



COMPARISON OF AEROBIC AND ANAEROBIC POWER BETWEEN UNIVERSITY MEN FOOTBALL AND HOCKEY PLAYERS

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Abstract: The purpose of the study was to compare the aerobic and anaerobic power between university men football and hockey players. To achieve the purpose of this study, thirty male football and thirty male hockey players were selected as subjects from the Department of Physical Education and Sports Sciences, Annamalai University and their ages ranged from 19 to 25 years. The criterion variables selected in present study were aerobic and anaerobic power. These were measured using 12 minutes run/walk test and Margaria Kalamen anaerobic power test. To compute the difference between football and hockey players independent t test was calculated. The result showed that there was no significant difference between football and hockey players on aerobic and anaerobic power ($p > 0.05$). It was concluded that there was no significant difference between football and hockey players in aerobic and anaerobic power. This may due to the fact that, basically football and hockey players having the same qualities aerobic and anaerobic performance. So, the difference may not be achieved between each of them.

Keywords: football, hockey, cooper 12 minutes run & walk test, margarita kalamen power test.

Introduction

Fitness is a multifaceted characteristic that encompasses several physiologically independent components. These components are muscular strength, muscular endurance, anaerobic power, cardio respiratory endurance and flexibility. Fitness can be developed with conditioning programme that combine proper individual exercise techniques in a manner that is consistent with several established principles of training.



Fitness is a desirable state for anyone who wants to lead a zestful and productive life and realize his fullest potential. It deserves a concise definition. A high level of general fitness relieves man from disease and it also contributes to their psychological well being and other components are also important. Reasonable muscular development, functional flexibility of the joints, adequate vital capacity of the lungs reserve capacity of the heart and blood vessels and stamina must all be included.

Usually top level sportsmen achieve high standards on being selected on a basis of their competitive sports ability and by systematic training at each level, which enhances their capacity to record higher levels of performance progressively. They work to the highest limit of human endeavor and only unforeseen and severe load may cause transgression of psychological and physiological limits. High performance among in athletes would need, systematic and server training. However stress, strain and above all psychic situations may cause a breakdown.

Physical fitness involves the development and maintenance of a sound physique and of soundly functioning organs to the end that the individual realizes his capacity for physical strains or by a body lacking in strength and vitality. Basic elements of physical fitness are organic soundness, freedom from disease, and nutritional adequacy.

In the physical education field some sports activities like field games (football and hockey) and long distance running need aerobic capacity to perform the activity in a better manner. The vertical jumping ability and flexibility is important for the basketball and volleyball players to show a better playing performance. Agility also relatively helps the players in leading the game smoothly.

The games football and hockey are most popular sports in the world in terms of spectator sports. It is fast, quick and aggressive. They are considered as strenuous games because the games demands a high degree of fitness as well as intelligence and alertness of mind, speed, agility, jumping ability which are the basic qualities for the players. To achieve the best possible performance, the training has to be formulated according to the principles of periodization [1]. The training induced changes observed in body composition, aerobic capacity, anaerobic power and strength can be attributed to appropriate load dynamics. Further, the growth and development phase of life has an impact on training [2, 3].

The purpose of the study was to compare the aerobic and anaerobic power between university men football and hockey players.



Methods

Subjects

To achieve the purpose of this study, thirty male football and thirty male hockey players were selected as subjects from the Department of Physical Education and Sports Sciences, Annamalai University and their ages ranged from 19 to 25 years. Before conducting the tests, all the subjects were oriented and purpose of the test procedures clearly explained to the subjects. The research scholars of the Department of Physical Education and Sports Sciences, Annamalai University, helped to collect the data for the investigator.

Variables and tests

The criterion variables selected in present study were aerobic and anaerobic power. These were measured using 12 minutes run/walk test and Margaria Kalamen anaerobic power test.

Statistical technique

To compute the difference between football and hockey players independent t test was calculated. The mean and standard deviations were calculated and significance level was fixed at 0.05 level. These statistical calculations were calculated using SPSS version 16.

Result

Aerobic

The mean values of football and hockey players on aerobic capacity were 2683.5 and 2730 respectively. The obtained 't' ratio value of 1.57 was less than the required table value 2.002 for significance at .05 level of confidence with df 58. The results of study showed that there was no significant difference that exists between football and hockey players on aerobic capacity.

Anaerobic power

The mean values of football and hockey players on anaerobic endurance were 7.72 and 7.50 respectively. The obtained 't' ratio value of 1.57 was less than the required table value 2.002 for significance at .05 level of confidence with df 58. The results of study showed that there was no significant difference that exists between football and hockey players on anaerobic capacity.



DISCUSSION ON FINDINGS

The findings of the study showed that there was no significant difference between football and hockey players in aerobic capacity and anaerobic power. The game of field hockey and football involves walking, jogging, sprinting in varied directions with and without the ball. In both games lots of movements and skills are involved so, a high level of physical demand is required for match play. As the players have to cover a large area during attack and defence, the game demands aerobic as well as anaerobic fitness. A high number of accelerations and decelerations, associated with the large number of changes in direction of play create an additional load to the muscles involved in field hockey, those players better suited to cope with the demands of the game reach the elite level. The intermittent high intensity pattern of activity during the match requires a high function of both the aerobic and anaerobic energy delivery pathways [2-7]. These are the reason for not having difference between football and hockey players on aerobic and anaerobic power.

CONCLUSIONS

In this study it was concluded that there was no significant difference between football and hockey players in aerobic and anaerobic power. This may due to the fact that, basically football and hockey players having the same qualities aerobic and anaerobic performance. So, the difference may not be achieved between each of them.

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