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AN ANALYSIS OF PHYSICAL PERFORMANCE OF FOOTBALLERS AND SPRINTERS AMONG THE SCHOOL BOYS

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ABSTRACT

The purpose of the study was to analysze the physical performance of footballers and sprinters among the school boys. To fulfil this purpose a total of 30 Footballers and Sprinters age ranged from 14-19 years, were selected from the schools of Fatehgarh Sahib district. Speed, explosive strength and cardiovascular endurance were elected as the physical variable in the study. Speed was measured with the help of 20 Meter dash, Explosive Strength was measured by Standing Broad Jump and Cardiovascular Endurance was measured by 6 Minutes Run & Walk Test. The obtained data was analysed by applying 't' test to examine the significance of mean differences at level of significance 0.05. Results indicates that a significant differences were found in speed, Explosive strength and Endurance between Footballers and Athletes.

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INTRODUCTION

Games and sports as a part of human education have always existed in the human society. Before the dawn of civilization and culture, physical exercise was very important aspect of human existence. In the primitive society, "the necessity for survival", motivated man to keep himself more physically fit and strong enough in comparison to stronger forces of nature (Kamlesh, 1981).Training is not a recent discovery. In ancient times, people systematically trained for military and Olympic endeavors. Today athletes prepare themselves for a goal through training (Bompa, 1999). Training in games and sports is no longer a myth and it has not a casual approach, but it provides opportunities for scientific process and verification. Training has been accepted as a highly specialized science. Physical education scientists are striving to understand the various factors affecting skeletal and muscular activity, during a variety of human movements with the help of electromyography. Scientists are engaged inbio-mechanical analysis of the performance of top athletes by forcing their attention to sports skills.

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They are constantly studying factors like strength, limb length, mass inertia proportion, angular and linear velocity that influence these movements, to get a better insight into the complexities of human motion and performance. The latest approach is aimed at the construction of mathematical model of a skill in a form which is suitable for computer analysis so that it could be stimulated under several carefully controlled conditions for predicting more effective techniques for higher performance (Miller *et al*., 1973).

MATERIALS AND METHODS

Selection of Subjects: The researcher intends to find out the difference in the physical performance of footballer and sprinters among the school boys of Punjab state in the selected physical variables, for this purpose a total of 30 Footballer and Sprinters aged ranged from 14-19 years were selected from the schools of district Fatehgarh sahib.

Selection of Variables

Though both the literature, pertaining to the problem, with the help of experts view and by researcher own understanding, the following variables were considered in the study:

- Physical Performance:-
- Speed
- Explosive Strength
- Cardiovascular Endurance

Criterion Measures

Selected Items of International Physical Performance Test (ICSSPE, 1985) was used to measure the physical performance of the subjects that has following test items:

1. 20 Meters Dash
2. Standing Broad Jump
3. 6 minute Run and Walk

The standardized instruments such as measuring tape, cones and stopwatches were used for collecting the data.

Administration of the test

- **Speed was measured with the help of 20 Meter dash:** On the signal "Take your marks", the subject was asked to stand with his strong foot behind the starting line. On the command ready, the starting signal was given. The subject sprints towards the finishing line. The test was performed twice. The best time was recorded as a score.
- **Explosive Strength was measured by Standing Broad Jump:** The subject was required to jump as long as possible from the take offline. The subject was asked to stand at the take offline, and feet comfortably apart. Then, by bending his knees and taking his arms backward he jumps by extending his knees and swinging his arms forward. No restriction was placed on his arm or leg movements. The score was the distance of the jump in centimetres from the take off line to the back of the heel nearest the line at impact. The test was performed twice, and the best jump was recorded.
- **Cardiovascular Endurance was measured by 6 Minutes Run & Walk Test:** The subjects were instructed to run as far as possible in 6 minutes. The 6 minute run was performed in groups of 10 subjects. The starting line was set at the marked field. The running direction was counterclockwise. The subjects started running on the signal "Ready-go". Walking was permitted, but it was made clear that the objective of the test is to cover as much distance as possible by running. The laps for each subject were counted on a record sheet. The minutes remaining were announced, and the final ten seconds was counted aloud. After 6 minutes, a whistle was blown and the subjects had to stop immediately on the running track/ field. The score was the distance in meters covered in 6 minutes. The distance was calculated by:

"Total laps completed x distance of one lap + the distance of the covered in last lap".

Data Collection

The investigator personally visited the schools and solicited permission from the concerned school principals for the collect of data. The timing of administration of the test was decided with the consent of principal and physical education teacher of the school. The data was collected with the help of test assistants who were adequately trained to administrate the tests. The tests were administered under the close supervision of the investigator in group situation. The standard procedure of data collection was followed throughout the testing programme. The subjects were placed in small manageable groups for the smooth conduct of the testing programme and all the subjects was adequately briefed about the testing procedures and its purposes.

Table 1. Independent t-statistics of the Speed, Explosive Strength and Cardiovascular Endurance of the Footballers and Athletes among the School Boys

Variables	Mean	t	df	N	Sig.
Speed	Football: 3.65 Athletes: 4.15	.225	28	30	.000
Explosive Strength	Football: 1.45 Athletes: 1.22	.125	28	30	.000
Endurance	Football: 1150 Athletes: 1300	.732	28	30	.035

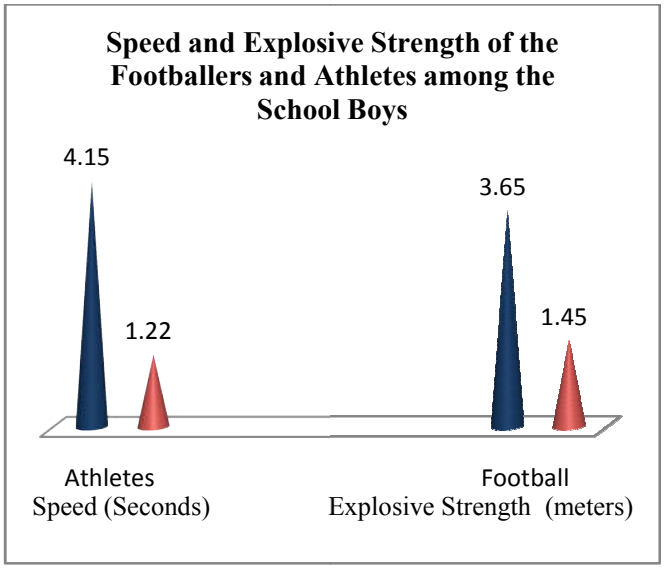

Fig. 1. Graphical Representation of the Speed and Explosive Strength of the Footballers and Athletes among the School Boys

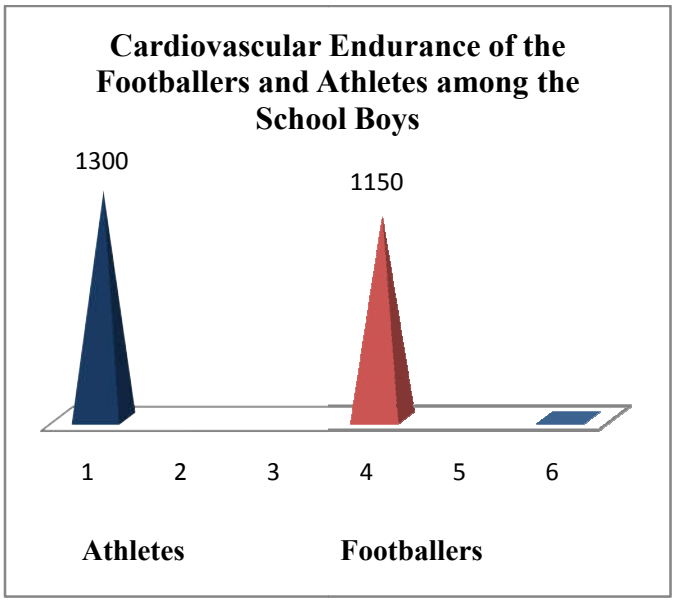

Fig. 2. Graphical Representation of the Cardiovascular Endurance of the Footballers and Athletes among the School Boys

Statistical Procedures: The collected data was analysed by applying the 't' test to examine the significance of mean differences at level of significance 0.05. Computational work of analysis was carried out through 'SPSS' version 17.0 for Windows software. Table 1 depicts that a differences were found in the Speed, Explosive strength and Endurance between Footballers and Athletes, as the mean score of the footballers and athletes in relation to speed, Explosive strength and Endurance was 3.65, 4.15, 1.45, 1.22, 1150 and 1300 respectively, as the significance values were found 0.000, 0.000 and 0.035 which were less than 0.05. So, the null hypothesis of means of two groups was rejected at 0.05 level of significance.

DISCUSSION OF FINDING

The research scholars intend to analysis the physical performance of footballer and sprinters among the school boys. To fulfil this objectives a total of 30 Footballer and Sprintersage ranged from 14-19 years, were selected from the schools of district Fatehgarh. Speed, explosive strength and cardiovascular endurance were elected as the physical variable in the study. Speed was measured with the help of 20 Meter dash, Explosive Strength was measured by Standing Broad Jump and Cardiovascular Endurance was measured by Minutes Run & Walk Test. The obtained data was analysed by applying 't' test to examine the significance of mean differences at level of significance 0.05. Results indicate that a significant difference was found among the Speed, Explosive strength and Endurance of Footballers and Athletes. This difference was occurred due to the reason that in relation to speed and explosive strength which is found better in footballers in comparison to athletes because of the nature of the training and requirements of the game whereas, on the another way athletes also done the speed work but that is also as per the requirement of the competitions. A significance difference was also found in the Cardiovascular Endurance where the endurance capability of the athletes were found to be better than the footballers, it occurred due to the reason that more endure work is done by the athletes on the track whereas, footballers also required strength and speed as per the requirement of the football game. Similar study was also conducted by Luis Penailillo *et al* 2016 the study aimed to examine the relationship between maximum leg extension strength and sprinting performance in youth elite male soccer players.

A Chaalali *et al.,*2016 also conducted the study in the Agility training in young elite soccer players: promising results compared to change of direction drills. The results, methodology, analysis procedure of the above mentioned studies was also adopted in the present study which support the study.

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