Personality Traits Among Recruit Firefighters Predicts Fitness

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ABSTRACT

Introduction: Personality traits have been associated with physical fitness. Additionally, tolerance of exercise intensity has been related to exercise behavior. However, less is understood about these traits in firefighters (FFs), and how they impact FF fitness. **Purpose:** Examine how personality traits influence fitness (aerobic, muscular) among recruit FFs. **Methods:** Recruit FFs (N=435 males, 26.42± 4.07yrs) in a 6-week FF training academy completed a 1.5 mile run, bench press test, and individual difference measures (personality [Extraversion (E), Emotional Stability (ES), Agreeableness (A), Conscientiousness (C), Openness (O)], Tolerance for Exercise Intensity (Tol), and perceived fitness (PF)). **Results:** C was associated with aerobic fitness (r= 0.19, P= 0.028), but not muscular endurance or PF (P> 0.05). However, PF was significantly (P< 0.001) correlated with aerobic fitness (r= -0.42) and muscular (r= -0.24) endurance. Hierarchical regression showed both PF [R^2_{adj} = 19.0 aerobic; R^2_{adj} = 10.3 muscular; P_s< 0.001] and Tol [R^2_{adj} = 11.6 aerobic; R^2_{adj} = 15.4 muscular; P_s< 0.001] explained significant variance in fitness after controlling for age and sex. **Discussion:** Findings support the relationship between select personality characteristics and fitness in FFs. Understanding these relationships could aid in developing a more optimal training program during a FF training academy. More, or supplemental, physical training could be given to those with lower exercise intensity tolerance and/or perceived fitness than their counterparts.

INTRODUCTION

- Firefighting is a physically and mentally demanding profession.
- Of the personality factors contained in the 5-Factor Model (FFM), Conscientiousness, Neuroticism, and Extraversion were shown to be significantly correlated with fitness behaviors[1].
- Tolerance of Exercise Intensity (ToI) is as a trait that influences one's ability to continue exercising at levels of intensity associated with discomfort or displeasure. Higher ToI is associated with higher levels of vigorous physical activity[2].
- It is not known how perceived fitness is related to aerobic fitness or muscular endurance.

PURPOSE

Examine how personality traits are associated with fitness (aerobic, muscular) among recruit FFs.

METHODS

Methods

Study Design

- Recruit FFs (N=435 males, 26.4 ± 4.1 yrs) completed a 1.5 mile run, bench press test, and individual difference measures (Big 5 personality traits, tolerance for exercise intensity (Tol), and perceived fitness (PF)).

Aerobic Fitness and Muscular Endurance

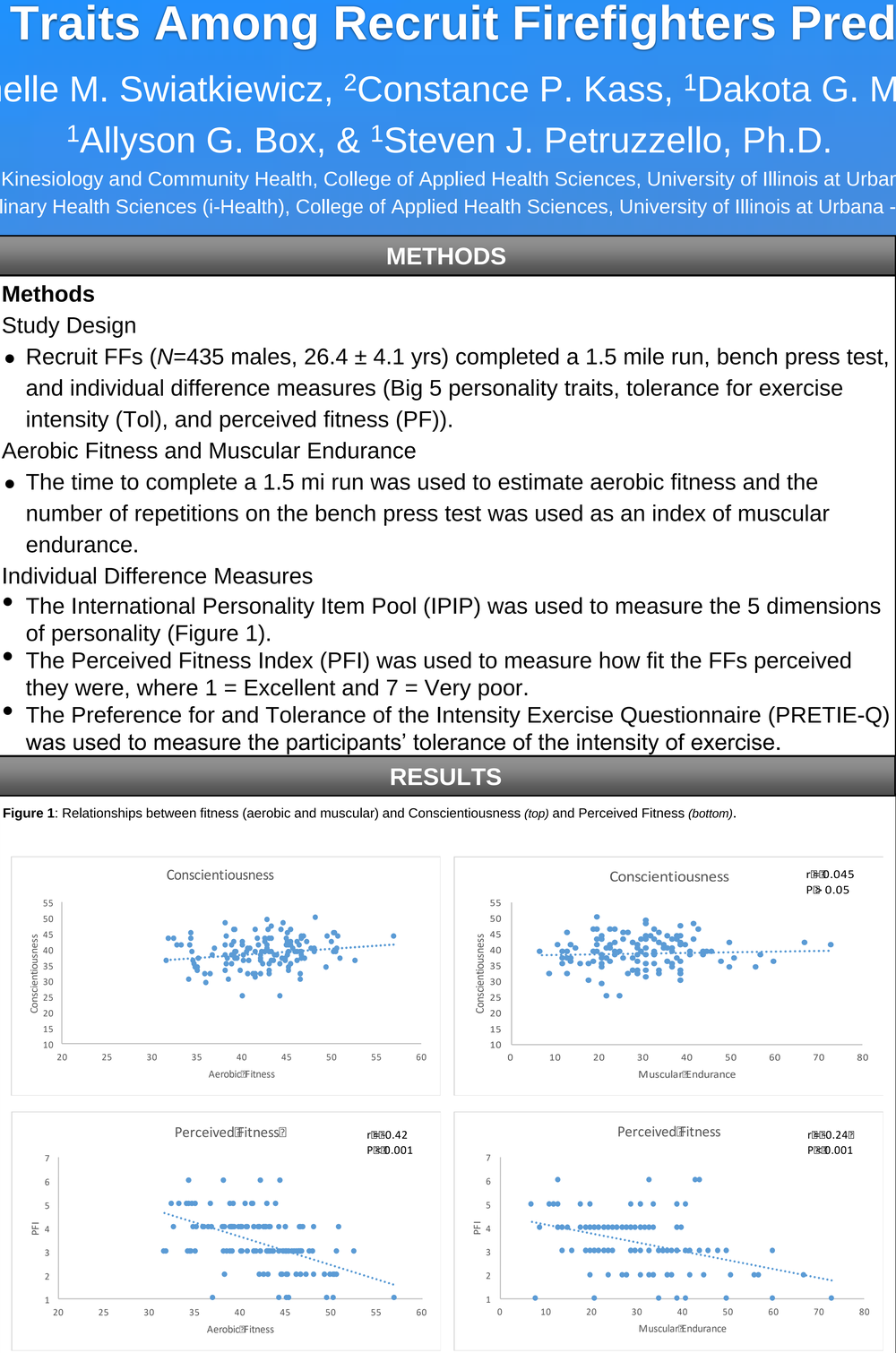
- The time to complete a 1.5 mi run was used to estimate aerobic fitness and the number of repetitions on the bench press test was used as an index of muscular endurance.

Individual Difference Measures

- The International Personality Item Pool (IPIP) was used to measure the 5 dimensions of personality (Figure 1).
- The Perceived Fitness Index (PFI) was used to measure how fit the FFs perceived they were, where 1 = Excellent and 7 = Very poor.
- The Preference for and Tolerance of the Intensity Exercise Questionnaire (PRETIE-Q) was used to measure the participants' tolerance of the intensity of exercise.

RESULTS

Figure 1: Relationships between fitness (aerobic and muscular) and Conscientiousness *(top)* and Perceived Fitness *(bottom)*.



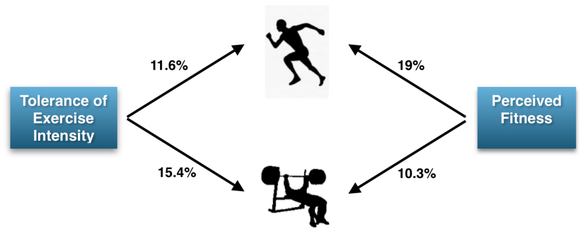
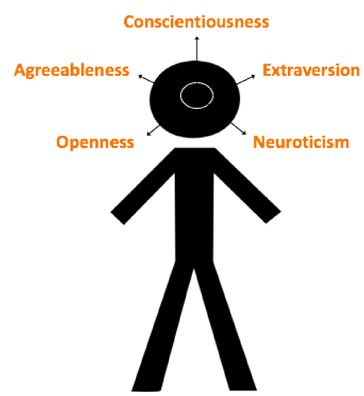


Figure 2: Hierarchical Regressions: Predicted variance for aerobic fitness *(top)* and muscular endurance *(bottom)*.

CONCLUSION

- Given the physically demanding nature of the profession, training programs need to be developed to optimize the aerobic and muscular fitness of FFs.
- Frequently, FFs need to put themselves at risk in order to save others. Previous research has shown that various fitness variables were significant predictors of how FFs performed in FF-related assessments[3].
- It is likely that those FFs who are more aerobically fit and have more muscular endurance will be less likely to suffer from injuries while on duty. Training programs that target individuals with low Conscientiousness (i.e., low goal-oriented behaviors) and/or low perceived fitness may help aid these individuals in successfully completing and excelling in the training program through the academy.

Figure 1: Five Factor Model of Personalities



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Photos were taken from the Illinois Fire Service Institute website.

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