Fitness Characteristics for Deputy Sheriff Recruits who Graduate or Separate from Academy: A Pilot Study
Lockie, Robert G.; Dulla, Joe; Orr, Rob Marc; Stierli, Michael; Cesario, Karly A.; Bloodgood, Ashley M.; Moreno, Matthew R.; Dawes, James; Horrigan, Joseph

Published: 01/01/2018

Document Version:
Peer reviewed version

Link to publication in Bond University research repository.

Recommended citation (APA):

General rights
Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

For more information, or if you believe that this document breaches copyright, please contact the Bond University research repository coordinator.

Download date: 21 May 2019
Fitness Characteristics for Deputy Sheriffs who Graduate or Separate from Academy: A Pilot Study

Robert G. Lockie1, Joseph M. Dullia2, Robin M. Orr3, Michael Sterli4, Karl A. Cesario5, Ashley M. Bloodgood2, Matthew R. Moreno6, and J. Jay Dawes5,7

1Center for Sport Performance, Department of Kinesiology, California State University, Fullerton, CA, USA; 2Recruit Training Unit, Training Bureau, Los Angeles County Sheriff’s Department, Los Angeles, CA, USA; 3Tactical Research Unit, Bond University, Gold Coast, Australia; 4Sydney Police Centre, Surry Hills, NSW, Australia; 5Department of Health Sciences, University of Colorado-Colorado Springs, Colorado Springs, CO, USA; 6Tactical Sports Medicine, Southern California University of Health Sciences, Whittier, CA, USA.

ABSTRACT

INTRODUCTION: Law enforcement can be a physically demanding profession. On-duty officers may be required to carry, push, pull, lift, jump, crawl, swim, run, use force, and sustain suspect pursuit during their shift. Law enforcement and deputy sheriff complete academy training to prepare for their 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 will likely face more injury, both during the academy, whether it be injury, failure in academics or cardio-based training, or personal reasons, can create a great financial burden to the LEA and the recruits themselves. As LEA have seen an increase in the number of recruits that are capable and interested in pursuing a career in law enforcement and training. PURPOSE: To determine the differences in fitness characteristics between deputy sheriffs who either graduated or separated from academy training. METHODS: Pilot study. Data was collected on two cohorts, which encompassed 131 recruits or separated from one LEA. The two cohorts consisted of 45 recruits who graduated (GRAD; age =28.9 ± 2.7 years, body mass =77.0 ± 8.7 kg, and <5 years experience in law enforcement), and 86 recruits separated (SEP; age =34.2 ± 5.2 years, body mass =83.6 ± 10.1 kg, and <5 years experience in law enforcement) from academy training. Data collection occurred three days prior to the start of LEA field training for GRAD; and <5 years experience following separation from LEA for SEP. A multistage fitness test (MSFT), included in the academy training, is designed to simulate pursuit involving sprinting and direction changes about a grid, seated medicine ball throws (MMT), waist sit-ups (PR) 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 ≤ 0.05 for all analyses.

RESULTS

• Retrospective analysis was conducted on two cohorts 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-ups and sit-ups completed in 60 seconds (s) to measure muscular endurance; a 7.5-yard sprint (7SPR), which was a simulated foot pursuit involving sprinting and direction changes about a grid; seated medicine ball throws (MMT); waist sit-ups (PR) 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.

METHODS

• Law enforcement can be a physically demanding profession. On-duty officers may be required to carry, push, pull, lift, jump, crawl, swim, run, use force, and sustain suspect pursuit during their shift. LEA 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 will likely face more injury, both during the academy, whether it be injury, failure in academics or cardio-based training, or personal reasons, can create a great financial burden to the LEA and the recruits themselves. As LEA have seen an increase in the number of recruits that are capable and interested in pursuing a career in law enforcement and training.

• The recruits from this LEA academy class who separated tended to be older, were slower in the 7SPR, and completed less shuttles in the MSFT. Previous research shows recruits who tend to perform poorer in the MSFT, which provides some support to the results of this study.
• The 7SPR 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).1
• 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.

CONCLUSION

• 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.

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.

Data Collection

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>GRAD (n = 131)</th>
<th>SEP (n = 86)</th>
<th>PR</th>
<th>VT</th>
<th>SHUTTLES</th>
<th>MMT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (year)</td>
<td>25.4 ± 5.9</td>
<td>30.5 ± 10.6</td>
<td>&lt;0.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height (in)</td>
<td>71.4 ± 1.0</td>
<td>71.1 ± 1.2</td>
<td>0.65</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mass (kg)</td>
<td>74.9 ± 7.3</td>
<td>81.8 ± 10.8</td>
<td>&lt;0.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waist (cm)</td>
<td>88.8 ± 9.0</td>
<td>97.1 ± 10.9</td>
<td>&lt;0.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sit-ups (no.)</td>
<td>44.0 ± 17.4</td>
<td>37.8 ± 15.2</td>
<td>&lt;0.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Push-ups (no.)</td>
<td>22.1 ± 13.5</td>
<td>15.4 ± 11.0</td>
<td>&lt;0.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vertical Jump (in.)</td>
<td>29.1 ± 5.7</td>
<td>26.8 ± 5.0</td>
<td>&lt;0.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Yard Sprint (s)</td>
<td>6.5 ± 0.1</td>
<td>7.1 ± 0.2</td>
<td>&lt;0.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 Yard Sprint (s)</td>
<td>9.1 ± 0.2</td>
<td>10.7 ± 1.2</td>
<td>&lt;0.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multistage Fitness Test (s)</td>
<td>111.7 ± 25.0</td>
<td>130.9 ± 31.0</td>
<td>&lt;0.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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