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Aerobic and anaerobic capacity between rural and urban football male players of Haryana- A comparative study

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Abstract

The purpose of the study was to compare the aerobic and anaerobic capacity between rural and urban football male players of Haryana. The study was conducted on 60 players (N=60) 30 Rural and 30 Urban football male players from Bhiwani District of Haryana. For the study, The aerobic capacity was measured by 9-minute run and walk test scoring will be in meters and nearest to 25 meters and anaerobic capacity was measured by 50-meter dash and the score was that time elapsed in the nearest 1/10th of a second. The 'T' test was used for statistical analysis of data and level of significance was set at 0.05 levels.

Keywords: Aerobic capacity, Anaerobic capacity, Rural, Urban, Football.

Introduction

The word aerobic meaning with oxygen to represent idea. Even so the dynamics of the idea are more complicated that implied by the definition. Aerobic can be viewed as an intricate system of bodily supply and demand. That is the body needs energy for any kind of activity and the need is filled by burning off the foods that eat. Oxygen is the spark the fuel needs to burn regardless aerobics is the word in general use.

The fact is that cooper codified and organized what fitness means to many people. Aerobic capacity of athletes is an important element of success in sports achievements. Physiologically, it is functional capacity of an organism to increase the level of metabolic process in keeping with the requirement of physical effort being exposed to. Metabolic process in this sense means the transformation of chemical energy into mechanical VO₂max (maximum oxygen uptake) refers to the intensity of aerobic process and actually denotes the maximum capacity to transport and utilize oxygen during exercise done at increasing intensity. "It is highest rate of oxygen consumption attainable during maximal/ exhaustive exercise." It reflects physical fitness of an individual having athletic capacity.

When the muscular activity is rapid and violent then the source of energy is through anaerobic mechanism, whereas, in the case of a prolonged muscular activity the source of energy initially is through anaerobic processes followed by aerobic process. Short-term muscle power depends on the degradation of ATP and its replenishment from phosphocreatine (PCr). The rate of both processes is comparatively high, but as PCr stores are limited (sufficient for approx. 100 contractions), and need to be replenished by the slower, oxidative metabolism, the high phosphate-based power can be sustained only for a limited time. Therefore, sprinting performance basically relies upon „anaerobic“ mechanisms, whereas endurance performance is usually thought to be limited by „aerobic“ power.

Anaerobic exercise is an exercise intense enough to trigger lactate formation. It is used by athletes in non-endurance sports to promote strength, speed and power and by body builders to build muscle mass. Muscle energy system trained using anaerobic exercise develops differently compared to aerobic exercise, leading to greater performance in short duration, high intensity activities which last from mere seconds to up to 2 minutes. Any activity lasting longer than about two minutes has a aerobic metabolic components.

Anaerobic capacity is the ability to mobilized energy during activities of intense nature i.e. executing intensive work with explosive action in short duration of time, such as kicking the football faster and for explosive take off in jumps, maximum rate for about two to three

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minutes, under water swimming etc. football and hockey players frequently performs different rapid and sudden movements as quick development of force, sprinting, jumping, changing direction, high power shooting, different body impacts etc. Therefore the players require high intensity anaerobic capacity to perform various burst actions in actual situations.

Methods

To achieve the purpose, 60 football players (30 rural and 30 urban football male Players) of Bhiwani District were selected for the current study. The ages of the players were 14 yrs to 19 yrs. The aerobic and anaerobic capacity of the students was measured with help of cooper’s 12 min. run/ walk test and 50 mts dash test.

Statistical Analysis: To compare the aerobic and anaerobic capacity between rural and urban football male players of Haryana ‘t’ test was applied. The level of significance was set at 0.05.

Result and discussion of finding

Table 1: Mean Scores and standard deviation of Aerobic and Anaerobic capacity between rural and urban football male players of Haryana

Game	Aerobic Capacity			Anaerobic Capacity		
	Mean	S.D	‘T’	Mean	S.D	‘T’
Rural Football male players	2.89	.397	1.41	6.79	.360	1.81
Urban Football male players	2.76	.309		6.69	.291	

NS=Not Significant at 0.05 level

The mean values of Rural and Urban football male players on aerobic and anaerobic capacity mean score were 2.89 and 2.76 respectively S.D were .397 and .360 respectively and the anaerobic capacity mean score were 6.79 and 6.69 respectively S.D were .360 and .291 respectively. The results of study showed that there was no significant difference that exists between rural and urban football male players on aerobic and anaerobic capacity. we can say that urban football male players are having better aerobic and anaerobic capacity as compare to rural football male players of Haryana.

Table 2: The mean and standard deviation of aerobic capacity between rural and urban football male players of Haryana in 50 mt dash

Variables	Game	Number	Mean	S.D	D.F	‘t’ ratio
Aerobic capacity	Rural Football Male Players	30	2.89	.397	38	1.41
	Urban Football Male Players	30	2.76	.360		

NS= Not Significant at 0.05 level

The mean values of rural and urban football male players on aerobic capacity were 2.89 and 2.76 respectively S.D were .397 and .360 respectively. The obtained’ value was 1.41 significance of.05 level of confidence with DF 38. The results of study showed that there was no significant difference that exists between rural and urban football male players on

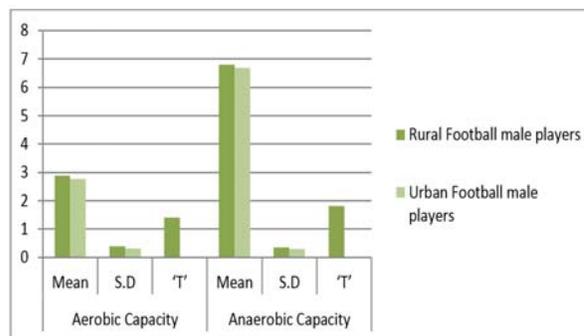
aerobic capacity. The urban football male players are having better aerobic capacity i.e. 2.76 minutes as compare to rural football male players i.e. 2.89.

Table 3: The mean and standard deviation of anaerobic capacity between rural and urban football male players of Haryana in 9 min run/walk test

Variables	Game	Number	Mean	S.D	D.F	‘t’ ratio
Aerobic capacity	Rural Football M.P	30	6.79	.309	38	1.81
	Urban Football M.P	30	6.69	.291		

NS= Not Significant at 0.05 level

The mean values of rural and urban football male players on anaerobic capacity were 6.79 and 6.69 respectively S.D were .309 and .291 respectively. The obtained’ value was 1.81 significance of.05 level of confidence with DF 38. The results of study showed that there was no significant difference that exists between rural and urban football male players on anaerobic capacity. The urban players are having better anaerobic capacity i.e. 6.69 minutes as compare to rural players i.e. 6.79 sec.



Graph 1: Graphical representation of Aerobic and Anaerobic capacity between Rural and Urban football male players of Haryana

Conclusion: From the result of the present study it was concluded that:

- ✓ No Significant difference was found in aerobic capacity between rural and urban football male players of Haryana.
- ✓ Urban football male players are having better aerobic capacity than rural football male players of Haryana.
- ✓ No Significant difference was found in anaerobic capacity between rural and urban football male players of Haryana.
- ✓ Urban football male players are having better aerobic capacity than rural football male players of Haryana.

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