

An Investigation into the Measurement Level of Maximum Volume of Oxygen (VO₂ Max) Consumption Using Cooper 12-Minutes Run-Test

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Abstract

This study was carried out to investigate the measurement level of maximum volume of oxygen (VO₂ max) rate for a continued period of four weeks (one month) amongst randomly selected Bo Commercial Junior Secondary School (JSS I, II and III) pupils in the Bo Municipality, Sierra Leone. The significance of the study is to measure and compare the VO₂ max of both boys and girls at the three different strata i.e. JSS I, II & III using cooper-12-minutes-run test. A total of thirty (30) pupils (15 boys and 15 girls) were randomly selected at the three levels (JSS I, II & III), with age ranging from ten to seventeen (10-17) years. The Pearson Product Moment Correlation (PPMC) Coefficient, Dependent and Independent t-tests were used to compare the results of the study. The results were tested at ($p \leq 0.05$) level of significance. Analysis of results from weeks one, two, three and four shows both significant and insignificant differences between the measured values of VO₂ max rate of boys and that of girls (JSS I, II & III) at the beginning and at the end of the exercise which is recorded as r values [(i.e. r values ranging from $r = 0.0000$ to $r = 0.7442$) when compared with the c value (i.e. c value = 0.8783)] as shown in tables I, II, III and IV; and as t values [(i.e. t values ranging from $t = 10.249$ to $t = 3.728$) when compared with the dependent and independent c values ($c = 2.776$ and $c\text{-value} = 2.306$)] as shown in tables V, VI, VII, VIII, IX, X, XI and XII. Conclusively therefore, the major findings in this study shows that pupils (boys and girls) were experiencing quick fatigue at the beginning of the exercise which affected the low rate of their VO₂ max calculation greatly but they had to overcome the fatigue as the session continued into the subsequent weeks thereby improving their rate. In recommendation, the most effective approach to improving VO₂ max rate in pupils is by applying the endurance high intensity interval training (HIIT) during practical session in schools.

Introduction

Physical activity is important for children's current and future health with

current recommendations calling for at least 60 minutes of moderate to vigorous physical activity at least 3 times a week