FIREFIGHTERS' PERCEPTION OF EXERCISE-RELATED INJURY MECHANISMS

Mark G. Abel[1,2,3], Sarah N. Lanham[1], Jamal L. Thruston[1,2], Emma R. Briney[1], Jackson B. Miller[1], Alyssa Q. Eastman[4], Emily L. Langford[1,5], Vanessa Santos[1,3], Luís Monteiro[1,3,6], Luís M. Massuça[1,3,6], Jodie Wills[7], Tim L. A. Doyle[7], Nicholas Heebner[2], Phillip Gribble[2,], M. Ryan Mason[1]

[1]First Responder Research Laboratory, University of Kentucky, Lexington, KY; [2]Sports Medicine Research Institute, University of Kentucky, Lexington, KY; [3]ICPOL Research Center, Higher Institute of Police Sciences and Homeland Security, Lisbon, Portugal; [4]Mayo Clinic, Rochester, MN; [5]University of Montevallo, Montevallo, AL; [6]CIDEFES, Lusófona University, Lisbon, Portugal; [7]Macquarie University, Biomechanics, Physical Performance, and Exercise Research Group, Sydney, Australia

BACKGROUND

- Firefighting is composed of strenuous occupational tasks which highlights the importance of participation in an exercise program to enhance firefighter safety and readiness.[1]
- Ironically, exercise is the most common cause of non-fireground injuries, accounting for one-third of injuries and is responsible for 41% of post-injury absence from work.[2,3]
- Fiscally, firefighter injuries cost the United States $1.6 to 5.9 billion USD annually and approximately $50,000 to $200,000 per fire department per year.[4]
- Unfortunately, there is a lack of research identifying factors associated with exercise injuries among firefighters. Identification of injury factors will guide exercise program design and resource allocation in fire department wellness initiatives. Ultimately, these countermeasures may reduce lost time and fiscal consequences.

AIM

- To describe firefighters' perceptions of intrapersonal, interpersonal, and departmental factors associated with exercise injuries.

METHODS

- A convenience sample of 252 career structural firefighters (Sex: 231 male, 15 female, 1 prefer not to say; Race/ethnicity: White: 89%, Latinx: 4%; African American: 3%; Age: 39.6±9.8 yr; Firefighter experience: 15.1±9.1 yr) responded anonymously to an electronic survey inquiring about perceived factors associated with exercise injuries among firefighters.
- Firefighters responded to the following question and were allowed to select multiple factors: *"Which of the following factors do you feel may contribute to firefighter exercise injuries?"*. The factors were reported as relative frequencies and calculated as the number of times the factor was selected relative to the number of respondents.
- The instrument was composed of 99-items and developed using several firefighter focus groups to ensure ecological validity. The items assessed perceived causes of injuries.
- The electronic questionnaire was disseminated to fire personnel from multiple US fire departments.

Abstract FRRL

RESULTS

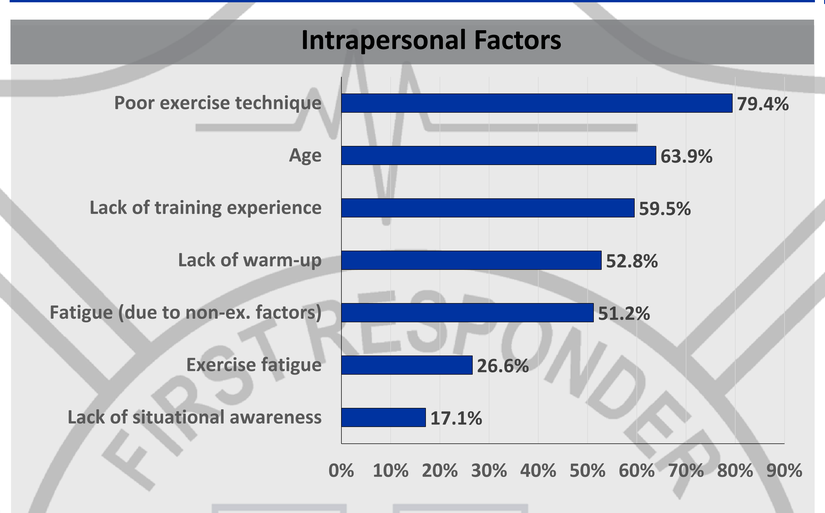

Figure 1. Relative frequency of intrapersonal factors perceived to contribute to exercise injuries among firefighters (N=252).

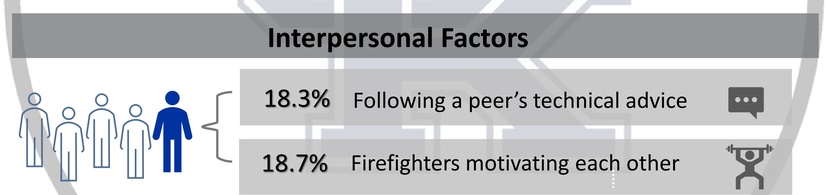

Figure 2. Relative frequency of interpersonal factors perceived to contribute to exercise injuries among firefighters (N=252).

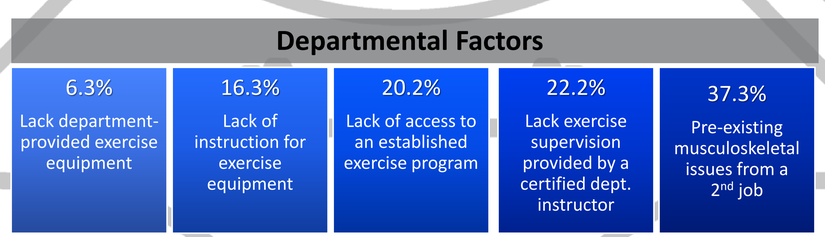

Figure 3. Relative frequency of departmental factors perceived to contribute to exercise injuries among firefighters (N=252).

PRACTICAL APPLICATIONS

To reduce exercise injuries, fire departments should provide:

- Certified strength and conditioning practitioners to educate firefighters regarding proper exercise technique, the importance of performing a warm-up, and utilization of fatigue management strategies.
- Healthcare practitioners to proactively manage musculoskeletal issues and treat injuries.

CONCLUSION

- Firefighters' perceived exercise injury factors to be primarily **intrapersonal** and **modifiable** in nature.
- **Poor exercise technique** and **pre-existing musculoskeletal issues** were among the most common perceived factors associated with exercise injuries.

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