



**ISOLATED AND COMBINED EFFECT OF YOGIC PRACTICES
AND ISOMETRIC EXERCISES ON ARM STRENGTH
AMONG SCHOOL HOCKEY PLAYERS**

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Abstract

The purpose of the present study was to find out the effect of isolated and combined effect of yogic practices and isometric exercises on arm strength among school hockey players. To achieve the purpose of the present study, sixty school level male hockey players from Chennai district, Tamilnadu, India were selected as subjects at random and their ages ranged from 15 to 17 years. The selected subjects are divided in to four groups. Group I acted as yogic practices group, Group II acted as isometric exercises group, Group III acted as combined yogic practices and isometric exercises group and Group IV acted as control group. The experimental groups underwent their respective training for eight weeks duration. The control group was not undergone any training other than their daily routine. Prior to after the experimental period all the players were tested on arm strength. The four groups were statistically analysed by using analysis of covariance (ANCOVA) and scheffe post hoc test at 0.05 level. The isolated experimental groups namely yogic practices and isometric exercises showed significant improvement in arm strength of hockey players than the control group. The results proved that combined effect of yogic practices and isometric exercises significantly contributed for the improvement of arm strength among school male hockey players ($P < 0.05$) than the yogic practices, isometric exercises and control group.

Key Words: Yoga, Isometric, Hockey, Arm Strength.

INTRODUCTION

Yoga is like a blessing for those who love to have fit body. It is extremely beneficial in strength and endurance building. Yoga through its different asana helps in developing a better coordination between different body organs. Apart from providing vigor and activeness, yoga is also helpful in healing the diseases persisting in your body thus leaving you with more

strength and endurance. In recent times there is a growing awareness among the people about the efficacy and utility of yoga in keeping one fit at physical, mental, emotional, social and spiritual planes. These systems are emerging as the effective methods and means to improve the total personality and to build a healthy society. Above all these systems are adopted as a

way of life rather than a mode of treatment (Bharathi, 2005). In hockey the players attempt to place a ball into their opponent's goal using wooden sticks. Historical records show that game was played in various antique civilizations and believed to be an ancient sport. The evidences of 4,000 year old drawings in Beni Hasan tombs, in Nile Valley, Egypt confirmed the sport has been played. The Persians, the Romans, the Ethiopians, as well as the Aztecs were also played their own variation of the game (Dorthy & Landie, 1992). Isometric exercises are a type of strength training in which the joint angle and muscle length do not change during contraction. Isometrics are done in static positions, rather than being dynamic through a range of motion (Thomas, 1994).

METHODOLOGY

The purpose of the present study was to find out the effect of isolated and combined effect of yogic practices and isometric exercises on arm strength among

school hockey players. To achieve the purpose of the present study, sixty school level male hockey players from Chennai district, Tamilnadu, India were selected as subjects at random and their ages ranged from 15 to 17 years. The selected subjects are divided in to four groups. Group I acted as yogic practices group, Group II acted as isometric exercises group, Group III acted as combined yogic practices and isometric exercises group and Group IV acted as control group. The experimental groups underwent their respective training for eight weeks duration. The control group was not undergone any training other than their daily routine. Prior to after the experimental period all the players were tested on arm strength. The four groups were statistically analysed by using analysis of covariance (ANCOVA) and scheffe post hoc test at 0.05 level.

RESULTS AND DISCUSSION

The detailed procedure of analysis of data and interpretation were given below,

TABLE-1

COMPUTATION OF ANALYSIS OF COVARIANCE OF YOGIC PRACTICES, ISOMETRIC EXERCISE AND COMBINED TRAINING ON ARM STRENGTH (IN NUMBERS)

	Yogic Practices Group	Isometric Exercise Group	Combined Group	Control Group	SOV	Sum of Squares	Df	Mean Squares	F
Pre Test Mean	6.73	6.87	6.80	6.73	B	0.18	3	0.06	0.06
SD ±	0.88	0.99	1.01	1.03	W	54.00	56	0.96	
Post Test Mean	7.40	8.00	8.53	6.80	B	25.25	3	8.42	15.85*
SD ±	0.74	0.85	0.64	0.68	W	29.73	56	0.53	
Adjusted Post Test Mean	7.43	7.96	8.52	6.83	B	23.76	3	7.92	27.51*
					W	15.83	55	0.29	

* Significant at 0.05 level of confidence, Required $F_{(0.05), (df 3,56)} = 2.77$; $F_{(0.05), (df 3,55)} = 2.77$

The obtained pre-test F ratio of 0.06 was lesser than the required table F value of 2.77 at 0.05 level. This shows that there was no significant difference in means of the groups at initial stage. The obtained post-test F ratio of 15.85 on post test means was greater than the required table F value of 2.77 at 0.05 level. This shows that there was significant difference in means of the groups on post test scores. Taking into consideration of the pre test means and post test means, adjusted post test means were

determined and analysis of covariance was done. The obtained adjusted post test 'F' value of 27.51 was greater than the required value of 2.77 and hence it was accepted that there was significant differences among the adjusted means on the arm strength of the players.

Since significant improvements were recorded, the results were subjected to post hoc analysis using Scheffe's confidence interval test.

TABLE- II
MULTIPLE COMPARISONS BETWEEN EXPERIMENTAL AND CONTROL GROUPS ON ARM STRENGTH (IN NUMBERS)

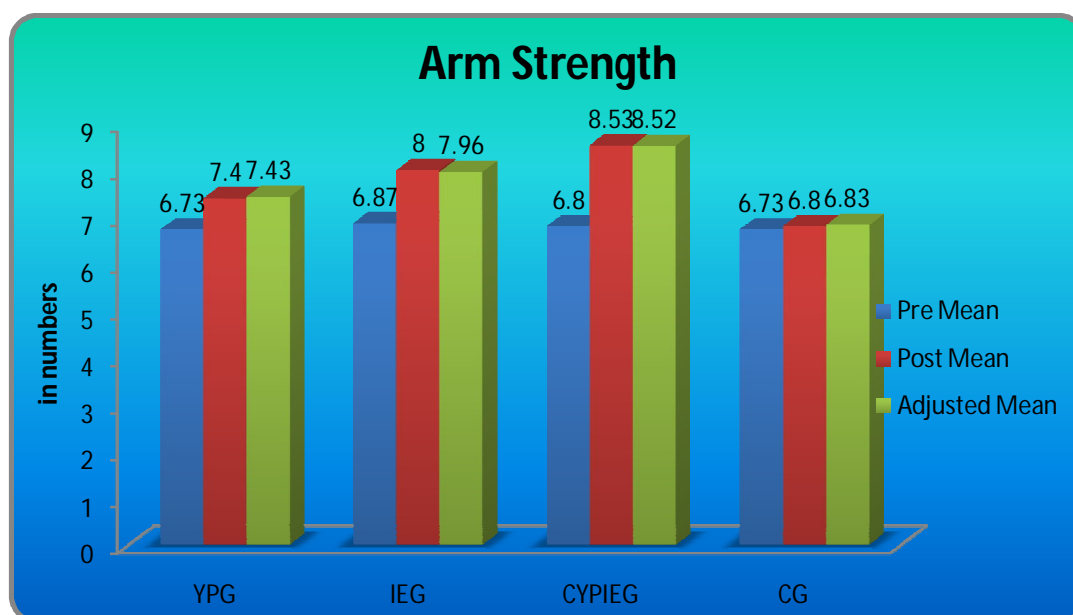
Yogic Practices Group	Isometric Exercise Group	Combined Group	Control Group	MD	C.I
7.43	7.96	---	---	0.53	0.56
7.43	---	8.52	---	1.10*	0.56
7.43	---	---	6.83	0.60*	0.56
---	7.96	8.52	---	0.57*	0.56
---	7.96	---	6.83	1.13*	0.56
---	---	8.52	6.83	1.70*	0.56

* Significant at 0.05 level.

From table II it can be seen that the mean differences between yogic practices group and combined group, yogic practices group and control group, isometric exercises and combined group, isometric exercises and control group and combined group and control group were 1.10, 0.60, 0.57, 1.13 and 1.70 respectively,

were greater than the confidential interval value 0.56, which was significant at 0.05 level of confidence. The mean differences between yogic practices group and isometric exercises 0.53, was lesser than the confidential interval value 0.56 which was insignificant at 0.05 level of confidence.

Figure-I Shows the Mean Values of Experimental and Control Group on Arm Strength among Hockey Players



DISCUSSIONS AND CONCLUSION

The isolated experimental groups namely yogic practices and isometric exercises showed significant improvement in arm strength of school male hockey players than the control group. The results proved that combined effect of yogic practices and isometric exercises significantly contributed for the improvement of arm strength among school hockey players ($P < 0.05$) than the yogic practices, isometric exercises and control group.

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