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COMPARISON OF VO_2 MAX AMONG BASKETBALL FOOTBALL AND VOLLEYBALL PLAYERS

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ABSTRACT

For the purpose of the study forty five players were selected from Lucknow university team, participated in inter university tournament in basketball, football and volleyball. Each group consists of fifteen subjects i.e Basketball (N=15), Football (N=15) and Volleyball (N=15). Their age was ranged 20-25 years. The significant difference of maximum oxygen consumption among the players belonging to basketball, football and volleyball the analysis of variance F-ratio was applied at 0.05 level of significance. For further analysis post-hoc test (LSD test) was applied. The basketball players and football players had not shown a significant difference in relation to VO_2 max. On the other hand, volleyball players had lower VO_2 max than basketball and football players.

KEY WORDS: Basketball Football , Volleyball Players , physical educators and coaches.

INTRODUCTION :

Cardio–vascular efficiency reflects the capacity of an individual to undertake and continues physical efforts of sub maximal nature for a relatively longer period of time. To measure cardio vascular efficiency, tests of physical work capacity and VO_2 max have been developed to use in laboratory and field situations to assist the scientist, physical educators and coaches.

Some of these are appropriate only to the modern fully equipped exercise physiology laboratory and customarily make use of bicycle ergo-meter and treadmill. These methods are called direct methods of assessing aerobic power, because they involve collection of expired air during an exercise effort either on treadmill or bicycle ergometer. The collected gas is then analysed and persons VO_2 max is estimated.

The degree to which the cardio-vascular fitness contributes to a particular games or sports depends upon the type and variety of movements involved in them. In sports training much emphasis is laid on those components of physical fitness, which are most fundamental to those sports. Training a long distance runner, cardio vascular and muscular endurance are prime importance, while for sprinting, development of strength, speed is given greater importance. Same is true in training of games such as football, basketball, volleyball, swimming etc. The complex nature of physical fitness includes the muscular strength, muscular endurance, cardio-respiratory endurance and the most important of them is the cardio-respiratory endurance.

METHODOLOGY

Forty five players were selected from lucknow university teams, participated in inter university in Basketball, Football and Volleyball. Each group consisted of fifteen subjects i.e Basketball (N=15), Football (N=15) and Volleyball (N=15). Their age was ranged 20-25 years. The criterion measures chosen were Total Body Weight and VO_2 max. Total body weight was measured by weighing machine and was recorded in kilograms. VO_2 max was measured with the help of step bench test and pulse rate have been recorded. VO_2 max were obtained by applying Astrand and Astrand Nomogram and recorded in liter. To see the significant difference of maximum oxygen consumption among the players belonging to basketball, football and volleyball the analysis of variance F-ratio was applied at 0.05 level of significance. For further analysis post hoc test (LSD) is applied.

FINDINGS

Finding pertaining to VO_2 max of players belonging to basketball, football and volleyball which were subjected to analysis of variance and mean difference method have been presented in the following table.

Table-1
Comparison of VO2 max among basketball football and volleyball players

Source of Variance	df	SS	MSS	F-ratio
Between group	2	569.96	284.98	
Within group	42	1085.54	25.85	11.03*

* Significant of 0.05 level
Tab. F = df 0.05 (2,42) = 2.40

The above Table-1 indicates that there is a significant difference among basketball, football and volleyball players in relation to VO_2 max. As F-ratio found to be significant the data further analyzed with post hoc test. The result pertaining to this are presented in Table-2.

Table-2
Paired mean difference of VO_2 max basketball football and volleyball players

Mean			Mean Difference	CD at 5% level
Basketball	Football	Volleyball		
65.60	63.19		3.41	3.73
65.60		57.14	8.44*	3.73
	63.19	57.14	6.05*	3.73

* Significant at 0.05 level

It is evident from the Table-2 that the Basketball players (65.60) were found to be insignificant with Football players (63.19), as observed mean difference (3.41) was less than CD value of (3.73).

The above table also indicates that the Basketball players (65.60) were found significant with Volleyball players (57.14) as observed mean difference (8.44) was higher than CD value (3.73).

The above table also indicates that the Football players (63.19) were found significant with Volleyball players (57.14) as observed mean difference (6.05) was higher than CD value (3.73).

DISCUSSION OF FINDINGS

From the results of Table-2 it is obvious that basketball players and football had not shown any difference with respect to VO_2 max. This may be due to the fact that the load was experienced by the subject in their respective daily routine training programme has not shown any difference due to nature of their game. Since both the games involved highly endurance type of work load.

Further table-2 reveals that volleyball players had lower VO_2 max than basketball and football players. The reason could be that they were involved in such kind of training, which is based on strength endurance and explosive strength. Volleyball is primarily an anaerobic activity than aerobic activity where VO_2 max is not much essential quality. More over the duration of movement is also very short.

CONCLUSIONS

From the results of the study following conclusions may be drawn:-

1). There is no significant difference in VO_2 max between basketball and football players.

2). Basketball players had shown highest VO_2 max in comparison to football players and volleyball players.

3). Volleyball players had significantly lower VO_2 max than that of basketball and volleyball players.

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