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A COMPARISON OF FITNESS SCORES BETWEEN INJURED AND UNINJURED POLICE CADETS

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ABSTRACT

Purpose: The purpose of this investigation was to determine whether there were significant mean score differences on selected fitness tests between cadets who sustained an injury while attending a 27-week state patrol training academy and their uninjured counterparts. **Methods**: Archival data for eighty-one cadets from two 27-week state patrol training cohorts were utilized for this analysis. This data was collected as part of the agency's normal training academy fitness assessment prior to commencement of training. The data included self-reported age (yrs); height (in) and weight (lbs); and push-up, sit-up, vertical jump and 20 meter multi-stage fitness test (20m-MSFT) scores. Injury was defined as any musculoskeletal damage that resulted in the cadet being assigned to altered training duty or that led to exit from the training academy. Injuries were routinely documented by the state patrol training staff and provided to the primary investigator for analysis. Fifteen cadets reported an injury during their time at the training academy. Independent t-tests were performed to examine mean score differences between injured and uninjured cadets. The level of statistical significance was set *a priori* at 0.05. **Results:** Descriptive data for both injured and uninjured groups is presented in Table I, with any significant differences between injured and uninjured personnel in mean scores on the measured variables indicated by an asterisk. Injured personnel were significantly older and exhibited poorer push-up, sit-up, vertical jump and 20m-MSFT performance at baseline than their uninjured counterparts. **Conclusion:** There were significant mean score differences in age and fitness levels between injured and non-injured state patrol cadets attending academy training, with injured cadets being significantly older and less conditioned. **Practical application**: Initial fitness levels may impact a cadets chance of successfully completing their academy training. Subsequently, acceptable, and legally defensible, entry level standards may reduce injuries (and associated costs) and improve cadet retention.

INTRODUCTION

Tactical occupations require their personnel to maintain a sufficient standard of physical fitness in order to perform required job tasks in an efficient and effective way, particularly during emergency events (1).

Police officers undergo intensive training programs in order to prepare for the physical demands of the job with officers are often required to crawl, balance, climb, lift, carry, push and pull as part of their duties (2).

Research in tactical populations suggest that poorer fitness levels are associated with an increased risk of trainee injury and failure to complete training (3,4).

The purpose of this investigation was to determine whether there were significant mean score differences on selected fitness tests between cadets who sustained an injury while attending a 27-week state patrol training academy and their uninjured counterparts

METHODS

- Archival data for police cadets (n=81) from two 27-week state patrol training cohorts were utilized for this analysis.

- This data was collected as part of the agency's normal training academy fitness assessment prior to commencement of training.

- The data included self-reported age (yrs); height (in) and weight (lbs); and push-up, sit-up, vertical jump and 20 meter multi-stage fitness test (20m-MSFT) scores.

- Injury was defined as any musculoskeletal damage that resulted in the cadet being assigned to altered training duty or that led to exit from the training academy.

- Independent t-tests were performed to examine mean score differences between injured and uninjured cadets.

- The level of statistical significance was set a priori at 0.05.

- Ethics approval for this study was granted from the University of Colorado Colorado Springs and Bond University Human Research Ethics Committee.

RESULTS

- Descriptive data for both injured and uninjured groups is presented in Table 1.

- Significant differences between injured and uninjured personnel in mean scores on the measured variables indicated by an asterisk.

- Injured personnel were significantly older and exhibited poorer performance at baseline than their uninjured counterparts in test scores on 1 minute push-up and sit-up scores, vertical jump height and shuttle score on the 20m-MSFT.

Variable	Injured n=15 Mean ± SD	Uninjured n=66 Mean ± SD
Age (yrs)	34.93±10.05*	28.63±5.45*
Height (cm)	175.80±9.14	177.52±6.27
Body weight (kg)	82.27±19.16	84.50±11.37
Push-ups (n)	38.26±7.77*	50.18±10.70*
Sit-ups (n)	41.00±4.12*	44.37±5.63*
Vert. Jump Height (cm)	48.06±7.85*	55.93±10.46*
Beep test score (Level)	7. 11±1.84*	8.09±1.67*

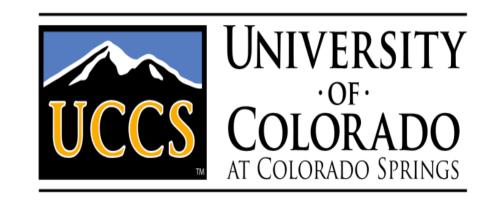**Table 1: Descriptive data for injured and injured police cadets**

DISCUSSION

There were significant mean score differences in age and fitness levels between injured and uninjured State Patrol cadets attending academy training, with injured cadets being significantly older and less conditioned.

These results support previous research in military (3) and law enforcement agencies of different nations (4) whereby lower fitness levels are associated with an increased risk of injury during initial training.

PRACTICAL APPLICATIONS

- Initial fitness levels may impact a cadets chance of successfully completing their academy training.

- Subsequently, acceptable, and legally defensible, entry level standards may reduce injuries (and associated costs) and improve cadet retention.

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