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Comparison of Cardiac Output of Cricket Players on the basis of their Playing Experience

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Abstract

Aims: The purpose of this study was to compare the cardiac output of cricket players before and after step test on the basis of their playing experience. **Materials and Methods:** There was one hundred fifty (N=150) trained male cricketers between the ages of 15 and 25 years volunteered for this study. Anthropometric rod, Weighing machine were used. Blood pressure was recorded with a digital sphygmomanometer according to the standardized protocol recommended by World Health Organization. **Results:** The mean age, height weight and BMI (body mass index) of playing experience Group-1(1to5year) cricketer was 17.19±2.06 year, 170.57±7.67 cm, 56.01±8.99 kg and 19.19±2.44 kg/m^2 respectively. The mean age, height weight and BMI (body mass index) of playing experience Group-2(6 to10year) cricketer was 19.50±3.24 year, 173.50±6.46 cm, 62.29±9.20 kg and 20.64±2.47 kg/m^2 respectively. The mean age, height weight and BMI (body mass index) of playing experience Group-3(11to15year) cricketer was 24.67±0.57 year, 174.00±8.54 cm, 69.33±6.02 kg and 23.08±3.86 kg/m^2 respectively. **Conclusion:** It was concluded that the cardiac output showed significant statistical increase represented by values of step test. There was a statistically significant difference in the variance of mean cardiac output (after Queen's step test) of 1 to 5 year, playing experience of 6 to 10 year, playing experience of 11 to 15 year) cricket players.

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Key words: BMI, Cardiac output, Heart Rate, Stroke Volume, Blood Pressure

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Introduction

Nowadays cricketers endure extreme training to be in highest state of physical fitness. Cardiac output (CO) is the quantity of blood or volume of blood that is pumped by the heart per minute. Cardiac output is a function of heart rate and stroke volume (Hussien et al. 2011). It is the product of stroke volume (SV; the volume of blood ejected from the heart in a single beat) and heart rate (HR; expressed as beats per minute) (Zhang et al. 2011). Heart rate (HR), lowering agent which is very useful (Xing et al. 2016 ; Busseuil et al. 2010). During exercise body may need three or four times that of normal cardiac output, because muscles need more oxygen when body exert. During exercise, your heart typically beats faster so that more blood gets out to the body (Hargreaves & Spriet 2020). During exercise, changes in cardiac preload, heart rate, and after load synergize to increase workload, which augments energy demand and influences substrate metabolism. Heart's, this increase in workload is sufficient to increase myocardial carbohydrate and fatty acid catabolism (Goodwin and Taegtmeyer 2000). Further evidence showed that workload is sufficient to change