



DIFFERENCES IN STRESS, RECOVERY, AND ENGAGEMENT IN RECOVERY ACTIVITIES BETWEEN RANKS OF ACTIVE-DUTY FIREFIGHTERS



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INTRODUCTION

- To optimize workplace functioning and to reduce chronic stress, burnout, and poor health throughout an organization, sport and occupational health researchers have recently begun to examine the importance of recovery for both the individual (e.g., athlete)¹ as well as the staff and leaders (e.g., athletic trainers, coaches) around the individual^{2,3}.
- Similar organizational structures exist within the fire service, whereby the recovery needs for staff or those at higher ranks (e.g., Lieutenant [Lt]) are just as important to consider as those at lower ranks (e.g., firefighters [FF]) due to their unique job duties and stressors⁴.
- This organization-wide approach to recovery, however, has not previously been examined in the fire service. Instead, current FF research focuses primarily on the stressors that FFs might experience^{5,6} yet little emphasis has been placed on practical strategies that can be utilized to manage those stressors or on differences in stress and recovery across ranks.
- Failure to examine differences in perceptions of stress and recovery or the specific recovery activities engaged in by FFs of various ranks precludes recommendations of rank-specific recovery interventions.

PURPOSE

The purpose of the current study was to examine the differences in perceived stress and recovery status and recovery activities between FFs of a lower rank and FFs of a higher rank.

METHODS

Participants

- 261 active-duty FFs
- Age = 39.2 ± 9.4 years
- 91.6% male; 8.4% female
- 154 FFs reported being of a lower rank
 - FF and Heavy Equipment Operator (HEO)
- 107 FFs reported being of a higher rank
 - Lt, Captain (Cpt), and Battalion Chief (BC)



Measures

- The FF-adapted version of the Assessment of Recovery Activities for Athletes⁷ (ARAA-FF) was used to assess FF engagement in physical, psychological, and social recovery activities.
 - Recovery activity subscales consist of: *Sleep, Readiness, Relaxation, Psychological Detachment, Mastery, Autonomy, Training Breaks, Community, FF Interactions, and Non-FF Interactions.*
 - Higher scores on each subscale indicate a higher engagement in recovery activities.

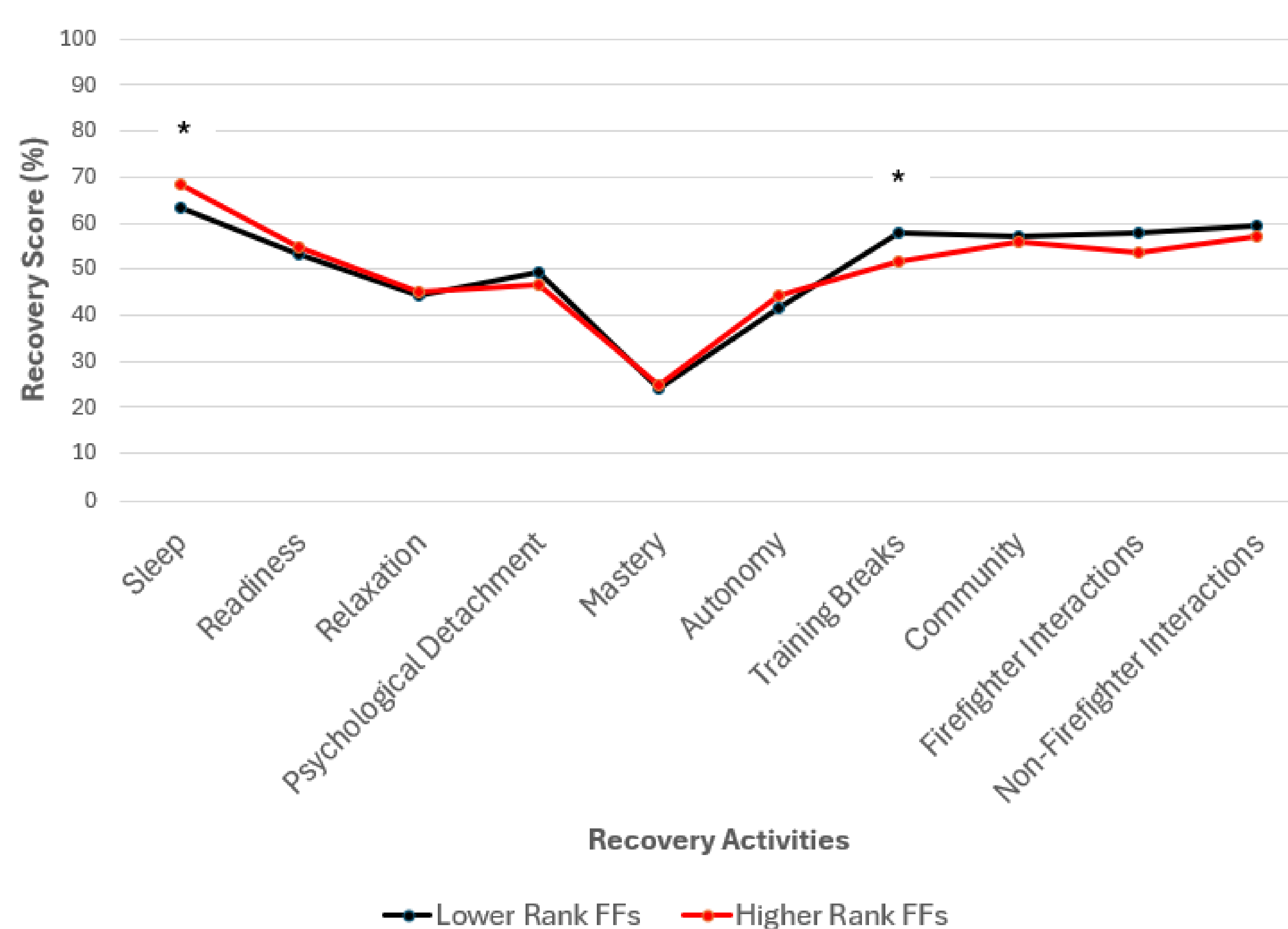
Procedures & Statistical Analyses

- Following informed consent, participants completed the ARAA-FF using the online survey platform Qualtrics (Provo, UT).
- Independent t-tests ($p < 0.05$) were used to examine the differences between FF ranks in ARAA-FF subscales and perceptions of stress and recovery status.

RESULTS

- Lower rank FFs had significantly lower scores on the *Sleep* ($t(259) = -2.06, p = 0.041$) and significantly higher scores on the *Training Breaks* ($t(259) = 2.53, p = 0.012$) subscales of the ARAA-FF.
- No significant differences ($p > 0.05$) existed between ranks on perceptions of physical, psychological, or social stress or recovery status.

Figure 1. Recovery Activities by Rank



* $p < 0.05$

CONCLUSIONS

- Higher FF rank is associated with higher levels of sleep-promoting activities (e.g., sleeping in a cool, dark environment), yet lower levels of perceived training breaks (e.g., using off-duty time to physically relax and recover, saving energy for oneself).

PRACTICAL APPLICATIONS

- While rank might not influence a FF's ability to detach from work, implement adequate nutrition strategies, or engage in social recovery activities, significant differences emerged that warrant practical application.
- Developing sleep hygiene protocols for FFs or HEOs might be beneficial to promote recovery, especially when considering that these FFs often have communal bunking while on-duty.
- In contrast, discussing the importance of utilizing off-duty time to physically relax may be beneficial for "bosses", or those FFs of the Lt, Cpt, or BC rank. Implementation of these protocols may improve on- and off-duty recovery for individuals across all ranks.

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