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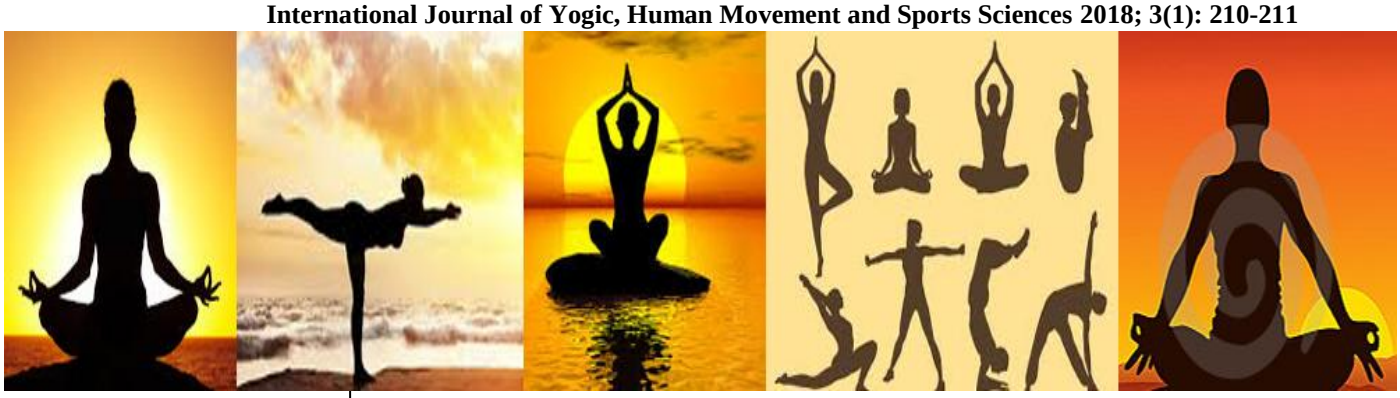

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A comparative study of selected physiological and physical parameters between inter-college and inter-university male cricket players of Punjab

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Abstract
The purpose of this study was to find out the significant differences between inter-college and inter-university level male cricket players in respect to selected physiological and physical parameters. The age of the subjects was ranging between 18-28 years. For this purpose, the following physiological parameters were selected: (i) Blood Pressure: - (a) Diastolic Blood Pressure (b) Systolic Blood Pressure (ii) Pulse Rate and physical parameter (i) Explosive power. The present investigation was conducted on 30 male cricket players, randomly selected from Punjab región of India. The first group contained fifteen (N-15) subjects, who were inter-college level players and the second group also consists fifteen (N-15) players, whom were inter-university level players. Blood pressure (Diastolic & Systolic) and pulse rate were examined at rest with the help of wrist monitor and Explosive power was measured by the standing broad jump. The Data were statistically computed by using of the 't' test, which was employed at 0.05 level of significance. The explosive power of inter-university level male cricket players was significantly higher than the inter-college level male cricket players. The blood pressure (Diastolic & Systolic) and pulse rate had almost same recorded in both groups. The study concluded that the inter-university level cricket players are better than inter-college level cricket players in respect to explosive power.

Keywords: Blood Pressure, Pulse Rate, Explosive Power and Cricket

Introduction
Exercise physiology is a sub-discipline of kinesiology that addresses 1) the short-term biological responses to the stress of physical activity and 2) how the body adapts to repeated bouts of physical activity over time. Exercise physiology is the physiology of physical exercise, that is, study of the acute responses and chronic adaptations to a wide range of exercise conditions. In addition, many exercise physiologists study the effect of exercise on pathology, and the mechanisms by which exercise can reduce or reverse disease progression. Accreditation programs exist with professional bodies in most developed countries, ensuring the quality and consistency of education. As such, exercise physiology professionals often have the responsibility of conditioning a person to a higher level of fitness and/or health while, at the same time, being aware of safety issues (risk of injury, illness, environmental exposure, etc.) associated with a single session of exercise.
Studying the physical compositions and physiological variables of the cricket player served to give information concerning the physical and physiological capabilities of the player, which contributes to the guidance and the rationalization of selecting cricket players and beginners as well as the good basis for targeted practicing. Cricket match most of time get longer, then the physical and motor abilities become more important to perform excellent moves. Physical fitness is the ability of an individual to live a balanced life. With the advancement of science and technology new methods and strategies have been evolved to enhance the performance of the sportsmen with regard to blood pressure, pulse rate and explosive strength. In nutshell it can be say that physiological and physical parameters play an important role in the excellent performance in cricket.

Materials and methods

Subjects

Thirty purposively selected male cricket players of Punjab region (India) aged 18–28 years volunteered to participate in the study. The subjects were highly motivated to participate in this study. They were randomly assigned into two groups: inter-college level players (N_1=15) and inter-university level (N_2=15) male cricket players.

Methods

The blood pressure and pulse rate were measured with the help of wrist monitor. The explosive power was measured with the help of standing broad jump.

Statistical analysis

The Statistical Package for the Social Sciences (SPSS) version 16.0 was used in data analyses. The data pertaining to various groups was analyzed with the help of 't' test. The level of significance was set at 0.05.

Results

Table 1: Mean Values (± SD) of Secondary and Senior Secondary level male cricket players

Groups	Variables	Mean	SD	't' ratio
Inter-College	Diastolic Blood Pressure	82.30	9.80	0.37
Inter-University		83.70	10.60	
Inter-College	Systolic Blood Pressure	126.10	17.75	0.29
Inter-University		127.90	15.20	
Inter-College	Pulse Rate	75.83	11.26	0.26
Inter-University		76.91	10.72	
Inter-College	Explosive Power	76.51	8.90	2.26
Inter-University		85.77	13.10	

Tabulated Value= 2.048, (*) Significant at 0.05 level

Table-1 shows that the mean of diastolic blood pressure was 82.30 & 83.70 for inter-college and inter-university level players respectively. The 't' test value of diastolic blood pressure was 0.37, which is not significant at the 0.05 level of significance. The mean score of systolic blood pressure was computed 126.10 for inter-college level and 127.90 for inter-university level cricket players. The 't' test value of systolic blood pressure was 0.29, which is also not significant at the 0.05 level of significance. The mean value of pulse rate for inter-college and inter-university level players was 75.83 and 76.91 respectively and the value of 't' test was 0.26, which is not significant. The mean of explosive power for inter-college and inter-university level players was 76.51 and 85.77 and the 't' value was 2.26, which is statistically significant at the 0.05 level of significance.

Discussion

The results of the't' value showed significant differences in relation to explosive power between inter-college and inter-university level male cricket players, where inter-university male cricket players were found superior in the components than their counterparts. On the account of blood pressure (Diastolic & Systolic) and pulse rate the result shows insignificant differences between inter-college and inter-university level male cricket players. The present results are in line with the results of Kumar P. *et al*. (2013) [5]. Their study revealed that blood pressure (Diastolic & Systolic) and pulse rate were inter-university level batsmen's, pace bowlers, spin bowlers, wicketkeepers and all-rounders men had almost same mean.

Conclusions

Significant difference was found between inter-college and inter-university level male cricket players on the account of explosive power. With the findings of this study proves that the inter-university level players were significantly break inertia than inter-college level players. However, in respect to left blood pressure (Diastolic & Systolic) and pulse rate the data shows insignificant differences between mentioned groups.

Practical applications

Similar studies can be conducted among females and also in different sports and games to find the physiological and physical parameters sports persons. Further this study can be conducted in different sports and games to find the importance of these parameters in the performance of an athlete.

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