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The Effect of a Placebo on the ROTC APFT Test and Performance Perception

Cassandra Saunders, Kimberly Williams, Christa Sebeck, Elizabeth McGee, Kelsy Fitzgerald
Samuel Forlenza, Ph.D., Joohee Sanders, Ph.D. Shippensburg University, Shippensburg, PA

A placebo is a treatment without an active ingredient often used to study the psychological effects on the human mind and body. **PURPOSE:** To evaluate the effect varying doses of placebo has on the Reserve Officer Training Corps (ROTC) Army Physical Fitness Test (APFT). **METHODS:** Fourteen male and female individuals in the ages ranging from 19-21, who are enrolled in the ROTC program at Shippensburg University, volunteered to participate in this study. Subjects completed a standardized ROTC APFT under each condition (baseline (CON), single dose (P1), and double dose (P2) placebo) separated by one week. On placebo days, subjects were deceived and instructed to take a newly developed "pre-workout" supplement 30 minutes prior to the APFT test. The APFT included push-ups and sit-ups for 2 minutes each and a 2-mile run. A Performance Perception Questionnaire (PPQ) was also completed at the end of each day to assess the performance perception (PP) including anxiety, energy and strength. One-way ANOVA with repeated measures was used to compare repetitions for push-ups and sit-ups, 2-mile run time, and PP measures for three different conditions. **RESULTS:** No significant changes were observed in push-ups from the CON to P1 or P2 (67.1±14.8 vs. 68.1±12.1 and 67.9±17.1 repetitions, $p>0.05$). A modest increase in sit-ups scores were observed from the CON to P1 and P2 (65.7±10.0 vs. 71.3±11.0 and 67.7±13.3 repetitions, $p>0.05$). However, the differences were not statistically significant. Results from the 2-mile run test revealed that the run times were significantly improved at P1 when compared to CON (14.1±1.0 vs. 15.3±1.1 min, $p=0.001$), but not at P2 (15.6±0.6 vs. 15.3±1.1 min, $p=0.52$). When compared to CON, subjects felt significantly more anxious at P2 (1.0±1.8 vs. -0.1±2.6, $p=0.04$) but not at P1 (1.0±1.8 vs. 1.3±1.9, $p=0.7$). Similarly, perceived energy level was significantly higher at P1 when compared to CON (3.43±1.27 vs. 0.57±2.94, $p=0.01$) but not at P2 (2.00±2.45 vs. 0.57±2.94, $p=0.3$). Subjects felt that they had the most strength at P1 (3.7±1.6) when compared to CON (1.9±2.5) and P2 (2.0±2.5). However, these differences were not statistically significant. **CONCLUSION:** While the placebo had a positive influence on some of the performance measures as well as performance perception, P1 appeared to have the greatest effect.