Abstract

Title: Effect of physical load on handgun shooting accuracy.

Objective: The aim of this work is to detect and compare the effects of physical activity (in the form of a shuttle run at the limit of 85% SF max.) on the shooting accuracy from a short firearm.

Methods: This was an experimental study with an intra-subject design. Thirty randomly assigned police officers at age 35.9 years (SD = 4.5) made 5 shots from a Glock 17 pistol (gen. 3) within 5 seconds in a stable position without support before and after physical activity (shuttle run on length10 m in time until the completion of 85% SF max.) to a fixed target at a distance of 8 meters. Comparison of shooting accuracy from the middle point of impact between interventions (shooting before and after physical activity) was performed by using a paired T-test. The level of statistical significance was set at $p \geq 0.05$. Cohen's *d* was used to determine the magnitude of the strength of the effects.

Results: Based on the paired T-test, a statistically significant difference was found in the accuracy of shooting from the middle point of impact without and after physical activity ($p = 0.007$, $d = 0.498$). We also consider the deterioration of shooting accuracy after physical exertion by 9 mm from the middle point of impact, which is 21.78%, to be factually significant.

Keywords: Glock, pistol, shooting accuracy, SF max., stress, shooting attitude, target