



Effects of Sports Specific Training with Perceptual Skill Training on selected Speed and Agility Variables of Male Inter Collegiate Hockey Players

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Abstract

The aim of the research is to investigate the effects of sports specific training with perceptual skill training and sports specific training on motor fitness components of male inter collegiate hockey players. To execute the investigation, forty five (N=45) College hockey players studying from different Colleges affiliated to Madurai Kamaraj University, Madurai District, Tamil Nadu, India were randomly selected as subjects. They were divided randomly into three groups of fifteen each i.e. (n=15). Group-I participates in sports specific field training and perceptual skill training, Group-II in sports specific field training, Group-III in traditional training or Control group with their age ranging from 18-23 years. The Experimental groups participated in particular training period on alternate days for twelve weeks. For sports specific field training with perceptual skill training, the training period was restricted to alternate days (Monday, Wednesday and Friday) every week and the training period per week was also limited to three sessions. For sports specific field training the training period was restricted to alternate days (Tuesday Thursday and Saturday) every week and the training period per week was also limited to three sessions. The dependent variables designed for this research were speed and agility. All the three groups were tested on the speed and agility before and immediately after the experimental period. The data obtained from the experimental groups before and after the experimental period were statistically investigated with dependent "t"-test and Analysis of covariance (ANCOVA). At any time the "F" ratio for adjusted post-test means was created to be significant. The Scheffe's Post hoc test was used to fix the paired mean differences. The level of confidence was fixed at 0.05 level for all groups. The result of the research revealed that there was a significant improvement on Speed and Agility after the sports specific training with perceptual skill training, sports specific training and significant difference was created among the training groups on Speed and agility in favour of sports specific training with perceptual skill training.

Keywords: Sports Specific Training, Perceptual Skill Training, Speed, Agility and Hockey.

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Introduction

A sport has universal appeal has led the whole world towards gaining by the display of nurtured skills. Sport form is an inspiring and inseparable part of the system of physical education. Physical education offers opportunities in competitive situations for physical, social, emotional and moral developments. Sports and Games are the best ways to earn social recognition and acquire a status in the modern society. Sports and games in the recent years occupy a very prominent and vital role in the societies and also in every sphere of life.

Perceptual skill-training offers, perhaps, a valuable for preparing sportsmen on main skills, as per expected standard. Perceptual skill training is used when sportsmen are unable to physically train or unable to

familiarize themselves with repetitive vital circumstances from their game. Perceptual skills training and several research areas focus on a number of key theories and principles. The leading purpose of any training intervention should be the efficacy of retention and transfer of learning from training to field situations. The principles of making practice tasks repeated on the playing ground, therefore, raise the amount of transmission that happens. These principles are perception-action coupling, the related intervention outcome and related information, which have better level of similarity among training and actual performance when planning perceptual skills training.

There is no doubt that the form of the game is related to perceptual skills as well as physical fitness and motor fitness aptitudes. In recent years, perceptual skills have established great investigation interest within the sports field, particularly the assessment among skillful and beginner performances (Memmert et al., 2009). Investigation in the area of consideration recommends

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that skilled sportsmen and beginners across several fields of expertise change in their basic attention talents (Allen et al., 2004; 2006; Bellenkes et al., 1997). In addition, there is recent evidence for enhanced basic attentional abilities among video-game experts (Green and Bavelier, 2003). Relatively a smaller amount of investigation has been conducted on enlightening perceptual skills among athletes.

Hockey is our national game and has attained greater level of popularity all over the World and played on sand, natural grass and artificial turf ground. The modern game of hockey demands that each member of the team be able to play in all positions. A lively attack needs an all-rounder and players must develop their skills to play in any position. One of the greatest pleasures in the sports is exposure to performance at its highest level. The highest level requires skill attainment, mental toughness, practice and dedication. Team sports require high level of hand and leg power for achieving success at elite level of competitions. As competitions are increasing day by day, the variety of training also increases as it has become an important factor to improve the performance. Hockey is a game of great skill and to play it well is an art in itself. It calls for powerful wrists, keen eyes, intelligence, presence of mind, good eyesight and reflexes, motivation, dedication and stamina. It also calls for great sportsmanship, tolerance and coolness. In short, the game demands the best both as a player and as a man.

Independent Variables

- Sports specific training with perceptual skill training
- Sports specific training

Dependent Variables

- Speed
- Agility

Methodology

The aim of the research was to investigate the effects of sports specific training with perceptual skill training on speed and agility of male inter collegiate

hockey players. To execute the investigation, forty five (N=45) College hockey players from different Colleges affiliated to Madurai Kamaraj University, Madurai District, Tamil Nadu, India were randomly selected as subjects. They were divided randomly into three groups of fifteen each i.e. (n=15). Group-I participates in sports specific field training and perceptual skill training, Group-II in sports specific field training, Group-III in traditional training or Control group with their age ranging from 18-23 years. The Experimental groups participated in particular training period on alternate days for twelve weeks. For sports specific field training with perceptual skill training, the training period was restricted to alternate days (Monday, Wednesday and Friday) every week and the training period per week was also limited to three sessions. For sports specific field training the training period was restricted to alternate days (Tuesday Thursday and Saturday) every week and the training period per week was also limited to three sessions. The dependent variables designed for this research were speed and agility. All the three groups were tested on the speed and agility before and immediately after the experimental period. The data obtained from the experimental groups before and after the experimental period were statistically investigated with dependent “t”-test and Analysis of covariance (ANCOVA). At any time the “F” ratio for adjusted post-test mean was meant to be significant. The Scheffe’s Post hoc test was used to fix the paired mean differences. The level of confidence was fixed at 0.05 level for entire groups.

Results and findings

Motor Fitness components

1. Speed

The investigation of dependent ‘t’-test of the information gained on speed of the subjects in the pre-test and post-test of sports specific training with perceptual skill training, sports specific training and traditional training or control group has been exhibited in Table-I.

Table 1
Pre and post tests mean and dependent ‘t’ test scores on speed

Mean	Sports Specific Training With Perceptual Skill Training Group (I)	Sports Specific Training Group – (II)	Traditional Training or Control Group Group-(III)
Pre- test mean	7.74	7.73	7.67
Post-test mean	6.99	7.19	7.64
‘t’-test	4.00*	2.40*	0.59

*** Significant at 0.05 level.(Required value for ‘t’-test with df 14 is 2.15)**

Table –I shows that pre-test mean on Speed of sports specific training with perceptual skill training, sports specific training and traditional training or control group remained 7.74, 7.73 and 7.67 respectively. The post-test mean remained 6.99, 7.19 and 7.64 in that order. The gained dependent t-ratio values among the pre and post-test means on Speed of sports specific training with perceptual skill training, sports specific training and traditional training or control group remained 4.00, 2.40 and 0.59 in that order. The required value for

significant difference with df 14 at 0.05 level was 2.15. It was concluded that Experimental groups such of sports specific training with perceptual skill training and sports specific training group had registered significant improvement on Speed. The results of the Analysis of Covariance of the sports specific training with perceptual skill training, sports specific training and traditional training or control group on Speed remained as exhibited in Table – 2.

Table 2
Analysis of covariance on speed

Sources Of Variance	DF	SS	MS	OF	TF
Total	N-1 45-1 44	SST _{YX} 4.62	0.105	5.717	3.22
Between	K-1 3-1=2 2	SSBG _{YX} 0.989	0.494		
Within	N-K 45-3=42 42.00	SSWG _{YX} 3.633	0.1		

(The table value is 3.22 at 0.05 levels)

Table- 2 above shows that the gained ‘F’ ration is 5.71. The gained ‘F’ ratio of 5.71 is greater than table value of 3.22 essential for significance at 0.05 level of confidence on Speed. So, the sports specific training with perceptual skill training and sports specific training definitely helps to improve the speed of male inter collegiate hockey players and a significant change was accepted. The outcomes of the research shows that there

are significant differences among the adjusted post-test means of sports specific training with perceptual skill training, sports specific training and traditional training or control group on Speed. To fix the corresponding mean has a significant difference, the Scheffe’s test was used as Post hoc test and the outcomes are exhibited in Table –3.

Table 3
Scheffe’s adjusted post test paired means on speed

Adjusted Post-test Means			Mean Difference	Confidence Interval
Sports Specific Training With Perceptual Skill Training Group (I)	Sports Specific Training Group – (II)	Traditional Training or Control Group Group-(III)		
6.98	7.19		0.21*	0.19
6.98		7.68	0.70*	0.19
	7.19	7.68	0.49*	0.19

*** Significant at 0.05 level of confidence**

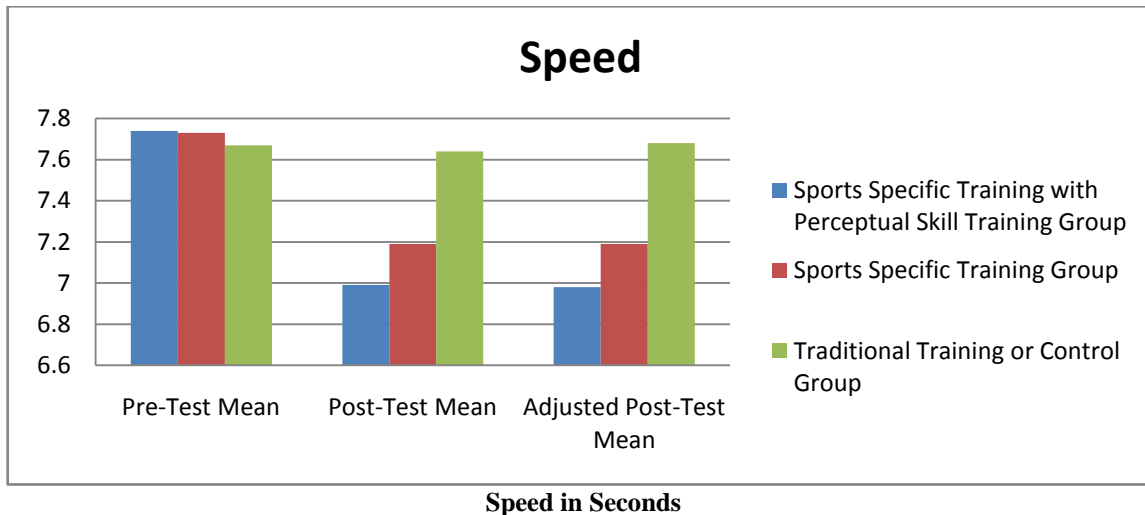
Table-3 displays the adjusted post-test mean variances on Speed of sports specific training with perceptual skill training and sports specific training group, sports specific training with perceptual skill training and traditional training or control group and sports specific training and traditional training or control group remains 0.21, 0.70 and 0.49 in respectively, which

remains larger than the confidence interval value of 0.19 on Speed at 0.05 level of confidence. The outcomes of the research prove that there is a significant change among the sports specific training with perceptual skill training and sports specific training group, sports specific training with perceptual skill training and traditional training or control group and sports specific

training and traditional training or control group on Speed. The above data also reveal that sports specific training with perceptual skill training group has shown better performance than sports specific training and traditional training or control group on Speed. The pre-

test, post-test and adjusted post mean values of sports specific training with perceptual skill training group has shown better performance than sports specific training and traditional training or control group on speed were graphically represented in the Figure -I.

Figure I



2. Agility

The investigation of dependent ‘t’-test of the information gained on agility of the subjects in the pre-test and post-test of sports specific training with

perceptual skill training, sports specific training and traditional training or control group has been exhibited in Table-IV.

Table 4
Pre and post tests mean and dependent ‘t’ test scores on agility

Mean	Sports Specific Training With Perceptual Skill Training Group (I)	Sports Specific Training Group – (II)	Traditional Training or Control Group Group-(III)
Pre-test mean	10.56	10.61	10.49
Post-test mean	9.53	9.79	10.47
‘t’-test	5.80*	4.54*	0.89*

* Significant at 0.05 level.(Required value for ‘t’-test with df 14 is 2.15)

Table 4 shows that the pre-test mean on agility of sports specific training with perceptual skill training, sports specific training and traditional training or control group remains 10.56, 10.61 and 10.49 respectively. The post-test mean remains 9.53, 9.79 and 10.47 respectively. The gained dependent t-ratio values among the pre and post-test mean on agility of sports specific training with perceptual skill training, sports specific training and traditional training or control group remains 5.80, 4.54 and 0.89 respectively. The required value for

significant difference with df 14 at 0.05 level is 2.15. It is concluded that Experimental groups such as of sports specific training with perceptual skill training and sports specific training group have registered significant improvement on agility. The results of the Analysis of Covariance of the sports specific training with perceptual skill training, sports specific training and traditional training or control group on agility is exhibited in Table – 5.

Table 5
Analysis of covariance on agility

Sources Of Variance	DF	SS	MS	OF	T F
Total	N-1 45-1 44	SST _{YX} 8.94	0.20	15.60	3.22
Between	K-1 3-1=2 2	SSBG _{YX} 3.80	0.90		
Within	N-K 45-3=42 42.00	SSWG _{YX} 5.12	0.1		

(The table value is 3.22 at 0.05 levels)

Table- 5 above shows that the gained 'F' ration is 15.60. The gained 'F' ratio of 15.60 is greater than table value of 3.22 essential for significance at 0.05 level of confidence on Agility. So, the sports specific training with perceptual skill training and sports specific training definitely improves the agility of male inter collegiate hockey players and a significant change was accepted. The outcomes of the research shows that there are

significant differences among the adjusted post-test means of sports specific training with perceptual skill training, sports specific training and traditional training or control group on Agility. To fix the corresponding mean has a significant difference. The Scheffe's test was used as Post hoc test and the outcomes were existed in Table – 6.

Table 6
Scheffe's adjusted post test paired means on agility

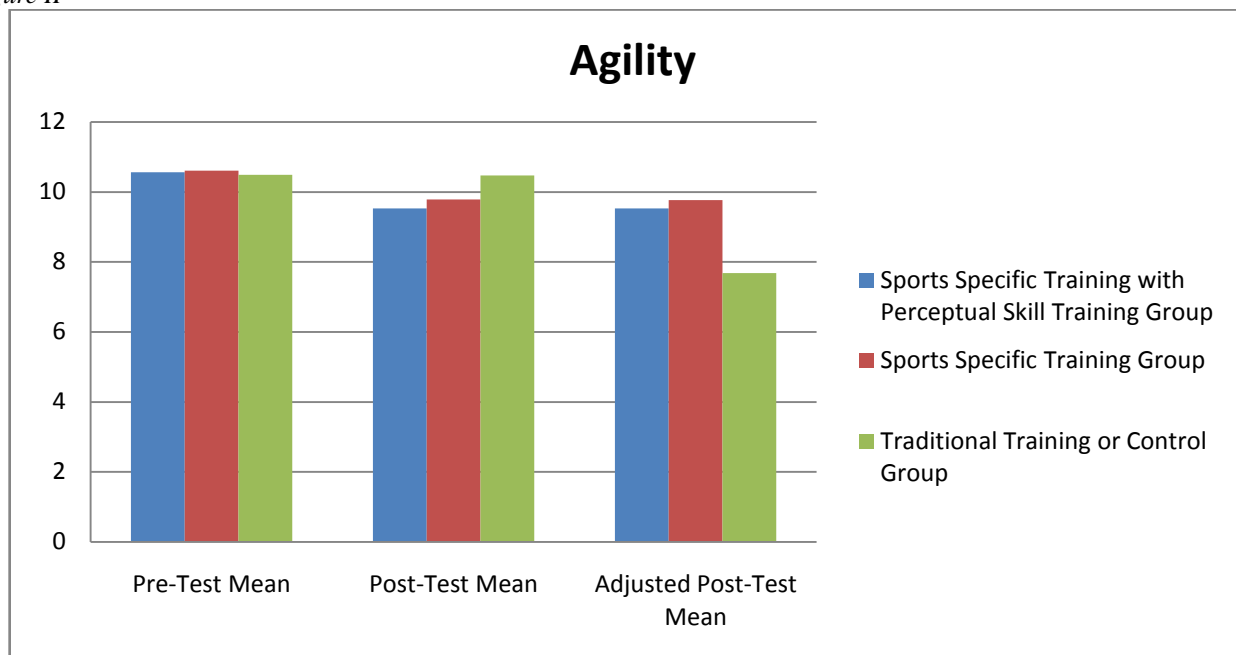
Adjusted Post-test Means			Mean Difference	Confidence Interval
Sports Specific Training With Perceptual Skill Training Group (I)	Sports Specific Training Group – (II)	Traditional Training or Control Group Group-(III)		
9.53	9.77		0.24*	0.19
9.53		10.51	0.98*	0.19
	9.77	10.51	0.74*	0.19

* Significant at 0.05 level of confidence

Table-6 displays the adjusted post-test mean variances on Agility of sports specific training with perceptual skill training and sports specific training group, sports specific training with perceptual skill training and traditional training or control group and sports specific training and traditional training or control group remain 0.24, 0.98 and 0.74 respectively, which remain larger than the confidence interval value of 0.19 on agility at 0.05 level of confidence. The outcomes of the research reveals that there is a significant change among the sports specific training with perceptual skill training and sports specific training group, sports

specific training with perceptual skill training and traditional training or control group and sports specific training and traditional training or control group on Agility. The above data also reveals that sports specific training with perceptual skill training group has shown better performance than sports specific training and traditional training or control group on Agility. The pre-test, post-test and adjusted post mean values of sports specific training with perceptual skill training group had shown better performance than sports specific training and traditional training or control group on agility were graphically represented in the Figure -2.

Figure II



Agility in Seconds

Conclusions

After investigation of the data, the following conclusions are drawn. The outcome of the research similarly reveals that there is a significant development on Speed and Agility after the sports specific training with perceptual skill training, sports specific training and significant difference is created among the training groups on Speed and agility in favour of sports specific training with perceptual skill training.

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