COMPARATIVE ASSESSMENT OF SELECTED MOTOR COMPONENTS AND ANTHROPOMETRIC MEASUREMENTS OF DIFFERENT POSITIONAL FIELD HOCKEY PLAYERS

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Abstract

The Purpose of the study was to compare selected motor components and anthropometric measurement of different positional field hockey players. For this study total sixteen (8 Offensive and 8 Defensive) state level hockey players were selected as subjects from Etawah District (U.P.). Motor Components variables selected for the study were Cardiovascular Endurance and Flexibility, Anthropometric measurement variables were Height and weight. The data was collected for each variable by administering their respective tests. To ensure the reliability of data, sufficient number of trials were given to each subjects. To analyze the data Independent 't' test was applied at 0.05 level of significance. After applying Independent t-statistics in the present study, it was revealed that there is significant difference in Cardiovascular Endurance, Flexibility and Weight of Offensive and Defensive hockey players. In relation to height no significant difference was found among offensive and defensive hockey players. Cardiovascular Endurance and flexibility were found to be more in offensive hockey players while defensive hockey players were found to be better in terms of Weight. The results of the study may be attributed due to the nature of the games played at the respective positions of participants I.e. Offensive and Defensive as both the positions have their own specific demands of different motor components.
Keywords: Cardiovascular endurance, flexibility, Height and weight.

Introduction

Field hockey, or simple hockey, is a team sport of the hockey family. The game of field hockey is played between two teams of eleven players including the goalies. Short sticks made out of wood or fiber glass are used to hit a round, hard rubber like ball. There are no left hand stick is allow to be used. The uniform consists of shin-guards, cleats, skirts or shorts, and a jersey. At the turn of the 21st century, the game is played globally, with particularity thought Western Europe, Asia. The term "field hockey" is used primarily in Canada, the United States, Eastern Europe and other regions of the world where the sport of ice hockey is more popular. Cardiovascular endurance is the most important aspect of fitness. Cardiovascular endurance is also frequently called cardio-respiratory endurance, cardiovascular fitness, aerobic capacity, and aerobic fitness or is sometimes more broadly termed "endurance" — although endurance may also refer to the ability of the muscle to do repeated work without fatigue. It may be defined as the ability of heart and lungs to take in and to transport adequate amounts of oxygen to the working muscles for activities that involve large muscles masses, to be performed over long periods of time. Flexibility is definitely one of the most important aspects of fitness and has a very substantial role in every other part. It is extremely important to maintain a high flexibility, as it will reduce the risk of injury in any sport ten-fold and will also improve your performance. For some, flexibility does not come naturally, but even so it should still be strived for. Flexibility is determined basically by how far a muscle can stretch its fibers. As the fibers can stretch more, the muscle becomes more flexible. For a good physical fitness, it is essential that a person has quite flexible joints and is able to maintain his or her body flexibility. The measurement of structure and proportion of body is called anthropometry. It has wide application as one of the essential parameters constituting the selective diagnostics of any game a sport.

Measurement of body size included such descriptive information as height, weight and body surface area, while measures of body proportion describe the relationship between height and weight and among lengths.

Anthropometric measurement will receive correlation between body structure physical characteristics and sports capabilities. coaches while selecting their teams for participation in tournaments given due consideration to the skill possessed by their players and at the same time they provide due weight age to various anthropometrics measurement, such s height, weight, arm length, leg length etc. Height is the maximum height of the individual when standing erect on a horizontal surface with his head and face in Frankfurt horizontal plane or it is the straight height of the subject up to point vertex. Weight of nude human body with empty bowels is known as body weight.

Methodology
The subjects for this study were selected from Etawah District (U.P.) .Total sixteen (8 Offensive and 8 Defensive) state level hockey player were selected as subjects. Motor Components variables selected for the study were Cardiovascular Endurance and Flexibility, Anthropometric measurement variables were Height and weight. The data was collected for each variable by administering their respective tests. To ensure the reliability of data, sufficient number of trials were given to each subjects. To analyze the data Independent 't' test was applied at 0.05 level of significance.

Results and Findings

TABLE – 1
COMPARISON OF CARDIOVASCULAR ENDURANCE FOR OFFENSIVE AND DEFENSIVE HOCKEY PLAYERS

Player	Mean	S.D	M D	S E	t' ratio
Offensive	82.12	5.51	6.37	2.96	2.45*
Defensive	88.50	6.30			

*Significant at 0.05% level of significance, t (14) (0.05) = 2.14
Table no.1 shows that there is significant difference in cardiovascular endurance among offensive and defensive hockey players as the obtained 't' value 2.45 is significantly higher than the tabulated 't' value 2.14 at the 0.05 level of significance.

TABLE - 2
COMPARISON OF FLEXIBILITY FOR OFFENSIVE AND DEFENSIVE HOCKEY PLAYERS

Player	Mean	S D	M D	S E	t' ratio
Offensive	13.12	4.29	4.62	1.65	2.79*
Defensive	8.50	1.85			

*Significant at 0.05% level of significance, t (14) (0.05) = 2.14
Table no.2 shows that there is significant difference in flexibility among offensive and defensive hockey players as the obtained "t" value 2.79 is significantly higher than the tabulated "t" value 2.14 at the 0.05 level of significance.

TABLE – 3
COMPARISON OF HEIGHT FOR OFFENSIVE AND DEFENSIVE HOCKEY PLAYERS

Player	Mean	S D	M D	S E	t' ratio
Offensive	169.50	6.89	5.12	2.94	1.74
Defensive	164.37	4.66			

*Significant at 0.05% level of significance, t (14) (0.05) = 2.14

Table no.3 shows that there is no significant difference in height among offensive and defensive hockey players as the obtained "t" value 1.74 is significantly lesser than the tabulated "t" value 2.14 at the 0.05 level of significance.

TABLE – 4
COMPARISON OF WEIGHT FOR OFFENSIVE AND DEFENSIVE HOCKEY PLAYERS

Player	Mean	S D	M D	S E	t' ratio
Offensive	65.12	7.39	9.87	3.36	2.94*
Defensive	55.25	5.97			

*Significant at 0.05% level of significance, t (14) (0.05) = 2.14

Table no.4 shows that there is significant difference in weight among offensive and defensive hockey players as the obtained "t" value 2.94 is significantly higher than the tabulated "t" value 2.14 at the 0.05 level of significance.

Discussion of Findings

After applying Independent t-statistics in the present study, it was revealed that there is significant difference in Cardiovascular Endurance, Flexibility and Weight of Offensive and Defensive hockey players. In relation to height no significant difference was found among offensive and defensive hockey players. Cardiovascular Endurance and flexibility were found to be more in offensive hockey players while defensive hockey players were found to be better in terms of Weight.

Conclusion

The results of the study may be attributed due to the nature of the games played at the respective positions of participants I.e. Offensive and Defensive as both the positions have their own specific demands of different motor components.

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