Fitness Characteristics for Deputy Sheriff Recruits who Graduate or Separate from Academy: A Pilot Study

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Fitness Characteristics for Deputy Sheriff Recruits who Graduate or Separate from Academy: A Pilot Study

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ABSTRACT

INTRODUCTION: Law enforcement can be a physically demanding profession. On-duty officers may be required to carry, drag, push, pull, lift, vault, jump, crawl, sprint, use force, and sustain pursuit of a suspect at any time during their shift. Deputy sheriff and other law enforcement agency (LEA) recruits complete academy training to prepare for these job demands. Academy is used to physically prepare recruits to tolerate the rigors of the job, as well as teach proper procedural and legal requirements. A recruit that does not complete academy training (i.e., they separate from the academy), whether via injury, failure in academics or scenario-based training, or personal reasons, can create a great financial burden to the LEA and state. The physical fitness of a recruit prior to academy could have some influence whether they are capable of successfully completing academy training and graduate. **PURPOSE:** To determine the differences in fitness characteristics between deputy sheriff recruits who either graduated or separated from academy training. **METHODS:** Retrospective analysis was conducted on two classes, which encompassed 163 recruits, from one LEA. The two classes had 131 recruits who graduated (GRAD; 118 males and 13 females), and 32 recruits who separated (SEP; 28 males and 4 females) at various time points during academy training. Physical fitness testing occurred three days prior to the start of academy. The fitness tests included: maximal number of push-us and sit-ups completed in 60 seconds (s) to measure muscular endurance; a 75-yard pursuit run (75PR), which was a simulated foot pursuit involving sprinting and direction changes about a grid; seated medicine ball throw (MBT) and vertical jump (VJ) as indirect measures of upper- and lower-body power, respectively; and number of shuttles in the multistage fitness test (MSFT) to assess maximal aerobic fitness. A multivariate analysis of variance, with sex as a covariate, was utilized to compare the GRAD and SEP groups. Significance was set at $p \leq 0.05$. Additionally, Pearson's correlations were calculated on the pooled recruit data (n = 163) to determine if significant ($p \leq 0.05$) relationships existed between the fitness tests and academy separation. **RESULTS:** There was a significant ($p < 0.01$) difference in age between the GRAD and SEP groups, with SEP recruits being older (26.40 ± 4.81 years vs. 30.36 ± 7.36 years). There were no significant differences between the groups in height ($p = 0.65$) or body mass ($p = 0.23$). The GRAD group were significantly ($p \leq 0.01$) faster in the 75PR compared to the SEP group (16.69 ± 1.02 s vs. 17.46 ± 1.23 s), and also completed more MSFT shuttles (52.40 ± 15.21 shuttles vs. 44.52 ± 10.15 shuttles). There were no significant between-group differences for push-ups ($p = 0.53$), sit-ups ($p = 0.87$), MBT ($p = 0.16$), or VJ ($p = 0.20$). Age ($r = 0.26$), 75PR time ($r = 0.28$), and MSFT shuttles ($r = -0.22$) also significantly ($p \leq 0.01$) correlated with academy separation. **CONCLUSIONS:** The recruits from this LEA academy class who separated tended to be older, and achieved lower results in the 75PR and MSFT. Maximal sprinting and change-of-direction ability, in addition to aerobic fitness, could have some impact on a recruit's ability to graduate. This is notable, as these physical characteristics can be related to job-specific law enforcement tasks (e.g., suspect pursuit and apprehension). **PRACTICAL APPLICATIONS:** LEA recruits should attempt to improve their maximal running speed, change-of-direction ability, and aerobic fitness prior to academy as this could impact their ability to successfully graduate. Older recruits should ensure they develop their physical fitness prior to academy to enhance their ability to complete training. Future research should analyze more LEA academy classes to confirm the results of this preliminary analysis.

INTRODUCTION

- Law enforcement can be a physically demanding profession. On-duty officers may be required to carry, push, pull, jump, crawl, sprint, use force, and sustain suspect pursuit during their shift.[2]
- Law enforcement and deputy sheriff recruits complete academy training to prepare for their job demands. The academy period is used to physically prepare recruits to tolerate the rigors of the job, as well as teach correct procedural and legal requirements.
- If a recruit that does not complete academy training the are defined as separating from academy. This can occur via injury, academic or scenario-based training failure, or personal reasons. Recruits that do not graduate can create a great financial burden to the law enforcement agency (LEA) and state. The physical fitness of a recruit prior to academy could have some influence whether they are capable of successfully completing academy training and graduate.
- Therefore, the purpose of this study was to determine the differences in fitness characteristics between deputy sheriff recruits who either graduated or separated from academy training.

METHODS

- Retrospective analysis was conducted on two classes from one LEA. This encompassed a total of 163 recruits; 131 recruits graduated (GRAD; 118 males and 13 females), and 32 recruits separated (SEP; 28 males and 4 females) at various time points during academy training.
- Physical fitness testing occurred three days prior to the start of academy. The tests included: maximal number of push-us and sit-ups completed in 60 seconds (s) to measure muscular endurance; a 75-yard pursuit run (75PR), which was a simulated foot pursuit involving sprinting and direction changes about a grid (Figure 1);[3] seated medicine ball throw (MBT) and vertical jump (VJ) as measures of upper- and lower-body power, respectively; and number of shuttles in the multistage fitness test (MSFT) to assess maximal aerobic fitness.
- A multivariate ANOVA, with sex as a covariate, was used to compare the GRAD and SEP groups. Pearson's correlations were calculated on the pooled recruit data (n = 163) to determine if significant relationships existed between the fitness tests and academy separation. Significance was set at $p \leq 0.05$ for all analyses.

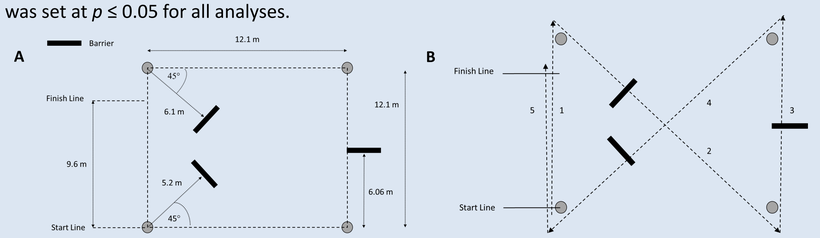

Figure 1. (A) The dimensions for the 75-yard pursuit run in meters (m) and (B) the running direction (numbered in order) for the 75-yard pursuit run. The barriers were 2.44 m long and 0.15 m high.

RESULTS

- The data for the GRAD and SEP groups is shown in Table 1. There were significant differences in age, with SEP recruits being older. The GRAD group were significantly faster in the 75PR, and completed more MSFT shuttles, compared to the SEP group.
- Academy separation significantly correlated with age ($r = 0.26$), 75PR time ($r = 0.28$), and MSFT shuttles ($r = -0.22$).

Table 1. Data (mean ± SD) for LEA recruits who graduated (GRAD) or separated (SEP) from academy training.

	GRAD (n = 131)	SEP (n = 32)	*p* value
Age (years)	26.40 ± 4.81	30.36 ± 7.36*	<0.01
Height (m)	1.76 ± 0.09	1.77 ± 0.07	0.65
Body Mass (kg)	80.63 ± 11.60	82.79 ± 10.78	0.23
Push-ups (no.)	42.49 ± 13.63	39.68 ± 12.58	0.53
Sit-ups (no.)	36.19 ± 9.15	35.56 ± 8.74	0.87
75PR (s)	16.69 ± 1.02	17.46 ± 1.23*	<0.01
MBT (m)	5.97 ± 1.17	6.16 ± 0.95	0.16
VJ (cm)	56.28 ± 12.15	53.02 ± 11.95	0.20
MSFT shuttles (no.)	52.40 ± 15.21	44.52 ± 10.15*	0.01

* Significantly ($p < 0.05$) different from GRAD group.

CONCLUSION

- The recruits from this LEA academy class who separated tended to be older, were slower in the 75PR, and completed less shuttles in the MSFT. Previous research has shown older police officers tend to perform poorer in the MSFT,[1] which provides some support to the results of this study.
- The 75PR incorporates maximal sprinting and change-of-direction ability, which has a foundation of lower-body strength, power, and dynamic stability. This is notable, as these physical characteristics can be related to job-specific law enforcement tasks (e.g., suspect pursuit and apprehension).[3]
- Taken together, maximal sprinting, change-of-direction ability, and aerobic fitness could have some impact on a recruit's ability to graduate from this LEA.

PRACTICAL APPLICATIONS

- LEA recruits should attempt to improve their maximal running speed, change-of-direction ability, and aerobic fitness prior to academy as this could impact their ability to successfully graduate.
- Older recruits in particular should ensure they develop their physical fitness prior to academy to enhance their ability to complete training and graduate.
- Future research should investigate a greater sample of LEA academy classes to confirm the results from this pilot analysis.

References

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