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A relationship of selected motor fitness variables to the skill performance of Karnataka state b-division hockey players

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Abstract

Purpose of the study is to find out the relationship of selected motor fitness variables towards the playing performance of an B division hockey players. 206 male state hockey players were participated as a sample for the study. Different physical fitness components (speed, strength, endurance, flexibility and agility) were measured of samples. Standard procedure was followed to measure the motor fitness variables. To measure the playing performance while samples playing the match three experts of hockey were asked to assess the skills of the player in match situation and give their marks for 50 each. After that all three experts marks were added and averaged to get the marks of playing performance. To measure the speed, shuttle run and endurance standard stop watch was used to record the time while to measure the explosive power and flexibility steel tape was used. Karl-Pearson's co-efficient of correlation technique was used to find out the relationship between motor fitness measurement and skill performance (playing performance). Strength, flexibility and agility are the variables which were found significant co relationship with skill performance. The implication of results are discussed.

Keywords: Motor fitness, speed, strength, endurance, flexibility and agility

Introduction

Sports is the activity through which the physical ability is maintained, improved and maintained by participating in competitive physical activity or games. It provides the enjoyment to participants and entertains the spectators. There are many kinds of sports. Some of them have single participants while some include more than one participant.

Sport is recognized through the system of activity which is based on the physical ability of an individual. However, there are certain sport which is recognized through the mental ability of an individual such as chess. Sports contains some rules which ensures fair competition and allow the best person to win. Winning depends on the ability of a person who is capable of defeating the opponent by following the game rules.

Nowadays days' sports have become the major source of entertainment. It not only draws large crowd but also generates the revenue. A number of competitions is set to be a tournament where the winning person or the winning team is declared as champions. Some sports are played through leagues, whereas some are played in seasons and it follows by playoffs.

Hockey is a very popular game, which is played between two teams of 11 players, each on a hard mud or artificial, synthetic surface, with hooked or bent sticks and a hard leather or synthetic ball. The object is to drive the ball into the opponent' goal by hitting it with the stick. The present day hockey is played on the synthetic artificial surface, which had made the game more safe, beautiful and spectators oriented. Today national and international hockey played on artificial, synthetic surface play fields, is a fast exiting game requiring high level of individual skill, tactical, awareness, mental and physical fitness. Many hours of hard work by coaches and players go into preparing teams to meet the demands of modern hockey tournament, appear to be a gap so large between international hockey an club or school hockey, that it is difficult to appreciate the relevance of one to the other. However, the performance of top class players is important to the beginners and what they learn. Many coaches are teaching and training youngsters progress and cause him/her to learn techniques before developing the modern methods that allow the individual to cope-up with the modern

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game of hockey Balance.

Field hockey is a team sport that offers a total body workout that includes both aerobic and anaerobic components. The development of motor skills, speed, body balance, stamina, and strength are possible outcomes of effective instruction in the sport of field hockey. The natural tempo of hockey is fast and involves interval aerobic and anaerobic activities. All the major muscle groups are activated during the game. Aerobic exercises stimulate both the respiratory frequency and the heartbeat. By so, calorie expenditure increases and as a result of this, body-fat mass decreases and the health of both the respiratory and circulatory systems improve. By the way, these kinds of exercises result in protecting healthy weight and improving body resistance. Hockey sport includes cardiovascular exercises. During the conditions caused by the nature of the game, sudden stops and running again provides important cardio benefits to the person. Hockey includes strength gaining exercises, too, and develops the major muscle groups especially leg (hamstring, quadriceps, calf and hip muscles), arm (triceps, forearm) and shoulder (deltoid) muscles and helps athletic performance by improving muscle endurance. Strength training increases muscle mass and fortify fibrous tissue and bone tissue, and, by doing so, reduces injury risk. All these contribute to forming a healthier, more powerful and more injury-resisting body. Hockey helps improve speed, power, flexibility and fast-reacting qualities of the players. Hockey players must react fast through position changes during the game. Controlling the ball by the hockey stick improves the general balance and hand-eye coordination abilities of the players. Additionally, hockey sport has effects as lowering body-fat percentage and increasing bone-mineral density. So researcher is interested to

find out which physical fitness component is significantly correlated with skill performance.

Method

For the purpose of study 206 male B Division hockey players from various districts of Karnataka state served as the sample for the study. The age of the samples ranged between 16 to 24. In that from Bangalore 76, Kodagu 34, Hassan 33, Mysore 41, Dharwad 08, Davangere 06 and Shimoga 08 are requested to give their motor fitness variables measurements namely speed, strength endurance, flexibility and agility .speed was tested with 50 mts dash and measured in seconds, strength was tested with standing broad jump and measured in mts, endurance was tested with 600 yards run and measured in seconds, flexibility was tested with bridge up test and measured in Cms, and agility was tested with 10mtrs x6 run and measured in seconds. Standard procedure was followed to measure the motor fitness variables. To measure the skill performance, when samples were playing the match three experts of hockey were asked to assess the skills of the player in match situation and give their marks for 50 each. After that all three experts marks were added and averaged to get the marks of skill performance (playing performance). To find out the relationship between motor fitness measurement and playing performance Karl-Pearson's Co-efficient of correlation statistical technique was used.

Results

In the following table we can observe the mean and standard deviation of selected Motor fitness variables and "r" value with significance level in relation to skill performance.

Table 1: In the following table we can observe the mean and standard deviation of Motor sites and "r" value with significance level and relation to playing ability.

Independent Variable	Mean	Standard Deviation	Pearson's co-efficient of correlation	Sig
Speed	7.11	0.49	-0.098	0.081
Strength	2.28	0.45	0.174	0.006*
Endurance	1.73	0.34	0.015	0.414
Flexibility	73.82	9.36	-0.120	0.043*
Agility	9.43	0.74	-0.126	0.035*

From above table we may observe that in selected motor fitness variables strength and endurance were found to be positively correlated with playing performance while speed flexibility and agility were found to be negatively correlated with playing performance. Strength, Flexibility and Agility are the motor variables which were found to be significantly correlated with skill performance.

Discussion

Strength, Flexibility and Agility were found significantly correlated with skill performance in this study. Strength is the important component for hockey game because ball has to travel along the ground or in the air in field hockey. You need strength to pass the ball to your partner along the ground or in the air. Hockey field is larger in size. So ball has to travel a long way when you will use a skill to pass the ball. So strength is the important component and that might influenced here on this study. For field hockey agility is also one of the important required motor fitness variable. Because players has to change their body movement direction quickly and precisely while receiving the pass, when they will dodge the ball, when position of the ball gets turn over and to tackle the ball when ball position is with opponent. So to execute all

these skills agility is the motor fitness variable which is essential. Flexibility is also one of the important motor fitness component which is required for hockey. To tackle the ball from the opponent, reaching to the ball is important thing. So in this skill flexibility is required for hockey player. To stop the ball which is away from you flexibility is also required to do that. So essential motor fitness components strength, flexibility and agility were found significantly correlated with skill performance in this study.

Conclusion

From this study we may conclude that Strength, Flexibility and Agility are the motor fitness variables which were having significantly correlation with skill performance of Karnataka state B Division hockey players.

Recommendations

1. The results of the present study can be very much useful for physical educators, coaches and trainers for screening and selecting potential hockey players at university level, league match and national.
2. Further the result of the study can help experts to frame different methods of training by emphasizing the

development of factors which are significantly related to hockey performance at different levels.

3. It is recommended that the present study is only done only for motor fitness variables, further it can be extended for anthropometric measurement variables, psychological variable and for physiological variable.
4. It is recommended that the present study may be repeated by selecting subjects belonging to different age groups.
5. This study is only limited to male hockey player, further it can be extend to female hockey player also.
6. This study is only limited to B division hockey players it can be further extended to university, super division and A division tournaments.

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