

Effects of Navy Officer Development School on Body Composition of HPSP Medical Students

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ABSTRACT

PURPOSE: This pilot study compared changes in body composition and strength in medical students enrolled in the Navy Health Professions Scholarship Program (HPSP) who attended Officer Development School, before training, after training, and follow-up. Exploring the possible future application to both medical students and stationary Navy ratings.

METHODS: An ABA quasi-experimental design was used to measure body composition using dual X-ray absorptiometry (iDXA), and strength measured by hand dynamometer. Measurements were collected 5 weeks before training, before departure, upon return, then 5 weeks later. The physical training during officer development school involves 1.5 miles run, push-ups, plank, march, and other calisthenic exercises.

RESULTS: Three subjects (2 females, age 24 ± 2 ; 1 male, age 37) in the Navy HPSP signed written consent and completed the pilot study. A repeated measures ANOVA was used to compare changes with descriptive statistics, comparing all subjects group average. There were no significant changes seen in group average outcomes. Total fat mass decreased post training (-1.91 ± 1.13 kg, $p=0.14$, and 0.12 ± 0.82 kg at follow up), total body fat percentage also decreased post training ($-2.61\% \pm 1.44\%$, $p=0.04$, and $0.36\% \pm 0.84\%$ at follow up). Total LBM increased post training (0.54 ± 0.64 kg, $p=0.26$ 0.1 ± 1.63 kg at follow up). There was no change in bilateral grip strength (R, $p=0.64$; L, $p=0.56$).

CONCLUSION: Following 5 weeks of naval officer training, there were decreasing trends in body fat mass and percentage, increasing LBM in subjects. Although group average did not show statistically significant changes based on this pilot study, further analysis could analyze single subject individually to compare results and expand to include more subjects as next year's medical students go through their officer trainings.