



# Influence Of High Speed Power Training With Perceptual Skill Training On Shooting Ability Among Inter-Collegiate Male Hockey Players

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**Abstract:** The intent of the experimentation was to realize the influence of high speed power training with perceptual skill training on shooting ability among inter-collegiate male hockey players. To carry out the experimentation, Sixty (N=60) inter-collegiate male hockey players studying various arts and science colleges in Virudhunagar district affiliated to Madurai Kamaraj University, Madurai, were randomly chosen as subjects. The chosen subjects were separated randomly into three groups of twenty each i.e., (n=20) Group-I underwent high speed power training program, Group-II underwent high speed power training program with perceptual skill training program, Group-III were act as control group. The age limits of the chosen subjects were ranged from 18-21 years. The training groups were underwent the particular training program for the period of twelve weeks. The dependent variables chosen for this experimentation was hockey shooting ability. All the chosen subjects were tested on hockey shooting ability (Harbans Singh Field Hockey Test) before and immediately after the training program. The pre-test and post-test scores were engaged for proper factual examination with dependent “t”-test and Analysis of covariance (ANCOVA). Whenever the “F” ratio for adjusted post-test means was found to be significant, the Scheffe’s Post hoc test was apply to decide the paired mean differences. The 0.05 level of confidence was fixed for all the cases. The outcome of the experimentation also exposed that there was a significant development on hockey shooting ability after the high speed power training program, high speed power training program with perceptual skill training program and significant variation were found between the training groups on hockey shooting ability in favour of high speed power training program with perceptual skill training program.

**Index Terms - High Speed Power Training, Perceptual Skill Trainingm, Shooting Ability**

## 1. INTRODUCTION

Hockey was the national sport of India, hockey has gained international recognition and the game was played on artificial turf, natural grass and sand. Rapid position switching and a variety of repetitive motions are necessary for the game of hockey. As a result, improving one's stamina is crucial to producing excellent work. The Strength, flexibility, agility, coordination, endurance and stick work were necessary for the hockey skills that will help the players to stop, receive, control and pass the ball in crucial game situations. The players need to undergo a range of training in order to enhance their performance. To play and control the ball, hockey players use the face of their sticks. When the ball touches the back of the stick, it was foul and the opposing team gains possession of the ball.

Achieving a goal in hockey was not an easy task. Hockey players should be taught how to position the balls in relation to the goal post in the various scenarios below. The hockey player can learn to release the balls under pressure, in tense situations and from a variety of angles in the shooting circle. Since goal scoring has different techniques and tactics to achieve, goal scoring was crucial for determining the winner.

High speed power training was the product of force times velocity, speed and strength. It was the rate at which force was applied across a range of motion in the least amount of time. Hockey was a highly dynamic sport where quick moves that last only 10 to 20 seconds movements. The anaerobic zone frequently requires the participant to develop high values of strength in a very short amount of time, resulting in a game time of roughly 30–35%. This was repeated efforts at high depth and varying length occur throughout the competition. Using the concepts of motor learning in speed training can improve observed speed, which is a fine motor skill. Running faster with ball was used to during overspeed training encourages the neuromuscular system to adapt and contract more quickly, increasing stride rate and maximum velocity speed.

Perceptual training was the method through which the capacity of sensory systems to respond to stimuli was improved through repeated exposure. The perceptual skill was the ability to understand the sports - look forward to play. Perceptual skill training was used when player were unable to bodily prepare or not capable to familiarize themselves with repetitive important situation from their game. Perceptions can be categorized into two approaches: the first involves the sensory engagement that transforms lower-level data into more significant actions, exemplified by the sample cutting figures for item appreciation. The second approach pertains to the individual's thoughts, expectations, and awareness, influenced by selective and therapeutic tools such as empathy that shape perceptions. While perceptions rely on complex neural processes, they often seem straightforward, as this processing occurs outside of conscious awareness.

## 2. STATEMENT OF THE PROBLEM

The intent of the experimentation was to realize the influence of high speed power training with perceptual skill training on shooting ability among inter-collegiate male hockey players.

### 2.1 Independent Variables

- High Speed Power Training (HSPT)
- High Speed Power Training with perceptual skill training (HSPTWPST)

### 2.2 Dependent Variable

- Hockey Shooting Ability (Harbans Singh Field Hockey Test)

## 3. METHODOLOGY

### 3.1 Selection of Subject

To carry out the experimentation, Sixty (N=60) inter-collegiate male hockey players studying various arts and science colleges in virudhunagar district affiliated to Madurai Kamaraj University, Madurai, were randomly chosen as subjects. The chosen subjects were separated randomly into three groups of twenty each i.e., (n=20) Group-I underwent high speed power training program, Group-II underwent high speed power training program with perceptual skill training program, Group-III were act as control group. The age limits of the chosen subjects were ranged from 18-21 years.

### 3.2 Test Administration

The training groups were underwent the particular training program that prepared for twelve weeks. The variable dependent on training chosen for this experimentation was hockey shooting ability. All the chosen tests were conducted on the subjects on hockey shooting ability (Harbans Singh Field Hockey Test) both prior and right after the training program.

### 3.3 Shooting Ability: (Harban's Singh Field Hockey test)

#### *Purpose:*

To find out the dribbling and shooting accuracy of the hockey players.

#### *Equipments:*

- Hockey Stick,
- Balls,
- Score sheet,
- Goalpost with specific marking

**Scoring:**

Score of target strike on the goal post on each trial, by a hockey player shall count his scores. Each player can get six trials. Total score of six trials were added and shall be considered as a shooting skill of the hockey player.

Both the pre- and post-test scores were engaged for proper factual examination with dependent "t"-test and ANCOVA. When the adjusted post-test means' "F" ratio was determined to be significant, the Scheffe's Post hoc test was apply to decide the differences in paired means. For every case, the 0.05 level of confidence was set.

**4. RESULT AND FINDINGS****4.1 Hockey Shooting Ability**

The dependent "t"-test assessment of the score getting on hockey shooting ability of the hockey players in the pre and post-test of high speed power training(HSPT), high speed power training with perceptual skill training (HSPTWPST) and control group has been presented in Table-I.

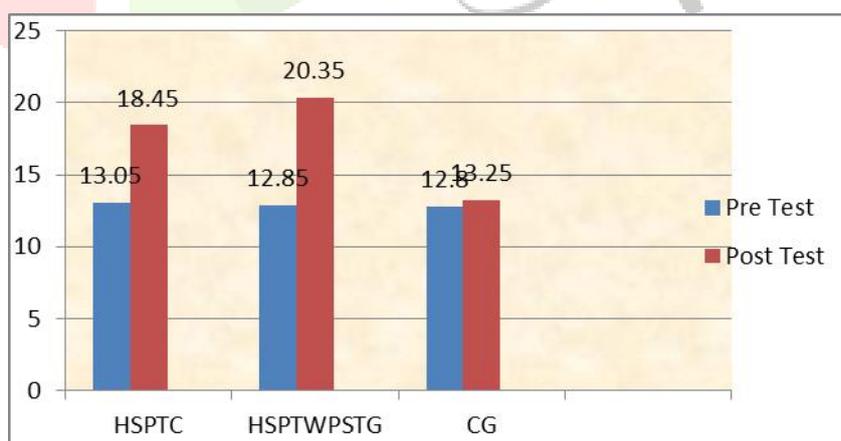
**Table – I**  
**The table of average and dependent "t" test for hockey shooting ability**

Mean	High Speed Power Training Group (I)	High Speed Power Training with Perceptual Skill Training Group – (II)	Control Group (III)
Pre- test mean (S.D)	13.05 (1.66)	12.85 (1.95)	12.80 (1.88)
Post-test mean	18.45 (2.08)	20.35 (2.62)	13.25 (1.80)
't'-test	12.51*	21.79*	1.63

\* 0.05 level of Significance (2.09)

Table –I represents that the pre-test mean value on hockey shooting ability were 13.05, 12.85 and 12.80 respectively. The post-test mean values on hockey shooting ability were 18.45, 20.35 and 13.25 respectively. The gained dependent t-ratio value between the pre and post-test means on hockey shooting ability were 12.51\*, 21.79\* and 1.63 respectively.

The table value required for significant at 0.05 level was 2.09. The findings was concluded that training groups of high speed power training (HSPT) and high speed power training with perceptual skill training (HSPTWPST) had shows significant development on hockey shooting ability.



**Figure – I**

The Bar Diagram Showing the mean values of HSPTC, HSPTWPSTG and CG on Hockey Shooting Ability

The outcome of the ANCOVA of the high speed power training (HSPT) and high speed power training with perceptual skill training (HSPTWPST) and control group on hockey shooting ability were given in Table - II.

**Table – II**  
**ANCOVA table on hockey shooting ability**

Sources of Variance	Sum of Square	DF	Mean Square	OF	T F
Between	540.40	2	270.20	55.95*	2.77
Within	275.25	57	4.82		

0.05 level of significance (2.77)

From the table-II, the obtained 'F'-ratio for adjusted post-test mean for hockey shooting ability was 6.87 which were superior to the table value 2.77 at confidence at 0.05 levels. So the gained 'F' ratio was considerable change at 0.05 level of confidence.

The results of the application of Scheffe's Post hoc test were shown in Table – III.

**Table – III**

**The scheffe's post hoc test table for the differences between the adjusted post test paired means on hockey shooting ability**

Adjusted Post-test Means			Mean Difference	Confidence Interval
High Speed Power Training Group (I)	High Speed Power Training with Perceptual Skill Training Group – (II)	Control Group Group-(III)		
18.32	20.39	-	2.07*	1.41
18.32	-	13.33	4.99*	1.41
-	20.39	13.33	7.06*	1.41

\* *Significant at 0.05 level of confidence*

Table-III represents that the adjusted post-test mean differences on hockey shooting ability of the high speed power training (HSPT) and high speed power training with perceptual skill training (HSPTWPST), high speed power training (HSPT) and control group and high speed power training with perceptual skill training (HSPTWPST) and control group were 2.07, 4.99 and 7.06, respectively which were higher than the confidence interval value of 1.41 on hockey shooting ability at 0.05 level of confidence.

The outcome of the experimentation revealed that there was a notable distinction between the high speed power training (HSPT) and high speed power training with perceptual skill training (HSPTWPST), high speed power training (HSPT) and control group and high speed power training with perceptual skill training (HSPTWPST) and control group on hockey shooting ability.

The outcome shows that high speed power training with perceptual skill training (HSPTWPST) group had exposed enhanced performance than high speed power training group (HSPT) and control group on hockey shooting ability.

## 5. CONCLUSION

The outcome of the experimentation also exposed that there was a significant development on hockey shooting ability after the high speed power training program, high speed power training program with perceptual skill training program and significant variation were found between the training groups on hockey shooting ability in favour of high speed power training program with perceptual skill training program.

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