

# THE EFFECT OF HIGH INTENSITY CIRCUIT TRAINING (HICT) MODIFIED-FIFA 11+ ON PHYSICAL FITNESS OF YOUNG FOOTBALL PLAYERS

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## ABSTRACT

The purpose of this study is evaluating the effect of HICT modified-FIFA 11+ training on the physical fitness components of young football players. Twenty seven football players were recruited as purposive random sampling to the football academies in Yogyakarta, Indonesia. Fourteen players were in the Experiment (EXP) group (age  $15.71 \pm 0.72$  y.o., weight  $55.93 \pm 9.44$  kg, height  $1.65 \pm 0.08$  m, body mass index (BMI)  $20.36 \pm 2.21$  kg/m<sup>2</sup>) and 13 players were in the Control (CON) group (age  $14.92 \pm 0.77$  y.o., weight  $55.23 \pm 9.62$  kg, height  $1.64 \pm 0.06$  m, BMI  $20.42 \pm 2.71$  kg/m<sup>2</sup>). The EXP group performed HICT modified-FIFA 11+ exercise, three times a week for 4-week and the CON group performed standard FIFA 11+. HICT modification was performed in the EXP group only in the part 2 of FIFA 11+ (strength, power and balance training) while the other parts were regular. Both groups performed physical fitness tests pre- and post-intervention for core strength (plank test), leg strength (leg dynamometer) and agility (Illionis test). Changes in performance (pre- vs. post-intervention) of each group were analyzed using dependent t-test and Wilcoxon ( $p < 0.05$ ). Installation of heart rate monitor (Polar™, software Polar Team™) was done randomly each week in both groups to measure the maximum heart rate (HR max), mean heart rate (HR mean) and intensity while exercise was being implemented. The results showed that core strength increased significantly ( $p = 0.00$ ) both in EXP and CON group. EXP group has slower agility result ( $p = 0.00$ ) but clinically insignificant time (? pre-post = 0.5 second). HR monitor showed that the EXP group had higher exercise intensity (HR max 91%; mean HR 74%) than the CON group (HR max 90%; mean HR 66%). These result suggest that HICT modified FIFA 11+ as effective as standard FIFA 11+ in improving physical fitness components. Heart rate monitor showed that the HICT modified-FIFA 11+ had a higher intensity. Thus, it is useful to train and maintain cardiovascular fitness which is needed in football games. The HICT modified-FIFA 11+ can be implemented in a routine football training.

Kata Kunci: *FIFA 11+, high intensity circuit training (HICT), injury prevention, football*