

## **The Physiological and Psychological Benefits of CrossFit Training - A Pilot Study**

JORDAN SCHULTZ<sup>1</sup>, ADAM PARKER<sup>2</sup>, DREW CURTIS<sup>3</sup>, JORDAN DANIEL<sup>2</sup>, HAN-HUNG HUANG<sup>1</sup>

<sup>1</sup>Department of Physical Therapy; Angelo State University; San Angelo, TX

<sup>2</sup>Human Performance Research Laboratory, Department of Kinesiology; Angelo State University; San Angelo, TX

<sup>3</sup>Department of Psychology, Sociology and Social Work; Angelo State University; San Angelo, TX

---

*Category: Doctoral*

*Advisor / Mentor: Huang, Han-Hung (hhuang@angelo.edu)*

### ABSTRACT

CrossFit has been one of the fastest growing training methods in the fitness industry since its inception in 2000. CrossFit combines classic strength and conditioning along with gymnastics movements, Olympic weightlifting, and other functional movements into a constantly varied, high intensity workout. The success of CrossFit and what seems to be exponential growth of their over 10,000 affiliated gyms is undeniable. This popularity might be stem from two main factors: the physiological changes of training and the psychological benefits of a community emphasized, social atmosphere. However, there is very limited research evidence supporting the potential benefits of CrossFit . This study was conducted to investigate the physiological and psychological benefits of CrossFit training in a healthy adult population undergoing their first exposure to the training method. Sixteen participants were recruited from a local CrossFit affiliate in San Angelo, Texas. Participants completed a series of self-report psychological questionnaires including the Motives for Physical Activity Measures (MPAM), Mental Health Inventory 38 (MHI-38), and the Group Environment Questionnaire (GEQ). Following these questionnaires, physical metrics including: heart rate, blood pressure, height, body weight, body composition via Dual-energy X-ray Absorptiometry (DXA), along with performance measures including 1-RM back squat, 1-RM bench press, vertical jump test, and a Wingate Anaerobic Power Test were conducted. The CrossFit program was conducted for 8 weeks by certified CrossFit coaches at the local affiliate gym. After the 8-week training, the participants were reassessed using the same measures. Over the course of the study, 6 participants completed the program (2 males, 4 females,  $36.2 \pm 10.8$  years of age,  $73.6 \pm 7.4$  kg,  $167.6 \pm 5.5$  cm, and  $31.0 \pm 9.2\%$  body fat). Despite the large attrition rate, there were statistically significant increase of lean mass ( $1.44 \pm 1.26$  kg;  $p= 0.039$ ), decrease of mean fat ( $1.67 \pm 1.17$  kg ;  $p= 0.017$ ) and changes in interest subset of motivation from MPAM motivational test ( $p < 0.05$ ). In conclusion, this pilot study suggests that CrossFit training might be beneficial for improving body composition and concurrently changes certain motivational factors to continue engaging in the fitness activity. Further studies with a longer intervention period and a larger sample size are needed to support these findings.