



# Shoulder to Shoulder: North American Firefighters' Perspectives on Navigating Interventions and Healthcare Choices for Work-Related Shoulder Injuries



**Presenting Author: Dr Joy C. MacDermid**

**Co-Authors:** Temitope Osifeso, Dorala Berinyuy,  
Dr Pulak Parikh, Dr Kenneth Faber



# Faculty/Presenter Disclosure

- **Faculty:** Joy C. MacDermid, PT, PhD
- **Relationships with for-profit and not-for-profit interests:**
  - Grants/Research Support:
    - Canadian Institutes of Health Research (CIHR)
    - Chronic Pain Centre of Excellence for Canadian Veterans (CPCoE)
    - Workplace Safety and Insurance Board (WSIB) Ontario
  - Speakers Bureau/Honoraria: None
  - Consulting Fees: None
  - Other: Editor Journal of Hand Therapy

# Disclosures for Financial Support

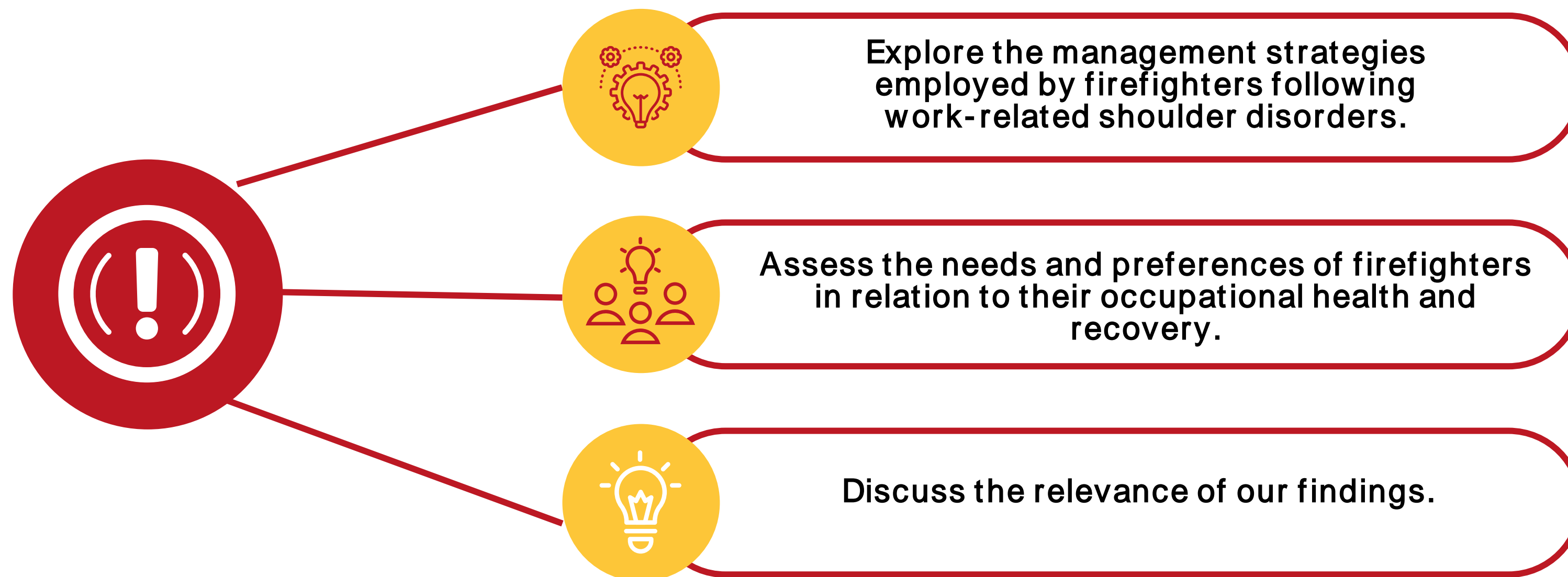
- This program has received financial support from the **Canadian Institutes of Health Research (CIHR)** in the form of **research funds**.
- Potential for conflict(s) of interest: None

# Mitigating Potential Bias

- No biases affecting research

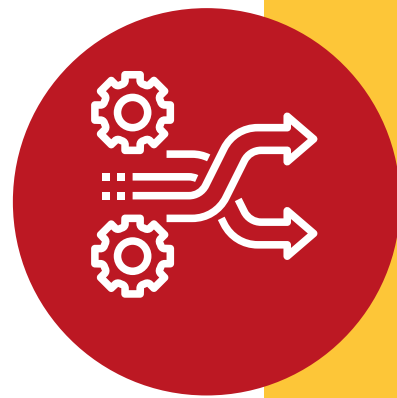


# Learning Objectives





# Did you Know?



Shoulder disorders are the third most common work-related musculoskeletal disorders among firefighters (Tahernejad et al., 2023)

# Introduction

- Firefighting is a physically demanding job that requires a high level of fitness and the ability to perform a wide range of tasks (Nazari et al., 2020; Poplin et al., 2016).
- These strenuous activities influenced by the heavy protective gear and tools used to carry out the tasks inherently increase their risk of developing work-related shoulder disorders (WSDs) (Linaker & Walker-Bone, 2015).



# Methodology

## Interpretive Description

- ID answers questions about a clinical experience and enables clinical researchers to develop a better understanding of the subjective reality of a population of interest (Thorne et al., 2016; Thompson et al., 2021)

## Thematic Analysis

- Braun and Clarke six phases of thematic analysis (Braun & Clarke 2006)





# Results



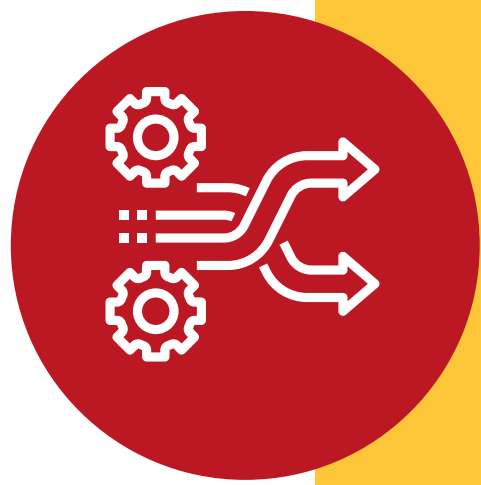
## Firefighter Demographics (N=14)

- Sex (Male, n = 9; Female, n = 5)
- Mean Age (M = 47 years)
- Years of experience (M = 18 yrs)
- USA (n = 6) and Canada (n = 8)
- Caucasian (n = 13)



## Type of WSDs

- Rotator Cuff Tears
- Labral Tears
- Muscle Strains



# Conceptual Model



CIHR IRSC

 Canadian Institutes of Health Research  
Institut de recherche en santé du Canada

 ROTH | M<sup>c</sup>FARLANE  
HAND & UPPER LIMB CENTRE  
ST. JOSEPH'S HEALTH CARE LONDON

 FIREWELL

Western 

# Management Strategies

## Needs and Preferences

5. Formal and targeted training and exercise programs

6. Mandatory health and wellness monitoring program

1. Diagnostic precision and tailored management

2. The critical role of early medical intervention

3. Comprehensive support systems

4. Adaptive Coping Mechanisms

# Management Strategies

## Appropriate diagnostic tools

*"...So, I went to be evaluated, the doctor did some X-rays, nothing was broken and so, we just treated it like a trauma, a deep bruise or strain to my right shoulder and couple weeks went by, it never got any better and so he requested an MRI which showed damage to one of the joints on the very top of my shoulder near the rotator cuff, that it was compressed".* **FF08, Male, RCT**

## Diagnostic insights on treatment planning

*"...We had the MRI, and they saw exactly what was happening, that my courses of action were to be very disciplined with physical therapy both prior to and post-surgery..."* **FF03, Male, RCT**

1.

Diagnostic precision and tailored management

# Management Strategies

## Early detection and treatment

*"...I was able to get in to see an orthopedic surgeon maybe the day after the extreme arm pain began and we got MRI imaging right away with an arthroscopy where they inject dye into your joints and it was noted that I had a labral tear that went from anterior to posterior, like a 180 degrees, so we opted to go the surgery route and fixed it right away so that I could get back to work sooner and off light duty..FFP07, Female, Labral Tear*

## Customized treatment strategy

*"I didn't seek out a physician. I went directly to, you know, our benefits allow us to have extensive physical therapy. And I'm a firm believer in physical therapy. So, I sought out physical therapy to treat the (shoulder) injury..." FF12, Female, Bicep Tendinopathy*

2.

The critical role of early medical intervention



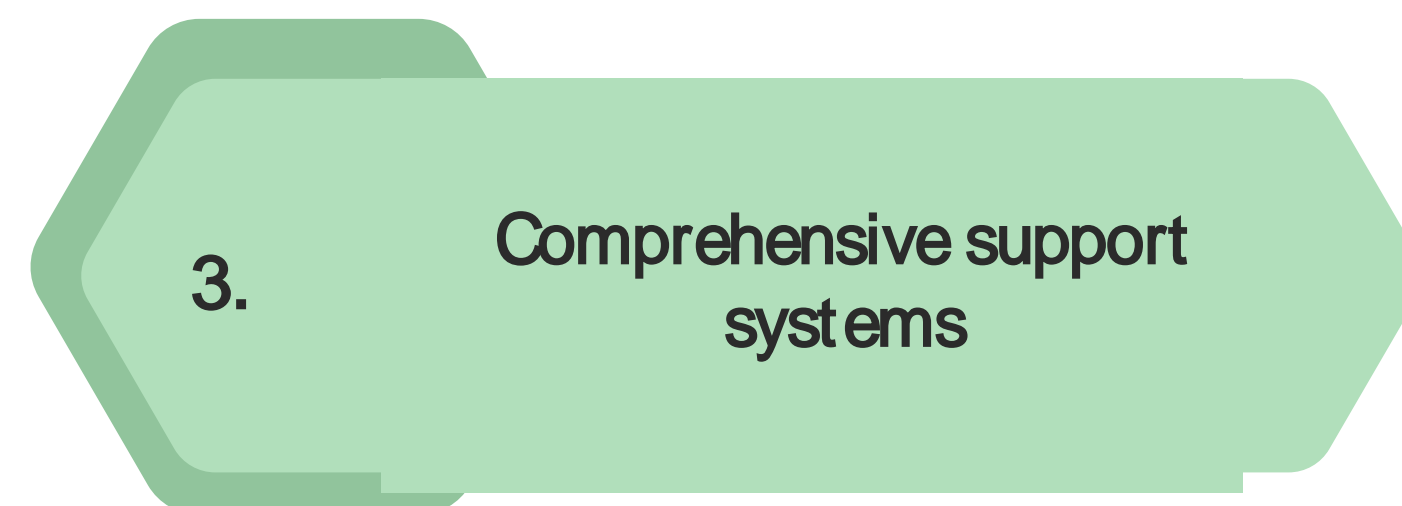
# Management Strategies

## Organizational Support and Workplace Modifications

*"...In terms of my actual workplace, I mean they're very accommodating in terms of modified duties and making sure when I come back to work, I can do the proper exercises I need to, throughout the day and take breaks and ice my shoulder if I need to so, yeah, they've been very good that way".* **FF11, Male, Subscapularis Tear**

## Peer and Family Support

*"Well, you know my wife was aware of it (shoulder injury) so she, so she would take over the kids, and I kind of learned to live around that."* **FF06, Male, RCT**



# Management Strategies

## Workplace and Task-Specific Adaptations

*“It was difficult, reaching behind, so I generally will change the way that I do it, so I generally will put my right side on first and then my left side because the left side I can reach behind me better. Whereas in the past I would do it just habitually, would have done it the opposite way, so I have to do things differently now. Just to make sure I don't irritate it, and that's the same with the SCBA”.* FF14, Female, Labral Tear

## Compensatory Behaviors

*“...So, I just avoid using it (shoulder) a lot, you know like my left arm is not my primary arm, right. So, this would be a lot more difficult than with my right arm because I'm right-handed, but because it's my left arm (affected), I get away with a lot because I don't need to use my left arm a lot except for stabilizing. So, for me I just have coped with it by using my right arm a lot more...”* FF06, Male, RCT

## 4. Adaptive Coping Mechanisms

# Needs and Preferences

## Lack of Mandatory and Specialized Exercise Programs

*"...We're not mandated, we are provided with exercise equipment, but it's not mandatory, no". FF11, Male, Subscapularis Tear*

## Need for Functional and Diverse Training Programs

*"...So, I would say that, you know, create training regimes that are balanced and diverse so that you can recreate diversity of movement rather than sort of like constantly just arm curls or, you know bench presses, right?" FF13, Female, Canada*

5. Formal and targeted training and exercise programs

# Needs and Preferences

## Proactive Health Management

*"...If management doesn't have things in place such as maintaining our physical fitness. You know, regular physicals examinations by doctors, things like that. If they don't have that in place, in writing, in a policy manual, I feel like you will have some firefighters that do absolutely nothing unless the call hits"*  
FF08, Male, RCT

## Legislative Support for Health Monitoring

*"...Well, I know the legislation is coming down the pipe for more medical monitoring and in my opinion, it's a long time. I can't remember the bill. I can't remember the number of the bill, but it's coming that it's going to become mandatory that we have medical monitoring and as long as it's non punitive, I think it'll be a step in the right direction..."* FF12, Male, Bicep Tendinopathy

6. Mandatory health and wellness monitoring program



# Relevance of Findings

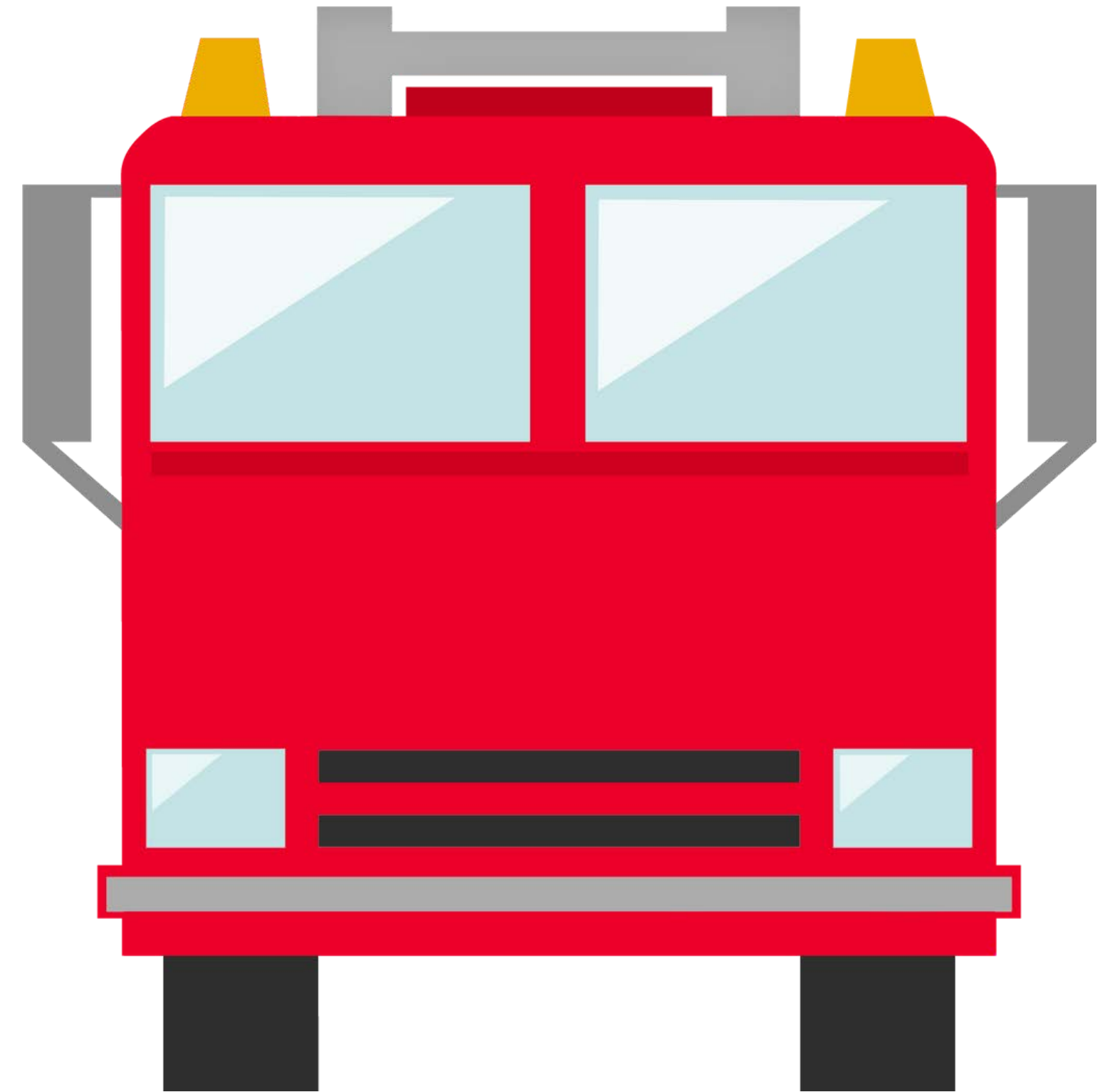
- This study provides valuable insights into the experiences, healthcare choices, and rehabilitation strategies of FFs with WSDs.
- Our study addresses a gap by focusing on their needs, preferences, and management strategies, which can guide future tailored healthcare programs.
- Our findings advocate for more formal, targeted training exercise programs and mandatory health monitoring, both of which are crucial in minimizing WSDs and preventing re-injury.
- Overall, this may help to inform better policies for firefighter health and wellness initiatives.





# Conclusion

- Firefighters' management strategies for WSDs involve a multi-faceted approach that addresses both the physical and psychosocial aspects of recovery.
- Effective management often requires collaboration between firefighters, healthcare professionals, and the fire department to ensure a safe and successful return to duty.



# Limitations

- The reliance on qualitative data may introduce subjective biases in interpreting the experiences of firefighters.
- Findings were predominantly based on self-reported data, which might not always accurately reflect true behaviors or outcomes.
- Lastly, our findings was predominantly reported by North-American Caucasian FFs as there was only one participant with a different ethnic background.



# Future Directions



- Exploring demographic variations, in the management and recovery of WSDs across ethnicities, gender, and job roles could yield critical insights for tailoring interventions.



- Longitudinal studies could provide deeper insights into the long-term efficacy of comprehensive support systems and health monitoring programs.



- Integration of technology and innovation in monitoring and training could offer new insights into more effective management and prevention strategies.

# References

- Tahernejad S, Farahi-Ashtiani I, Veisani Y, Ghaffari S, Sahebi A, Makki F. A systematic review and meta-analysis of musculoskeletal disorders among firefighters. *J Safety Res.* 2023
- Nazari, G., MacDermid, J., & Cramm, H. (2020). Prevalence of musculoskeletal disorders among Canadian firefighters: A systematic review and meta-analysis. <https://doi.org/10.3138/Jmvfh-2019-0024>, 6(1), 83–97.  
<https://doi.org/10.3138/JMVFH-2019-0024>
- Poplin, G. S., Roe, D. J., Burgess, J. L., Peate, W. F., & Harris, R. B. (2016). Fire fit: assessing comprehensive fitness and injury risk in the fire service. *International Archives of Occupational and Environmental Health*, 89(2), 251–259.  
<https://doi.org/10.1007/s00420-015-1068-4>
- Linaker, C. H., & Walker-Bone, K. (2015). Shoulder disorders and occupation. *Best Practice and Research: Clinical Rheumatology*, 29(3), 405–423. <https://doi.org/10.1016/j.berh.2015.04.001>
- Thorne Sally. (2016). *Interpretive Description: Qualitative research for applied practice (Second)*.
- Thompson Burdine J, Thorne S, Sandhu G. Interpretive description: A flexible qualitative methodology for medical education research. *Med Educ.* 2021 Mar 1;55(3):336–43
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.  
<https://doi.org/10.1191/1478088706qp063oa>





# Thank You

FOR YOUR ATTENTION





# Clinicians Recruitment QR Code





**FIREWELL**

# RESEARCH STUDY: FIREFIGHTER WORK LIMITATIONS QUESTIONNAIRE

The FIREWELL team developed a new survey that measures work limitations in firefighters. We need career and volunteer firefighters to help us test it!

## What?

A 10-15 min anonymous survey on the ability to do firefighting tasks .

## Why?

Firefighters need a reliable tool to help identify when health problems limit their ability to do their work roles.

## Who?

Firefighters from around the world



## How?

Scan this QR Code or click the link below!



[Survey link](#)

Principal investigator: Dr. Joy MacDermid, PhD  
QUESTIONS: Please contact [mlomotan@uwo.ca](mailto:mlomotan@uwo.ca)

Please do not write any personal information on the comments or ask questions on the post

Follow us online!

Website: [www.firewell.ca](http://www.firewell.ca)

Twitter: @FIREWELLHealth

Facebook: @FIREWELLHealth

