



EFFECT OF HOCKEY SKILL TRAINING WITH AND WITHOUT WEIGHT ON SELECTED SPEED, CARDIO RESPIRATORY ENDURANCE AND EXPLOSIVE POWER AMONG SCHOOL LEVEL WOMEN PLAYERS

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ABSTRACT

The purpose of this study was to find out the effect of hockey skill training with and without weight on Speed, Cardio respiratory endurance and explosive power among school level women players. The study was conducted on sixty women students studying at Government Higher Secondary School, Arimalam, and Ariyakudi, Tamil Nadu, India, were selected randomly as subjects. Subjects were randomly assigned equally into three groups, Group –I underwent Hockey Skill with Strength training (n = 20) Group –II underwent Hockey Skill without Strength training (n = 20) and Group III (n=20) acted as control Group. To make adjustments for difference in the initial means and test the adjusted post test means for significant differences, the analysis of covariance (ANCOVA) was used. Since three groups were involved whenever the 'F' ratio was found to be significant for adjusted post means, Scheffe's test was followed as a post hoc test to determine which of the paired means difference was significant. Speed, Cardio respiratory endurance and explosive power showed significant difference among the groups.

KEYWORDS

Speed, Cardio respiratory endurance and explosive power

INTRODUCTION

Sports training are done for improving sports performance. The sports performance, as any other type of human performance is not the product of one single system or aspect of human personality on the contrary it is the product of the total personality of the sports person. (Singh, 1991)

Strength is a very important motor ability as it contributes significantly towards all types of motor performance. It is also an important determining factor for other motor abilities such as speed, agility, endurance and flexibility. Strength training therefore forms an important part of training for all sports and hence must be started in early period and should be continued throughout the long-term training process.

The typical field Hockey player must train for many years to refine technique and to develop the physical fitness factors especially strength, Endurance and speed to reach his individual potential. There are many types of training by which an athlete can improve the above said bio-motor qualities.

Strength exercises performed slowly and at "regular" speeds were evaluated for intensity and effectiveness. Two studies were performed; one with untrained males (N = 65) and females (N = 82). Training was experienced two to three times per week for eight to ten weeks performing one set of each of 13 Nautilus exercises. Regular repetitions were 8-12 at 7 seconds each (2 s lifting, 1 s pause, 4 s lowering). Super slow repetitions were 4-6 repetitions at 14 seconds each (10 s lifting, 4 s lowering). In both studies, super-slow training resulted in ~50% greater increase in strength than regular speed training, although both groups demonstrated significant strength gains. Super-slow strength training should be considered when conditioning muscle structures are the aim of exercising (Westcott, 2001).

METHODOLOGY

The purpose of this study was to find out the effect of hockey skill training with and without weight on Speed, Cardio respiratory endurance and explosive power among school level women players. The study was conducted on sixty women students studying at Government Higher Secondary School, Arimalam, and Ariyakudi, Tamil Nadu, India, were selected randomly as subjects. Subjects were randomly assigned equally into three groups, Group –I underwent Hockey Skill with Strength training (n = 20) Group –II underwent Hockey Skill without Strength training (n = 20) and

Group III (n=20) acted as control Group. The training period was limited to 12 weeks. All the groups were tested on selected criterion variables such as speed, cardio respiratory endurance and explosive power prior to and immediately after the training programme. Speed was assessed by 50 meters run, cardio respiratory endurance was assessed by cooper t12 minutes run/walk test and explosive power was assessed by standing broad jump.

Results and Discussion

The data collected from the experimental group and control group prior and after experimentation on selected variables were statistically examined by analysis of covariance (ANCOVA) was used to determine differences, if any among the adjusted post test means on selected criterion variables separately. The level of significance was fixed at .05 level of confidence to test the 'f' ratio obtained by analysis of covariance on selected criterion variables.

TABLE – I

THE SUMMARY OF MEAN AND DEPENDENT 't' TEST FOR THE PRE AND POST TESTS ON SELECTED CRITERION VARIABLES OF EXPERIMENTAL GROUPS

	Pre test	Post test	t- test	Pre test	Post test	t- test	Pre test	Post test	t- test
SPEED	7.90	7.60	12.95*	8.10	7.90	7.75*	8.10	8.10	0.25
CARDIO RESPIRATORY ENDURANCE	212	238	6.95*	215	235	4.67*	212	211	0.89
	2.50	0.50		2.50	0.50		7.50	7.50	
EXPLOSIVE POWER	1.78	1.87	12.21*	1.76	1.82	9.20*	1.77	1.78	0.83

* Significant at .05 level.

(Table value required for significance at .05 level for 't'-test with df 19 is 2.09)

The table-I shows that the pre, post test mean and dependent t-ratio values of hockey skill training with strength group, hockey skill training without strength group and control group. The table value required for significant difference with df 19 at .05 level is 2.09. Since, the obtained 't' ratio value of experimental groups are greater than the table value, it is understood that hockey skill training with strength group, hockey skill training without strength group programmes had significantly improved the performance of speed, cardio respiratory endurance and explosive power. However, the control group has not improved significantly

as the obtained 't' value is less than the table value, because they were not subjected to any specific training.

The analysis of covariance on selected dependent variables of training package with and without strength training and control groups have been analysed and presented in Table II.

Table-II
ANALYSIS OF COVARIANCE ON SELECTED VARIABLE OF EXPERIMENTAL GROUPS

Adjusted Post-test Means				Source of Variance	Sum of Squares	df	Mean Squares	'F' Ratio
Criterion Variable	Hockey Skill Training with Strength Group	Hockey Skill Training without Strength Group	Control Group					
SPEED	7.72	7.94	8.07	Between With in	1.034 0.474	2 56	0.517 0.008	64.63*
CARDIO RESPIRATORY ENDURANCE	2362.28	2281.44	2123.75	Between With in	3342 57.81 4673 83.30	2 56	16712 8.91 8346.13	20.03*
EXPLOSIVE POWER	1.86	1.82	1.77	Between With in	0.096 0.043	2 56	0.0481 0.001	48.10*

*** Significant at .05 level of confidence**
(The table value required for Significance at .05 level with df 2 and 56 is 3.16)

From table – II, the obtained value of 'f' - ratio for speed, cardio respiratory endurance and explosive power, for adjusted post test means were 64.63, 20.03 and 48.10. The obtained F-ratio value is 48.10, which is higher than the table value 3.16 with df 2 and 56 required for significance at .05 level. Since the value of F-ratio is higher than the table value, it indicates that there is significant difference among the adjusted post-test means of hockey skill training with strength group, hockey skill training without strength group and control group. To find out which of the three paired means had a significant difference, the Scheffe's post-hoc test was applied and the results are presented in Table III.

TABLE II
SCHEFFE'S TEST FOR THE DIFFERENCES BETWEEN THE ADJUSTED POST TEST PAIRED MEANS

	Hockey Skill Training with Strength Group	Hockey Skill Training with out Strength Group	Control Group		
SPEED	7.72	7.94		0.22*	0.07
	7.72		8.07	0.35*	0.07
		7.94	8.07	0.13*	0.07
CARDIO RESPIRATORY ENDURANCE	2362.28	2281.44		80.84*	72.63
	2362.28		2123.75	238.53*	72.63
		2281.44	2133.75	147.69*	72.63
EXPLOSIVE POWER	1.86	1.82		0.04*	0.03
	1.86		1.77	0.09*	0.03
		1.82	1.77	0.05*	0.03

Table-III shows that the adjusted post test mean differences on speed, cardio respiratory endurance and explosive power between hockey skill training with strength group and hockey skill training without strength group, hockey skill training with strength group and control groups, hockey skill training without strength group and control groups are greater than the confidence interval value at .05level of confidence.

Conclusion

From the analysis of the data, the following conclusions were drawn.

1. Two experimental groups namely hockey skill training with strength group and hockey skill training without strength group have achieved significant improvement on Speed, Cardio respiratory endurance and Explosive when compared to the control group.

2. Significant differences were found between hockey skill training with strength group and hockey skills training without strength group have achieved significant improvement on Speed, Cardio respiratory endurance and Explosive power.

3. It may be concluded that hockey skill training with strength group is found to be better than hockey skill training without strength group to increase Speed, Cardio respiratory endurance, Explosive power.

References

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