

## Research Background

- Firefighting is a physically demanding occupation requiring muscle strength, endurance and anaerobic capacity<sup>1,2</sup>.
- Females perform significantly lower on physical measures simulating firefighting tasks<sup>3,4</sup>.
- Firefighting is traditionally a male-dominated profession
- It might be anticipated that female firefighters experience the job differently than their male counterparts.
- Females working in male-dominated professions experience greater levels of anxiety and job strain<sup>5</sup>, sexism and lower job satisfaction<sup>6</sup>, increased co-worker conflict<sup>7</sup> and psychological stressors that increase injury risk<sup>8</sup>
- Limited research on female firefighters exists.

## Purpose of Study

- To qualitatively determine the positive and challenging aspects of firefighting, effects of the physical environment and stressors encountered by females in a male dominated occupational environment.

## Methods

- **Qualitative study: Phenomenological Design**

### Participants

- 4 female firefighters employed by Hamilton Emergency Services – Fire
- Mean Age: 35.2 years
- Mean Duration of Firefighting: 3.7 years

### Data Collection

- 4 semi-structured telephone interviews (audio-recorded and transcribed)
- Questions were investigator developed to elicit discussion regarding: attitudes about employment, job modifications, injury reports and future recommendations for employers, treatment providers and new female recruits.

### Data Analysis

- Bracket experiences
- Independent coding of transcripts and theme identification.
- Collaboration and agreement on specific themes.

## Identification of Themes

### Physical Demands/Difficulties

- **All participants identified that firefighting is a physically demanding occupation.**

*“[Firefighting] is a very physically demanding job and part of my responsibility was to maintain my physical abilities.”*

### Gender Related Physiological Differences

- **Participants identified inherent physiological differences between males and females requiring females to work harder to maintain their physical capacity.**

*“Females are already 20% not as strong as their male counterparts...so you really have to maintain that, or you’re going to be weaker.”*

### Compensatory Strategies

- **Participants recognized the need for adaptive and compensatory strategies to effectively execute job tasks.**

*“Body mechanics more than anything...the guys can usually manhandle things, I had to learn to use my body a bit more effectively.”*

### Equipment Mal-adaptation

- **Participants consistently identified that ill-fitting equipment compromised task performance.**

*“The boots are always too big on me and bunker pants...everything is just kind of big and fits more loosely because it’s suited more for a man.”*

### Earning Respect

- **It was recognized that although public respect was freely given, peer respect needs to be earned.**

*“You have to earn your stripes basically, you know what I mean...their respect. A lot of women walk right on the job expecting their respect, and you have to earn it.”*



## Attitudes of Male Counterparts

- **Some males demonstrated poor attitudes towards females based on perception of females ability to perform job tasks.**

*“Some people have attitudes that aren’t going to change no matter what you do, no matter how good of a firefighter you are...you’re a woman in a man’s job and you shouldn’t be here.”*

## Recognition of Injury Risk

- **Females strive to overcome male negative attitudes and are less likely to request assistance performing physically challenging job tasks.**
- **Gender differences and equipment maladaptation predispose females to injury. Interestingly, 75% of participants did not identify females to be at greater injury risk than their male counterparts.**

## Conclusion

- Female firefighters experience physical, emotional and psychological challenges in firefighting including both role and gender-specific issues; these are consistent with known role and gender issues<sup>5-8</sup>.
- Attitudes of male colleagues influence female perceptions and help-seeking behaviours.
- Future research to mitigate injury should examine task and consider the interaction between gender and performance demands in firefighting tasks.

### References:

1. Rhea M, Alver BA, Gary R. Physical fitness and job performance of firefighters. J of Strength Condit Res 2004; 18(2): 348-352.
2. Guidotti T. Human Factors in Firefighting: Ergonomic-, cardiopulmonary and stress-related issues. Int Arch Occup Environ Health 1992; 64:1-12.
3. Misner J, Plowman, S, Boileau, R. Performance Differences between Males and Females on Simulated Firefighting Tasks J Occup Med 1987; 29:801-5.
4. Williams-Bell F.M, Villar R, Sharratt MT, Hughson RL. Physiological Demands of the Firefighter Candidate Physical Ability Test. Med and Sci in Sports and Exercise 2009; 41:653-62.
5. Evans O, Setptoe A. The contribution of gender-role orientation, work factors and home stressors to psychological well-being and sickness absence in male- and female-dominated occupational groups. Soc Sci Med 2002; 54:481-92.
6. Bond M, Punnett L., Pyle, J.L, Cazeca, D., Cooperman, M. Gendered Work Conditions, Health and Work Outcomes. J Occup Health Psychol 2004; 9(1):28-45.
7. Beaton R, Murphy S, Pike K, Cornell W. Social Support and Network Conflict in Firefighters and Paramedics. West J Nurs Res 1997; 19(3):297-313.
8. Liao H., Nutting S. Correlates of Work Injury Frequency and Duration Among Firefighters. J Occup Health Psychol 2001; 6(3):229-42.

## Acknowledgment

The authors thank Sue Baptiste Associate Professor, Occupational Therapy, McMaster University for her valuable contribution and insight to this project.

Kathryn Sinden is funded by the CIHR Joint Motion Program.