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COMPARATIVE STUDY OF REACTION TIME, EXPLOSIVE ARM STRENGTH, AGILITY, SPEED AND COORDINATION BETWEEN THE SOCCER PLAYERS AND HOCKEY PLAYERS

Dr.Yogesh S.Nirmal
Assistant Professor
Degree College of Physical Education,
Amravati.(M .S)

Abstract

The Primary aim of the study was to investigate the significance of difference in the fitness components of Reaction Time, Explosive Arm Strength, Agility, Speed and Coordination Betweenthe Soccer players and Hockey players. For the purpose of this study 15 Soccer players and 15 Hockey players from Degree College of Physical Education, Amravati acid their age was ranging from 18 to 25 years and the subjects were selected by purposive sampling method. To measure Agility Illinois test was used and score was recorded in seconds Nelson Hand Reaction Time test was used to measure the reaction time and score was recorded in cm. Nelson's Eye - Hand Coordination test was used to measure the Coordination and score was recorded in seconds. Overhead Medicine Bali Throw was used for Explosive Arm Strength and the score was recorded in meters. 30 meter run was used for Speed and the score was recorded in seconds. To determine the significant difference between the Soccer players and Hockey player's independent test was employed, the level of significance was set at 0.05 for testing the hypothesis.

The findings of statistical analysis revealed that there was significant difference in the variable of Agility (t=2.884) but insignificant difference was observed in case of Coordination (t=1.8), Speed (t=0.06), Reaction Time (1=1.14), Explosive Arm Strength (t= 0.883) between the Soccer players and Hockey players

Key words: Agility, Coordination, Reaction Time, Explosive Ann Strength, Speed, Soccer players and Handball.

Introduction

Nowadays Games and Sports have become a part and essential of life. Millions of people follow different Sport Events allows the world with an enthusiasm bordering on devotion. Many people participate in Sport and Games for fun, happiness, pleasure for health and fitness. As the world is developing the demands of fitness in games and sports becomes higher. Explosive arm strength, Co-ordination, Speed, Agility, Reaction Time also play great role and are most demanding fitness components which are required to become successful Soccer players and Hockey players. Sports Training arc designed to build such kind of news in an appropriate manner which is the requirement of each spots. Therefore the present study was undertaken and stated as "Comparative Study of Reaction Time, Explosive Arm Strength, Agility, Speed and Coordination between the Soccer players and Hockey players.

The Purpose of the Study

The main purpose of the study was to find out the significant difference of Reaction time, Agility, Speed and Coordination between the Soccer players and Hockey players.

Hypothesis

It was hypothesized that there might be significant difference in Reaction Time, Explosive Arm strength, Agility, Speed and Coordination between the Soccer players and Hockey players. It was further hypothesized that Soccer players would be Superior than the Hockey players in the following variables: Reaction Time Explosive Arm Strength and Coordination.

Methodology

Selection of Subjects

Fifteen (15) Players from Soccer players and fifteen Hockey playersfrom Degree College of Physical Education Amravati were selected as subjects by using purposive sampling method.The age of the subjects was ranging from 18 to 25 years.

Criterion Measures

1 . To measure Agility IIlinois test was used and score was recorded in seconds.

2. Nelson's Hand Reaction Time test was used to measure the reaction time and score was recorded in seconds.

3. Nelson's Eye- Hand Coordination test was used to measure the Coordination and score was recorded in seconds.

4. Overhead Medicine Ball Throw was used for Explosive Arm Strength and the score was recorded in meters. 5.30 meter run was used for Speed and the score was recorded in seconds.

Collection of Data

The necessary data pertaining to the study were collected on all the selected subjects by administering the above mentioned tests. Before the collection of data, research scholar explained the

purpose of the study and detailed procedure of the test totile subjects so that they could put their best efforts during tests.

Analysis of Data

The data pertaining to the study were collected according to the aforementioned manner i.e. procedure, then all the collected data were analyzed by applying descriptive and comparative statistics. Means, Standard Deviation and independent t-test separately was employed for each selected variable to determine the difference between the mean performance of Soccer players and Hockey players. The level of significance to test the hypothesis was set at .05.

Table -1

Description of Mean, Standard Deviation and t- ratio for the Data on Agility of Soccer players and Hockey players

Players	Mean	Standard Deviation	Mean Difference	Standard Error	t-ratio
Soccer players	18.03	0.83	0.75	0.26	2.884*
Hockey players	18.78	0.72			

*Significant at 0.05 level Tab t 0.05(28) = 2.048

From the findings of table-1 it is understood that there is significant difference between the means of Soccer players and Hockey players on Agility, as the calculated t-ratio of 2.884 is greater than the tabulated t-value of 2.048 needed to be significant at 0.05 level for the 28 degrees of freedom.

The mean of Soccer players is 18.03 whereas. Handball players' mean is 18.05 which shows that Soccer players are superior in agility than Handball players. The difference of means is picturesquely depicted in Fig.1

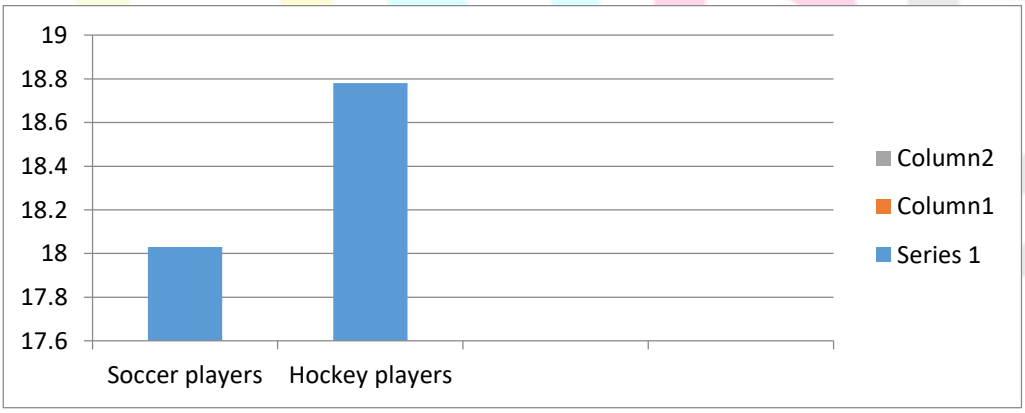

Figure 1: Difference of Means between Soccer players and Hockey players on Agility.

Table -2

Description of Mean, Standard Deviation and t- ratio for the Data on Eye-Hand Coordination of Soccer players and Hockey players

Players	Mean	Standard Deviation	Mean Difference	Standard Error	t-ratio
Soccer players	23.3	1.13	0.9	0.24	1.8*
Hockey players	24.2	1.58			

*Significant at 0.05 level Tab t 0.05(28) = 2.048

An analysis of Table - reveals that there is no significant difference between the means of Soccer players and Hockey players in the variable of' Eye Hand Coordination, as the calculated t-ratio of 1.8 is less than the tabulated t-value of 2.048 needed to be significant at 0.05 level for the 28 degrees of freedom.

The difference of means is picturesquely depicted in Fig.2

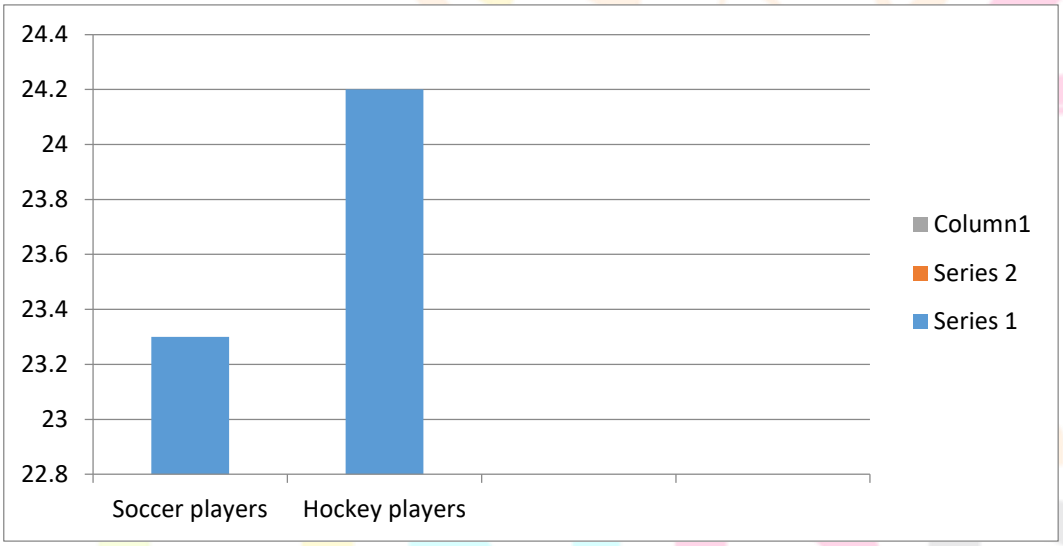

Figure 2 - Difference of Means between Soccer players and Hockey players in Eye-Hand Coordination.

Table- 3

Description of Mean, Standard Deviation and t-ratio for the Data on Speed of Soccer **players and Hockey players**

Players	Mean	Standard Deviation	Mean Difference	Standard Error	t-ratio
Soccer players	4.9	0.51	0.01	0.16	0.06*
Hockey players	4.91	0.36			

*Significant at 0.05 level Tab t 0.05(28) = 2.048

Findings of table -3 reveals that there is insignificant difference between the means of Soccer players and Hockey players in Speed, as the calculated t-ratio of 0.06 is less than the tabulated t-value of 2.048 needed to be significant at 0.05 level for the 28 degrees of freedom. The difference of means is picturesquely depicted in Fig.3

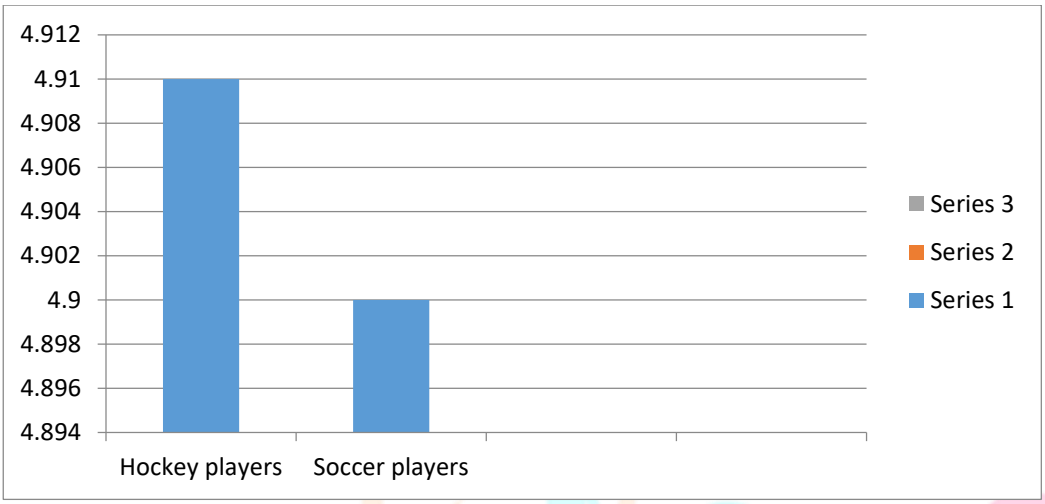

Figure 3: Difference of Means between Soccer players and Hockey players on Speed

Table- 4

Description of Mean, Standard Deviation and t-ratio for the Data on Reaction Time of Soccer players and Hockey players

Players	Mean	Standard Deviation	Mean Difference	Standard Error	t-ratio
Hockey players	13.6	3.51	1.29	1.13	1.14*
Soccer players	12.31	2.65			

*Significant at 0.05 level Tab t 0.05(28) = 2.048

Findings of table -4 reveal that there is insignificant difference between the means of Soccer players and Hockey players on Reaction time, as the calculated t-ratio of 1.14 is less than the tabulated t-value of 2.048 needed to be significant at 0.05 levels for the 28 degrees of freedom. The difference of means is picturesquely depicted in Fig. 4.

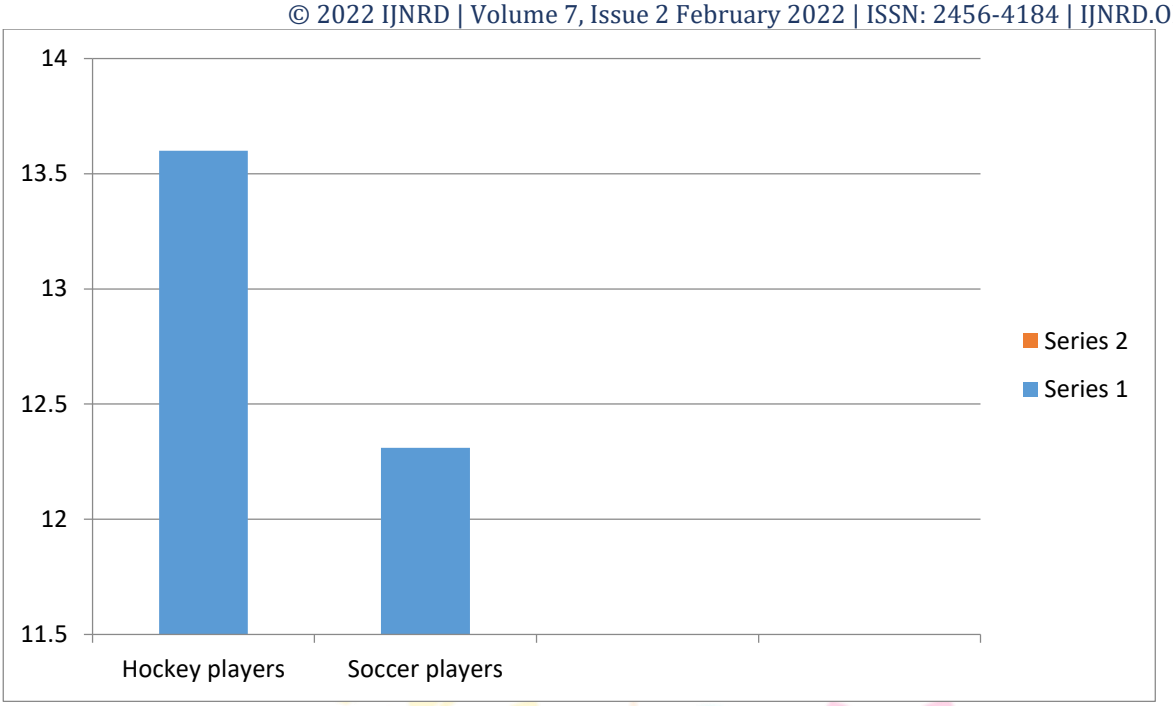

Figure 4: Difference of Means between Soccer players and Hockey players on Reaction Time,

Table- 5

Description of Mean, Standard Deviation and t-ratio for the Data on Explosive Arm Strength of Soccer players and Hockey players.

Players	Mean	Standard Deviation	Mean Difference	Standard Error	t-ratio
Hockey players	23.3	1.13	0.9	0.24	1.8*
Soccer players	24.2	1.58			

*Significant at 0.05 level Tab t 0.05(28) = 2.048

From the findings of table -5 it is quite clear that there is insignificant difference between the means of Soccer players and Hockey players in Explosive Arm Strength, as the calculated t-ratio of 0.883 is less than the tabulated t-value of 2.048 needed to be significant at 0.05 level for the 28 degrees of freedom. The difference of means is picturesquely depicted in Fig.5

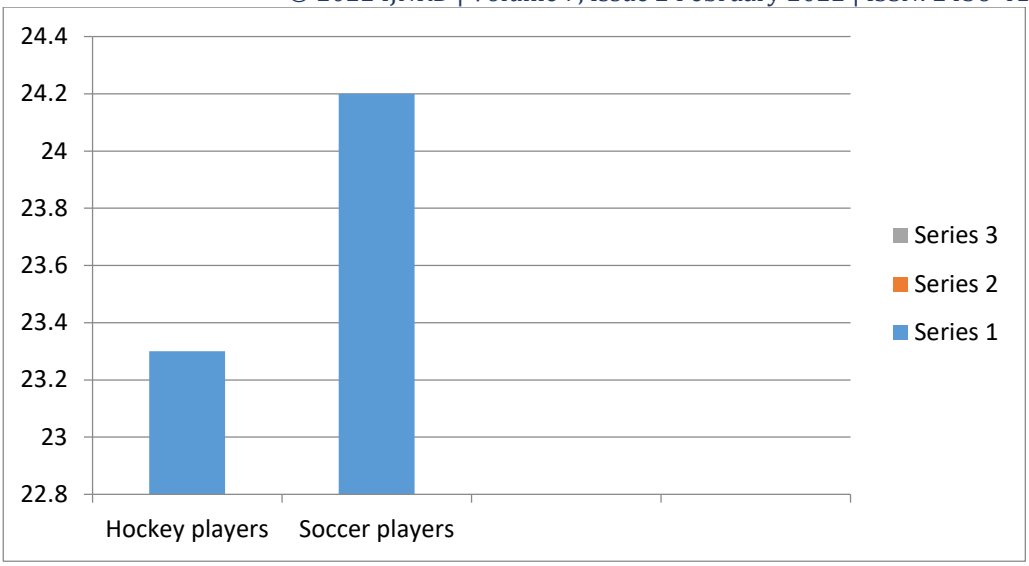

Figure 5: Difference of Means between Soccer players and Hockey players in Explosive Arm Strength.

Discussion on Findings

On the basis of findings it is understood that there was Significant difference between the means of Soccer players and Hockey players in Agility as the calculated t-ratio of 2.884 is greater than the tabulated t-value of 2.048 needed to be significant at 0.05 level for the 28 degrees of freedom. Agility is found greater in Water-Polo than the Handball players. insignificant difference was found in speed, Reaction time, Coordination and Explosive arm strength, in on between Soccer players and Hockey players, it may be because both the game demands badly all the afore stated variables accordingly players might have paid due attention to improve the said variables.

Conclusions

Within the limitations of the present study and on the basis of findings the following conclusions are drawn: Significant difference was observed in the variable of Agility between Soccer players and Hockey players where Soccer players Players showed superior performance compared to Hockey player sand insignificant difference was observed in case of Coordination, Speed, Reaction Time and Explosive Arm Strength.

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