a career or a service.

It is apparent that there are still social stereotypes of gender specific careers in society. It would be prudent to conduct a study on the influences of young girls into different types of careers. This might give insights into at what age children are susceptible to career planning and what would it take to inspire young girls to become firefighters.

This study suggested that women mentoring programs could be a major benefit to newly hired females in the fire service. A study exploring the successes of women with women mentors

versus male mentors versus no mentors could be enlightening. This type of research could help to develop best practices in the retention of new hires.

It is further recommended that variations of this Delphi study be conducted as well. It is believed that this study is scientifically valid and reliable a follow up study could do a few things. Follow up studies could further verify the reliability of this study through a different expert panel(s). A follow up study by an organization such as the International Association Women Fire Emergency Service or the International Association of Firefighters would probably attract a different panel of experts. It is further suggested that the study be broke down into smaller subsets for more pinpoint results. For example, a study for paid women firefighters and a separate for volunteer women firefighters.

While the this study showed many of the same issues facing women in the fire service today that were apparent decades ago this study does show progress. The fire service has many organizations, groups and individuals working constantly to close the gap on the gender disparity issue. The final and most important recommendation of this paper is that these important efforts continue. Diversity is a useful tool and the fire service needs more qualified applicants on the paid and volunteer sides of the house. The positive changes that need to be realized within the fire service to correct diversity issues will need to come from within the fire service. It is recommended that each person that views this study pass on the importance of the issue as well as the information they gleaned from the work that everyone put into this study to help to make for a stronger American fire service.

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Appendix A EFO ED ARP Field Test Letter

Dear _____:

Thank you for your interest in participating in this field test for the study to examine why more women are not involved in the fire service. The field test is designed to enhance the reliability and validity of the survey instrument being used in this Delphi study. The field test survey is being provided to you in an online format, which will require that a unique identifier is entered at the beginning of the questionnaire. **Your unique identifier is _____**

The survey is estimated to take approximately 30-45 minutes. You do not have to answer the actual questions, though you can if you wish to, you are merely being asked to comment on the questions in regard of content and form.

Please note that you will be asked to verify that you agree to participate in the study in Part I of the survey.

Participation is voluntary and you are able to stop participation at any time, without penalty. If you choose to complete the online survey, once you have finished reviewing all items in the survey, click the submit button to submit your feedback. To **access** the online field test survey, go to
<http://www.surveymonkey.com/s/73T7NH2>

(or copy and paste this Web address into a browser).

Please complete the survey by June 25, 2010.

If you have any questions/comments, please feel free to contact me at
Kupietzk@halifaxcc.edu or cell 252 532 1242

Thank you again for your participation!

Sincerely,

Kevin Kupietz

Executive Development Student, NFA EFO program

Appendix B EFO ED ARP Pilot Test Letter

Dear _____:

Thank you for your interest in participating in this pilot test for the study to examine why more women are not involved in the fire service. The pilot test is designed to enhance the reliability and validity of the survey instrument being used in this Delphi study. The pilot test survey is being provided to you in an online format, which will require that a unique identifier is entered at the beginning of the questionnaire. **Your unique identifier is _____**

The survey is estimated to take approximately 30-45 minutes. Please participate in the study instruments as directed. Please pay attention to the workings of the survey instrument and whether it makes sense to you or not. You will be asked to comment at the end of the pilot test on the study itself concerning ease of use, readability and workability.

Please note that you will be asked to verify that you agree to participate in the study in Part I of the survey.

Participation is voluntary and you are able to stop participation at any time, without penalty. If you choose to complete the online survey, once you have finished reviewing all items in the survey, click the submit button to submit your feedback. To **access** the online field test survey, go to <http://www.surveymonkey.com/s/73T7NH2> (or copy and paste this Web address into a browser).

Please complete the survey by July 12, 2010.

If you have any questions/comments, please feel free to contact me at Kupietzk@halifaxcc.edu or cell 252 532 1242

Thank you again for your participation!

Sincerely,

Kevin Kupietz

Executive Development Student, NFA EFO program

Appendix C Demographic Information from Prospective Gender Diversity Study Participants

Thank you for volunteering to help with this research project into Gender Diversity issues in the fire service. Please complete the following form for demographic and contact information about yourself and email it back to me. The information that you provide will be treated in a confidential matter and will only be used to qualify participants for the study, to provide a generalized description of the participant group, not the individuals and for contact information should the researcher (myself) need to contact you for some reason concerning the study. If you have questions please feel free to contact the researcher: Kevin Kupietz, kupietzk@halifaxcc.edu or cell 252 532 1242.

Thank you for your help

Permission

I am expressing my interest in participating in the dissertation study that examines the problem of gender diversity within the fire service. I am voluntarily providing the requested information for consideration in this study and understand there will be no compensation for participating in this study.

Full Name:

Work Title:

Email Address:

Telephone Number:

What time zone do you live in:

Gender:, please "x" next the appropriate response.

Female

Male

Other than being female do you feel there is anything else that makes you a minority in the fire service? Please explain.

Are you currently active in the United States Fire Service yes no

In what capacity do you currently function primarily in the fire service? Please "x" next to all that apply.

Line

Administration

Training / education

Support

Other please specify

Please indicate the number of years you have in the fire service.

<5 5-10 10-15 15-20 >20

Please indicate what titles you have held in your career in the fire service. Please “x” next to all that apply.

Firefighter Driver/Engineer Company officer Chief Officer
EMT

Fire Instructor Fire Educator (higher education) Fire inspector

Safety Officer

Please check the following levels of education that have. Please “x” next to all that apply.

Diploma/GED Associate degree Bachelors Degree

Masters Degree Doctoral EFO

Other Please describe

Have you published articles or literature related to firefighter gender diversity?

Yes No

Have you actively been involved in professional development in the area of firefighter gender diversity at the local, state, national or international level? Have you been active in promoting gender diversity in the fire service? If so please briefly describe. Please include major fire safety courses or certifications you received in your career.

When you have finished this please email it back to me at kupietzk@halifaxcc.edu Again thank you for your help

Appendix D EFO ED ARP Gender Diversity Round 1 Letter

Dear _____:

Thank you for your interest in participating in this study to examine why there is a disparity of women in the fire service compared to men. This study is designed to fill a gap in the academic knowledge as to why the fire service is not able to recruit/retain more women and what can be done to help the situation. This study will use the proven Delphi method to explore the subject. The premise of the Delphi method is that a group of subject matter experts (You) will come together anonymously to a consensus concerning the research questions based on your perspective of the problem as it effects the fire service. It is expected that this will take three rounds of questionnaires with each questionnaire taking approximately 30-45 minutes.

At the conclusion of this study I will email a copy of the final project to any participant that desires it.

Please note that you will be asked to verify that you agree to participate in the study in Part I of the survey.

Participation is voluntary and you are able to stop participation at any time, without penalty. If you choose to complete the online survey, once you have finished reviewing all items in the survey, click the submit button to submit your feedback.

To **access** the online field test survey, go to <http://www.surveymonkey.com/s/FXG5QVQ> (or copy and paste this Web address into a browser).

You will be asked to put in your unique identifier for tracking / confidentiality reasons. **Your unique identifier is _____**

Please complete the round 1 survey by August 9, 2010.

Questions on survey the survey for your preview:

Please list items that you perceive to be reasons why women may not seek employment and/or volunteer in the American Fire Service.

Please list what you perceive as being primary reasons why women do chose to participate in the American Fire Service.

Please list what you perceive as unique barriers that you see for women to become firefighters and/or to remain in the fire service.

Please list what you perceive to be the most important steps that the fire service needs to take to recruit and retain a higher number of women within the fire service.

If you have any questions/comments, please feel free to contact me at

Kupietzk@halifaxcc.edu or cell 252 532 1242

Thank you again for your participation!

Sincerely,

Kevin Kupietz

Executive Development Student, NFA EFO program

Appendix E Round 1 Questionnaire Gender Diversity Study

Thank you for volunteering to help with this study on women in the fire service.

Instructions: The items in this questionnaire have been designed for use in a study examining gender diversity issues in the American Fire Service. Please type in as many of the issues that you feel are relevant to the question based on your expert opinion.

Feel free to explain anything that you feel is important in the text boxes.

Thank you for your time and help in this important topic.

If you have questions please feel free to contact the researcher, Kevin Kupietz, at kupietzk@halifaxcc.edu or cell phone 252 532 1242

1. Please enter your unique identifier number provided to you in your email.

2. I am voluntarily participating in this study.

YES, I would like to participate in this study.

No, I would not like to participate in this study.

comments

2. Gender Diversity round 1 Part II

Please answer the following questions based on your expert opinion concerning the topic of women in the fire service. Use the text box below the question to explain anything that you feel needs extra explanation.

1. Please list items that you perceive to be reasons why women may not seek employment and/or volunteer in the American Fire Service.

Answer 1:

Answer 2:

Answer 3:

Answer 4:

Answer 5:

Answer 6:

Answer 7:

Answer 8:

Answer 9:

Answer 10:

2. Comments to question #1:



3. Please list what you perceive as being primary reasons why women do chose to participate in the American Fire Service.

Answer 1:

Answer 2:

Answer 3:

Answer 4:

Answer 5:

Answer 6:

Answer 7:

Answer 8:

Answer 9:

Answer 10:

4. Comments on question #3:



5. Please list what you perceive as unique barriers that you see for women to become firefighters and/or to remain in the fire service.

Answer 1:

Answer 2:

Answer 3:

Answer 4:

Answer 5:

Answer 6:

Answer 7:

Answer 8:

Answer 9:

Answer 10:

6. Comments on question 5:



7. Please list what you perceive to be the most important steps that the fire service needs to take to recruit and retain a higher number of women within the fire service.

Answer 1:

Answer 2:

Answer 3:

Answer 4:

Answer 5:

Answer 6:

Answer 7:

Answer 8:

Answer 9:

Answer 10:

8. Comments on question #7:



Appendix F EFO ED ARP Gender Diversity Round 2 Letter

Dear _____:

Welcome to round 2 of 3 for this study. Thank you for your participation in this study to examine why there is a disparity of women in the fire service compared to men. The round 1 responses were great. This study is designed to fill a gap in the academic knowledge as to why the fire service is not able to recruit/retain more women and what can be done to help the situation. This study is using the proven Delphi method to explore the subject. The premise of the Delphi method is that a group of subject matter experts (You) will come together anonymously to a consensus concerning the research questions based on your perspective of the problem as it effects the fire service. It is expected that this will take three rounds of questionnaires with each questionnaire taking approximately 30-45 minutes.

At the conclusion of this study I will email a copy of the final project to any participant that desires it.

Please note that you will be asked to verify that you agree to participate in the study in Part I of the survey.

Participation is voluntary and you are able to stop participation at any time, without penalty, though please remember at this point a Delphi study is much more accurate if all members that start the study finish the study. Once you have finished reviewing all items in the survey, click the submit button to submit your feedback.

To **access** the online field test survey, go to

<http://www.surveymonkey.com/s/PZM8M8Z>

(or copy and paste this Web address into a browser).

You will be asked to put in your unique identifier for tracking / confidentiality reasons.

Your unique identifier is _____

Please complete the round 2 survey by Saturday August 28, 2010.

If you have any questions/comments, please feel free to contact me at

Kupietzk@halifaxcc.edu or cell 252 532 1242

Thank you again for your participation!

Sincerely,

Kevin Kupietz

Executive Development Student, NFA EFO program

Appendix G Round 2 Questionnaire Gender Diversity Study

1. Default Section

Thank you for volunteering to help with this study (round 2 of 3) on women in the fire service.

Instructions: The items in this questionnaire have been designed from your combined responses in round 1 of this study examining gender diversity issues in the American Fire Service. Please rate each of the given responses as to your level of agreement that the response is accurate to the question based on your expert opinion.

Feel free to explain anything that you feel is important in the text boxes below.

Thank you for your time and help in this important topic.

1. Please enter your unique identifier code that was included in your invitation email.

*** 2. I am voluntarily participating in this survey on Gender diversity in the fire Service.**

Yes I am

| | | | | | | | |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Adopt zero tolerance harassment programs. | <input type="radio"/> |
| Actively enforce zero tolerance harassment rules. | <input type="radio"/> |
| Use women firefighter mentoring programs. | <input type="radio"/> |
| Have more women serving as trustees / board members. | <input type="radio"/> |
| Other (please specify) | <input type="text"/> | | | | | | |

Appendix H EFO ED ARP Gender Diversity Round 3 Letter

Dear _____:

Welcome to round 3 of 3 for this study. Thank you for your participation in this study to examine why there is a disparity of women in the fire service compared to men. The round 1 & 2 responses were great. This study is designed to fill a gap in the academic knowledge as to why the fire service is not able to recruit/retain more women and what can be done to help the situation. This study is using the proven Delphi method to explore the subject. The premise of the Delphi method is that a group of subject matter experts (You) will come together anonymously to a consensus concerning the research questions based on your perspective of the problem as it effects the fire service. It is expected that this will take three rounds of questionnaires with each questionnaire taking approximately 30-45 minutes.

At the conclusion of this study I will email a copy of the final project to any participant that desires it.

Please note that you will be asked to verify that you agree to participate in the study in Part I of the survey.

Participation is voluntary and you are able to stop participation at any time, without penalty, though please remember at this point a Delphi study is much more accurate if all members that start the study finish the study. Once you have finished reviewing all items in the survey, click the submit button to submit your feedback.

To access the online field test survey, go to

<http://www.surveymonkey.com/s/97NV9C9>

(or copy and paste this Web address into a browser).

You will be asked to put in your unique identifier for tracking / confidentiality reasons.

Your unique identifier is _____

Please complete the round 3 survey by Saturday August 28, 2010.

NOTE: This third round will work towards a consensus of all of the experts in this study. Please keep in mind the provided average for each response as you respond to the level of agreement

that you have with the response to the questions. Remember as you answer that you are answering for what you feel is relative to women in general in the fire service.

If you have any questions/comments, please feel free to contact me at
Kupietzk@halifaxcc.edu or cell 252 532 1242

Thank you again for your participation!

Sincerely,

Kevin Kupietz

Executive Development Student, NFA EFO program

Appendix I Round 3 Questionnaire Gender Diversity Study

1. Default Section

Thank you for volunteering to help with this study (round 3 of 3) on women in the fire service.

Instructions: The items in this questionnaire have been designed from your combined responses in round 1 of this study examining gender diversity issues in the American Fire Service. Please rate each of the given responses as to your level of agreement that the response is accurate to the question based on your expert opinion. Next to each response is a number representing the average response of the group from round 2. Please consider the average response as you mark your level of agreement with the statement as the study is attempting to come to a consensus.

Feel free to explain anything that you feel is important in the text boxes below.

Thank you for your time and help in this important topic.

1. Please enter your unique identifier code that was included in your invitation email.

*** 2. I am voluntarily participating in this survey on Gender diversity in the fire Service.**

Yes I am

| | | | | | | | |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Spouse/significant other does not support the fire service as a choice. (4.13) | <input type="radio"/> |
| Do not understand the shift schedules. (2.75) | <input type="radio"/> |
| Family responsibilities conflict. (3.75) | <input type="radio"/> |
| Those hiring are threatened by women. (3.88) | <input type="radio"/> |
| Fire departments not understanding the importance of diversity. (5.0) | <input type="radio"/> |
| Women are not personally recruited as often as men. (5.53) | <input type="radio"/> |
| If you feel you need to explain any item please do so here. | | | | | | | |
| <input type="text"/> | | | | | | | |

*** 2. Please rate your level of agreement to the responses of what you perceive as being primary reasons why women do chose to participate in the American Fire Service.**

| | Do not agree at all (1) | Strongly disagree (2) | Somewhat disagree (3) | Agree (4) | Somewhat agree (5) | Strongly agree (6) | Adamently agree (7) |
|--|-------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| To prove women can do the job of a firefighter. (4.0) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| To try a different occupation. (4.83) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Desire to help others. (5.13) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Thrill seeking. (4.88) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| They feel it will be a rewarding career. (5.25) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| They were positively encouraged to participate in the fire service. (4.75) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Looking for dynamic, action orientated work. (5.14) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| They had a good role model in the fire service. (4.75) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Provide service to the community. (5.38) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Service to country. (5.00) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Being a part of a team. (5.35) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| The family environment of the fire service is appealing. (4.75) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| They have leadership characteristics. (5.25) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| They are not easily intimidated. (4.35) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Enjoy physical challenge. (5.0) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| They enjoy mental challenge. (5.0) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Become volunteers to see if they like the work. (4.5) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Accidentally came across firefighting as a career. (4.88) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Like the work schedule. (4.38) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| View it as a good job / career. (5.13) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Recruited by diverse minded department. (4.88) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Made to feel welcome in the fire house. (5.0) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Women firefighters are/were visible in the fire house. (4.13) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Good training. (4.50) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Please use this space to explain anything that you feel needs explanation.

*** 3. Please rate your level of agreement to the responses of what you perceive as unique barriers that you see for women to become firefighters and/or to remain in the fire service.**

| | Do not agree at all (1) | Strongly disagree (2) | Somewhat disagree (3) | Agree (4) | Somewhat agree (5) | Strongly agree (6) | Adamently agree (7) |
|---|-------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| The physical aspect of firefighting. (3.88) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Physical tests that are unfair to women. (3.38) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Harder to get initial chance to prove self. (5.00) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Motherhood and responsibility to children. (4.75) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Pregnancy issues. (3.88) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Lack of respect from fellow firefighters. (4.88) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Gender stereotyping. (5.25) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Sexist firefighters. (5.50) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Strong male culture in the fire service. (5.50) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Women must become one of the guys to be accepted. (5.38) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Dating issues / being "hit on". (4.75) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Perceptions of inappropriate conduct. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Male firefighters "coddling" female firefighters thinking they need assistance. (4.25) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Lack of women firefighter mentors. (5.38) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Skills taught to male strengths not women. (5.00) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ill fitting gear and uniforms. (5.38) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Glass ceiling effects. (5.14) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Failures are remembered better than successes for women. (5.63) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Perception of public concerning firefighter vs. motherly obligations. (3.25) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Issues with male firefighters wives. (4.25) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Team loyalty makes reporting exclusive or wrong behavior hard. (4.25) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Remales respond to situations differently than men and this can viewed as weakness by men coworkers. (4.75) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

If you feel you need to explain any item please do so here.

| | | | | | | | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Adopt zero tolerance harassment programs. (5.25) | <input type="radio"/> |
| Actively enforce zero tolerance harassment rules. (5.25) | <input type="radio"/> |
| Use women firefighter mentoring programs. (5.00) | <input type="radio"/> |
| Have more women serving as trustees / board members. (5.25) | <input type="radio"/> |
| Other (please specify) | <input type="text"/> | | | | | | |