International Journal of Physical Education and Sports Sciences

Vol. V, No.I, April-2013, ISSN 2231-3745

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International Journal of Physical Education and Sports Sciences
Vol. V, Issue I, April-2013, ISSN 2231-3745

Comparative Study of Physical Profiles of Football and Hockey Players

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Abstract – The present study was intended to asses the physical profiles of football & Hockey players of Haryana & Punjab states. A sample of 200 sports man from both the states, who had participated at National and interuniversity level tournaments were taken on the basis of random sampling procedure. They were administered 40 meter Dash, 6×10 meter shuttle run, pull-ups medicine ball throw, Ben leg sit-ups standing broad jump, sit & reach test and 2.4 pm run/walk test. The data were analyzed by t-value, mean & SD's. Finding revealed that the football players are better in arm & shoulder explosive strength & leg explosive strength. Whereas hockey players showed better performance in speed & arm strength endurance.

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INTRODUCTION:-

Sports and physical activity has been considered to be an integral part of human life. Physical activity is an indispensable condition of human life and it is universally accepted that sports and games fulfill the requirements of human activities. Today in this stressful life, sports is perceived to be socially as well as personally beneficial activity. Not only individuals but nations also want to show their supremacy in the field of sports.

There are number of games which are popular in various countries. Football & Hockey are two team games, which are popular all over the world, out of which Hockey is our national game. Both games require physical activities such as running, passing, technical skills etc. But technical skills alone are not sufficient to produce winning combination. It also requires mental and physical preparation with proper guidance of the coaches.

Several studies focus on the importance of physical & physiological profiles of the players. Upto and Hagon, (1983) conducted a study on 73 females distance runner & sedentary women on aged range 13-15 years. Results revealed that the untrained subjects were significantly greater in total body weight than the trained subject. The sedentary women possessed a significantly greater amount of body fat, where s both groups were equivalent in lean body weight. Griffin, (1968) conducted a study of heart rate of female in field hockey & basketball. He concluded that the playing field hockey was more demanding in terms of heart rates of the subjects participating than in playing basketball. Grimmelt and Dixit, (1979) measured 21 physiological 18 psychological components of 12 members of from each basketball and volleyball teams along with 12 non athletes from physical education service class. Results revealed significant difference in psychological traits between volleyball & basketball players' capacity status, sociability & tolerance. Both the players also difference in terms of weight (Physiological Component).

Cambell, (1978) conducted a study on heart rates of male colleges freshman during a season of basketball. Using 7 boys who opted for basketball at the beginning of the season as subject, Balkes maximum work capacity test was administered. Result showed that a season of basketball does not produce significant reduction in the time required for heart rate to return to 90 beats per minute.

Several studies citied above shows that apart from technical skill development physical & physiological fitness are also required for an outstanding performance therefore, the aim of present study is to provide a criteria for selecting potential football & Hockey players.

OBJECTIVE

To find out the significance difference in terms of physical fitness of Hockey & football players of Haryana and Punjab states.

HYPOTHESIS

There would be significant difference in physical profile between football & Hockey players of Haryana of Punjab states.

METHOD

Design

A two-group design was used for the present study.

Sample

The sample constituted of total 200 sportsman of Haryana and Punjab state, who had participated at National and interuniversity level tournaments in Hockey and football games. The subject's age range was 18-25 years and belonged to G.N.D.U, Amritsar, P.U. Patiala, M.D.U, Rohtak, K.U. Kurukshetra and almost all districts of Haryana and Punjab. The sample was selected on the basis of random sampling procedure.

TOOLS USED

1) 40 Meter Dash

The 40 meter dash test was conducted to measure the speed of the subjects. The subjects (three at a time) stood behind the starting line. On getting the starting signal (the clap) the subjects ran as fast as possible across the finishing line which was at a distance of 40 meters time was recorded.

2) 6×10 Meter Shuttle Run

The test is used to measure the agility of the subject. Two parallel lines were marked on the floor, 10 meters apart. Three blocks were provided behind a line of 2"×2"×4" dimensions. The subject stood behind the starting line. On the signal "go" they ran to the other line, picked up one block & returned to the starting line. The procedure is repeated with the second and third blocks respectively.

3) Pull-Ups

It is used to measure the shoulder and arm strength. A metal bar approximately 3 cm in diameter was adjusted at a height where subject was able to hang free on the floor. The subject grasped the bar with the palm jacing away from the body. The subject raised his body until the chin was over the bar and then lowered it again to the starting position with his arm fully intended. The maximum number of pull-ups performed by the subject was recorded as the score.

4) Medicine Ball Throw

The test was used to measure the shoulder and shoulder girdle strength. The subject sat with legs intended, holding the medicine ball with both hands keeping behind and over head by flexing elbows. With simultaneous intension of elbow and the forward swing of the upper body the subject threw the ball in forward direction as far as possible. The distance was measured in m/cm. The best of three throws was recorded as the final score.

5) Ben Leg Sit-Ups

The test measured the abominate strength. The subject assumed supine position and flexed the knee (more than 90°). They kept the hands at the back of their head. A partner held the feet on the floor. On "start" signal the subject raised the upper body near vertical, plane as many times as possible in a minute. The correctly executed sit-ups in one minute was recorded as the final score.

6) Standing Broad Jump

This jump holds used to measure explosive leg strength. The subject stood behind the take off line with feet parallel to each other. The subject flexed his knee and took his arm backward. Than with a vigorous forward swing of arm and extension of flexed knee, to the subject took off and jumped forward as far as possible and landed on both the feet. The measurement in cm was the nearest mark made by heel or any other part of the body.

7) Sit and Reach Test

The test was used to measure the flexibility of the subjects. The subject sat on rubber matting with his knee straight, legs slightly separated and the feet pressed firmly against the scale. Then, the subject was asked to intend his arm forward with his hand placing palm down on the upper surface of the scale. From this position the subject bent forward and maximum reach middle finger in bending forward was recorded to the nearest cm. the best of there trials was taken as the score.

8) 2.4 pm Run/Walk Test

Cardio respiratory endurance, was measured with this test. It was conducted on 400 meter track & the same regulations were followed as to conducted long distance races on the track. The subject ran full 6 rounds of the track and the time was recorded in minute & seconds.

PROCEDURE

All the subjects were first explained the purpose of the study. The incharge coaches were requested to co-operate. The subjects were motivated by the coaches & the researcher to participation in the testing programme. Instruction & demonstration for each test were explained & their doubts were also cleared. Practice trials were followed by actual tests. The subjects were tested only during morning and evening seasons. The tests were conducted at the track & gymnasium of universities. Four days were utilized for conducting the tests.

RESULTS

The present study was intended to find out the significant difference in terms of physical fitness of Hockey & football players of Haryana & Punjab states. To accomplish this two groups of Hockey & football players from Punjab & Haryana states were taken. To achieve the objective, data were analyzed by applying 't' test, Mean & S.D's.

For measuring speed, 40 meter dash test was used. It was found from table 1 that mean (SD) of hockey & Football players were 5.992 (±.382) & 5.550 (±.2+0) respectively. Moreover, the two groups (i.e. Hockey & football players) differ significantly (t = 9.822, df = 198). The lower mean value of football players indicated that they had lower speed than hockey players. Whereas in terms of agility the groups (i.e. hockey & football player 14.62 ±589) did not differ significantly (t = .758 ,df=198) (Table 1). This indicates that both groups one more or less equal in agility. Taking arm strength endurance into consideration, it was revealed that the two groups differ significantly (t = 4.467, df=198). Form table 1 it is also clear that higher mean value of hockey players i.e 9.32 (± 2.37) had better arm strength than football players with mean (S.D) is 8.02 (± 2.0).

Medicine ball thrown was used to measure arm & shoulder explosive strength for both the groups. The mean (SD) of both the groups as 6.968 (±.686) Hockey & 7.423 (±. 661) football respectively form 't' test it was found that two groups differ significantly (t = 4.840). Also the higher mean value of football players indicated better shoulder explosive strength than hockey players. The t- value of two groups i.e. Hockey 48.67 (± 6.240) and football 49.21 (± 6.147) players was .617 on variable abdominal strength, indicating that the two groups had equal abdominal strength. Similarly the two groups did not differ significantly (t = .032) in terms of cardio respiratory endurance and flexibility (t = .947) which means that both the groups are equal on these physical profiles. Lastly, standing broad jump test which was used to measure leg explosive strength. The mean (SD) of tow groups (i.e. Hockey & Football players) were 2.458 (± .164) & 2.545 (± .104) respectively. The t-value (t = 5.117) showed significant difference between two groups. The higher mean value of football players indicated better leg explosive strength than hockey players.

In nutshell, it is clear that on variables such as speed, arm strength endurance arms & shoulder explosive strength and leg explosive strength these is significant difference between the groups. And one variables such as agility, abdominal strength, flexibility & Cardio respiratory endurance, the groups does not differ significantly results also revealed that the football players one better in arm & shoulder explosive strength & leg explosive strength; hockey players. Whereas hockey players are better performance than football players variable speed farm strength endurance. Thus, results would help the coaches sports trainer and physical education teachers to prepare the guidelines to select Hockey & Football players & according preparing the training programming, which will enhance their performance in future.

Table 1 : Mean & SD's of Physical Variables of Football & Hockey players of Haryana & Punjab States (With t-value)

Variables	Hockey Mean (SD)	Football Mean (SD)	't' value
Speed (Sec.)	5.992 (± .382)	5.50 (± .270)	9.822**
Agility (Sec.)	14.552 (± .704)	14.621 (± .589)	0.758ns
Arm strong endurance (No.)	9.32 (± 2.137)	8.02 (± 2.0)	4.467ns
Arm & Shoulder Explosive Strength	6.968 (± .686)	7.423 (± .661)	4.840**
Abdominal Strength (No.)	48.67 (± 6.240)	49.21 (± 6.147)	.617ns
Leg Explosive strength	2.458 (± .164)	2.545 (± .104)	5.117**
Flexibility (cm)	13.97 (± 4.29)	14.53 (± 4.248)	.947ns
Cardio respiratory endurance (min/sec)	8.766 (± .626)	8.169 (± .686)	.032ns

** - Significant at .01 level
ns - Non-Significant

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