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## **Effect Of Hockey Specific Training On Physical Fitness Variables Of Male Inter Collegiate Hockey Players**

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**Abstract:** The present study investigated the effect of hockey specific training on physical fitness variables of muscular strength, explosive power and flexibility. The study consisted of 60 hockey male hockey players from selvam educational institutions, Namakkal. Hockey players were randomly assigned to the SPTG (n=30) and CG (n=30). The group were randomly divided into the experimental group-I (SPTG) and the control group (CG). The experimental group-I underwent a hockey specific training programme and the control group underwent traditional method of training. The experimental lasted for 6 weeks of training 5 days in a week, 2 sessions in a day. Statistical analysis followed the most important descriptive statistics, such as *mean and SD*. A *repeated measure't' test* was used to determine the presence or absence of gains in each group. Because of the slight differences in the initial groups, analysis of covariance with the pre-test values as the covariate was used to determine significant differences between the post-test adjusted means in the groups. The results are presented as means (SD). A significance level of 0.05 was used.

**Key words:** hockey specific training, explosive power.

**Introduction:**

Physical fitness is the ability to perform vigorous activity. It is not measured in terms of achieving specific motor skills, but rather it is assessed in terms of squad jump, counter movement jump, and explosive power. The circulatory and respiratory systems are also involved because of their role in supplying muscles with blood and oxygen. In considering muscles, power is the maximum force that can be exerted by a muscle and endurance is the ability to perform a muscular activity at less than maximum force, for example in doing a series of chin-ups.

**Methods:**

The purpose of the study was to find out the effects of hockey specific training on physical fitness variables of male Inter collegiate hockey players. Thirty collegiate hockey players were randomly assigned to the SPTG (n=30) and CG (n=30). The group were randomly divided into the experimental group-I (SPTG) and the control group (CG). The experimental group-I underwent a hockey specific training programme and the control group underwent traditional method of training. The experimental lasted for 6 weeks of training 5 days in a week, 2 sessions in a day.

**Training Protocol**

After the initial measurements, the traditional method training group practiced regular hockey skills; another group practiced hockey specific training and the two trained for 6 weeks. Before the initiation of the training periods, the Subjects of all groups were instructed about the proper execution of all the exercises to be used during the training period for all training regimens.

**Statistical analysis**

Statistical analysis followed the most important descriptive statistics, such as mean and SD. A repeated measure 't' test was used to determine the presence or absence of gains in each group. Because of the slight differences in the initial groups, analysis of covariance with the pre-test values as the covariate was used to determine significant differences between the post-test adjusted means in the groups. The results are presented as means (SD). A significance level of 0.05 was used.

Group		Muscular strength	Explosive power	Flexibility
		Means±SD	Means±SD	Means±SD
specific training	Pre test	15.60±2.16	19.33±1.76	1.31±.11
	Pro test	20.40±1.92	26.40±1.92	1.75±.11*
Control group	Pre test	15.33±2.22	19.80±1.70	1.33±.12
	Pro test	16.53±2.53	21.07±1.62	1.37±.13*

Table: 1

\*Significant difference between pre-post tests ( $P<0.05$ )

The results of Analysis of co-Variance on physical fitness variables are

Variables		Sum of Squares	Df	Mean Square	F value	P value
Muscular strength	Between Groups	93.05	1	93.05	82.45	.00*
	Within Groups	30.47	27	1.13		
Explosive power	Between Groups	238.95	1	238.95	195.46	.00*
	Within Groups	33.01	27	1.22		
Flexibility	Between Groups	1.09	1	1.09	80.96	.00*
	Within Groups	.36	27	1.34		

Table: 2

\*Significant at 0.05 level

### Results:

Table 2 presents the mean and standard deviation during base line and post test in all the experimental group and control group. According to findings obtained from the data; a significant difference was found between pre and post test values for measures of muscular strength ( $t=17.18$ ,  $p<0.05$ ), explosive power ( $21.38$ ,  $p<0.05$ ) and flexibility ( $11.06$ ,  $p<0.05$ ) of the sports specific training group. A significant difference was found between pre and post test values for measures of muscular strength ( $t=5.39$ ,  $p<0.05$ ), explosive power ( $5.55$ ,  $p<0.05$ ) and flexibility ( $4.03$ ,  $p<0.05$ ) of the control group.



The results of analysis of covariance (ANOCOVA) for muscular strength performance revealed that there was a significant difference between groups after the 6 weeks intervention programme ( $F(1,27)=82.45$ ,  $p<0.05$ ), explosive power jump performance revealed that there was a significant difference between groups after the 6 weeks intervention programme ( $F(1,27)=195.46$ ,  $p<0.05$ ), and flexibility performance revealed that there was a significant difference between groups after the 6 weeks intervention programme ( $F(1,27)=80.96$ ,  $p<0.05$ ). The sports specific training group performed significantly better than the control group in muscular strength, explosive power and flexibility.

### **Discussion:**

The purpose of this study was to determine hockey specific training can enhance muscular strength, explosive power and flexibility. The results indicate that hockey specific training is capable of improving the muscular strength, explosive power and flexibility.

This study illustrates that a SPTG program significantly increases hip and thigh power production, as measured by the explosive power, than either the control group. This result is in accordance with previous studies (Adams, et al.1992; Baur, et. Al., 1990; Blakey, & southward, 1979; Ioannis, et. Al., 2000). Improved explosive power performance due to a plyometric training program may also be due in part to increased motor unit functioning. Previous studies have indicated that neuromuscular adaptations such as an increased inhibition of antagonist muscles as well as better activation and co-contraction of synergistic muscles may account for the improvements in power output (Komi, 1984; Lyttle, 1996).

### **Conclusion:**

It was concluded that the hockey specific training showed better development on the physical fitness characteristics of muscular strength, explosive power and flexibility of Inter collegiate hockey players.