Higher use of techniques studied and performance in melee combat produce a higher psychophysiological stress response.

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Abstract

We aimed to analyse the effectiveness of an operative training in soldiers' psychophysiological and melee combat performance. Nineteen soldiers performed a 50-hr training for 10 weeks. After training, they were divided into two groups: higher performance group (HPG) and lower performance group (LPG), then they conducted a realistic melee simulation where psychophysiological response, task performance, and the utilization of techniques learned were measured. HPG presented a significantly ($p < 0.05$) higher heart rate, blood lactate, and jump height; a lower blood oxygen saturation, task performance mark, use of studied techniques than LPG after the simulation; and a higher low frequency/high frequency ratio of heart rate variability previous the simulation than LPG. Independent of performance and the use of studied techniques by the participants, the melee simulation produced an increase in fight or flight response, increasing rated of stress and perceived exertion, sympathetic modulation, and physiological response. A specific melee combat training program induced different modifications in psychophysiological and task performance depending on the level of studied technique used. HPG presented a significantly higher cardiovascular response than LPG and time perception, and memory presented no differences between groups; also HPG presented a significantly higher use of studied techniques.

Keywords

Anxiety, Autonomic modulation, Cortical arousal, Physiology, Soldier.