Work sample test battery performance in law enforcement recruits
Lockie, Robert G.; Beitzel, M.; Orr, Rob Marc; Stierli, Michael; Dulla, Joe; Dawes, James

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Change in Work Sample Test Battery Performance in Law Enforcement Recruits during Academy: A Comparison of Two Classes

Dr. Robert Lockie, Maria Beitzel, Dr. Robin Orr, Sgt. Michael Stierli, Lt. Joseph Dulla and Dr. Jay Dawes
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- Maria Beitzel
- Lt. Joe Dulla
- Dr. Jay Dawes
- Dr. Rob Orr
- Sgt. Mick Stierli
- Dr. Joe Horrigan
Introduction

• Law enforcement recruits are required to complete academy training
  – Establish expected patterns of behavior, values, attitudes (Berg, 1990)
  – Teach necessary procedures required for job
  – Ensure physical development to tolerate rigors of job (Cocke et al., 2016; Crawley et al., 2016; Orr et al., 2016)

• Several month process → up to 6 months
Work Sample Test Battery (WSTB)

- State-mandated physical tests that are related to essential job tasks
- Can vary from state-to-state
- State of California Commission on Peace Officer Standards and Training
  - Agility run around a 99-yard obstacle course
  - Body drag with a 165-pound dummy
  - Climb over a six-foot chain link fence
  - Climb over a six-foot solid wall
  - 500-yard run
Influence of Physical Training

• Physical training could greatly affect performance in tests such as the WSTB
• ‘One-size-fits-all’ model very prevalent (Orr et al., 2016)
• Job tasks are generally the same for officers regardless of factors like sex and age → therefore, everyone should be able to do the same tasks
  – People are different!
  – Dawes et al. (2017), Lockie et al. (2018), Lockie et al. (in press)
• State requirements
How would this affect performance in job-specific tasks, which ideally would be optimized by the end of academy???
Purpose of the Study

• To determine changes in the WSTB performed by recruits from two classes from one law enforcement agency (LEA)
• To ascertain whether there were differences in WSTB performance between the two classes
Methods

• Retrospective analysis on two academy classes from one LEA that completed a 22-week training program was conducted
  – Class 1: 69 recruits (27.23 ± 5.26 years; 1.77 ± 0.09 m; 82.89 ± 11.32 kg)
  – Class 2: 59 recruits (25.92 ± 4.18 years; 1.77 ± 0.08 m; 80.46 ± 11.44 kg)

• LEA training staff conducted pre- (approximately halfway through academy) and post-testing (end of academy) according to state standards
WSTB

- Agility run around a 99-yard obstacle course
- Body drag with a 165-pound dummy
- Climb over a six-foot chain link fence
- Climb over a six-foot solid wall
- 500-yard run
99-yard Obstacle Course
165-lb Dummy Drag
6-Foot Fence Climbs
Statistical Analysis

• Data combined for males and females in each class
  – All recruits must attain same minimum standards regardless of sex or age
• Multiple mixed factorial ANOVAs were used to calculate mean differences between classes on pre- and post-tests for the WSTB
• Significance set as $p < 0.05$ for all analyses
## Results

<table>
<thead>
<tr>
<th></th>
<th>Class 1</th>
<th>Class 2</th>
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<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
</tr>
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<td><strong>99-yd Obstacle Course (s)</strong></td>
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<td><strong>Body Drag (s)</strong></td>
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* Significantly (p < 0.01) different from Class 2.
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* Significantly ($p < 0.01$) different from pre-test.
Conclusions

• Different LEA academy classes will feature recruits with range of fitness and skill levels
  – Could affect ability of recruits to complete job-specific tasks i.e. WSTB
• Class 2 were generally superior in pre-test WSTB compared to Class 1
• Following pre-test, Class 1 recruits were able to improve most aspects of WSTB
• Academy training conducive to improving WSTB performance for Class 1 recruits, either via changes in fitness or skill
Conclusions

• Class 2 recruits → training that followed WSTB pre-testing may have been less than optimal
  – No significant change in SW and 500R, CL performance was slower
  – Potential concern if WSTB is used as indicator of job performance

HOWEVER

• What is the priority of the LEA?
## Conclusions

<table>
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<tr>
<td><strong>99-yard Obstacle Course (s)</strong></td>
<td>22</td>
<td>19.25 ± 1.33</td>
<td>18.80 ± 1.41</td>
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<tr>
<td><strong>Body Drag (s)</strong></td>
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<td>5.51 ± 0.94</td>
<td>4.59 ± 0.95</td>
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<tr>
<td><strong>Chain Link Fence Climb (s)</strong></td>
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<td>8.02 ± 1.10</td>
<td>7.26 ± 1.04</td>
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<tr>
<td><strong>Solid Wall Climb (s)</strong></td>
<td>13</td>
<td>7.71 ± 0.88</td>
<td>7.68 ± 1.52</td>
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<tr>
<td><strong>500-yard Run (s)</strong></td>
<td>105</td>
<td>88.61 ± 6.77</td>
<td>90.55 ± 8.65</td>
</tr>
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</table>

- All recruits from this study graduated
- If priority is graduating as many recruits as possible, need for ‘best’ performance at end of academy is reduced
Practical Applications

• LEA staff should ideally tailor physical training specific to each class to enhance fitness and skill performance as assessed by tests such as the WSTB.

• LEA training staff should attempt to periodize training to optimize WSTB performance by end of academy.
  – Especially true if these tests are considered representative of job tasks specific to law enforcement.

• Dependent on priorities of LEA command staff.
References


Thank you for your attention...

Email: rlockie@fullerton.edu
Twitter: @DrBobLockie