



Impact of Physical Exercises on Physical Fitness Variables among Hockey Players

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Abstract

The purpose of the study was to investigate the impact of physical exercises on selected physical fitness variables among hockey players. It was hypothesized that there would have been a significant effect of twelve weeks physical exercises on selected physical fitness variables among hockey players. For the present study the subjects were 30 male hockey players from Thanjavur, Tamilnadu were selected as subjects at random and their age ranged from 18 to 25 years. For the present study pre test – post test randomized group design which consists of control group and experimental group was used. The subjects were randomly assigned to two equal groups of fifteen each and named as Group 'A' and Group 'B'. Group 'A' underwent physical exercises and Group 'B' underwent no training. The data was collected before and after twelve weeks of training. The data was analyzed by applying Analysis of Co-Variance (ANCOVA) technique to find out the effect of physical exercises on selected physical fitness variables among hockey players. The level of significance was set at 0.05. Significant effect of physical exercises training was found on speed, agility and muscular strength.

Keywords: Physical Exercises, Speed, Agility, Muscular Strength, Hockey.

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Introduction

Physical training is any bodily activity that enhances or maintains physical fitness and overall health. Physical fitness is the functioning of the heart, blood vessels, lungs, and muscles to function at optimum efficiency. In previous years, fitness was defined as the capacity to carry out the day's activities without undue fatigue. It is performed for many different reasons. These include: strengthening muscles and the cardiovascular system, honing athletic skills, and weight loss or maintenance. Frequent and regular physical exercise boosts the immune system, and helps prevent diseases. A moderate to high level of fitness reduces the incidence of "hypo kinetic" diseases. Hypo kinetic basically means a lack of movement or too little movement. When the body doesn't move enough, it slowly deteriorates and becomes vulnerable to disease. In essence, a sedentary lifestyle can contribute to or increase the severity of such problems as hypertension (high blood pressure), obesity (excess fat), adult-onset diabetes, osteoporosis (brittle bones), depression, and low back pain. Individuals who are poorly fit often end up with one or more of these conditions, which impairs the individual's quality of life. Today, there is a growing emphasis on looking good, feeling good and living longer. Increasingly, scientific evidence tells us that one of the keys to achieving these

ideals is fitness and exercise.

Methodology

The purpose of the study was to investigate the impact of physical exercises on selected physical fitness variables among hockey players. It was hypothesized that there would have been a significant effect of twelve weeks physical exercises on selected physical fitness variables among hockey players. For the present study the subjects were 30 male hockey players from Thanjavur, Tamilnadu were selected as subjects at random and their age ranged from 18 to 25 years. For the present study pre test – post test randomized group design which consists of control group and experimental group was used. The subjects were randomly assigned to two equal groups of fifteen each and named as Group 'A' and Group 'B'. Group 'A' underwent physical exercises and Group 'B' underwent no training. The data was collected before and after twelve weeks of training. The data was analyzed by applying Analysis of Co-Variance (ANCOVA) technique to find out the effect of physical exercises on selected physical fitness variables among hockey players. The level of significance was set at 0.05.

Results

The findings pertaining to analysis of co-variance between experimental group and control group on selected physical fitness variables among hockey players for pre-post test respectively have been presented in table I to III.

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Table I. ANCOVA between Experimental Group and Control Group on Speed of Hockey Players for Pre, Post and Adjusted Test

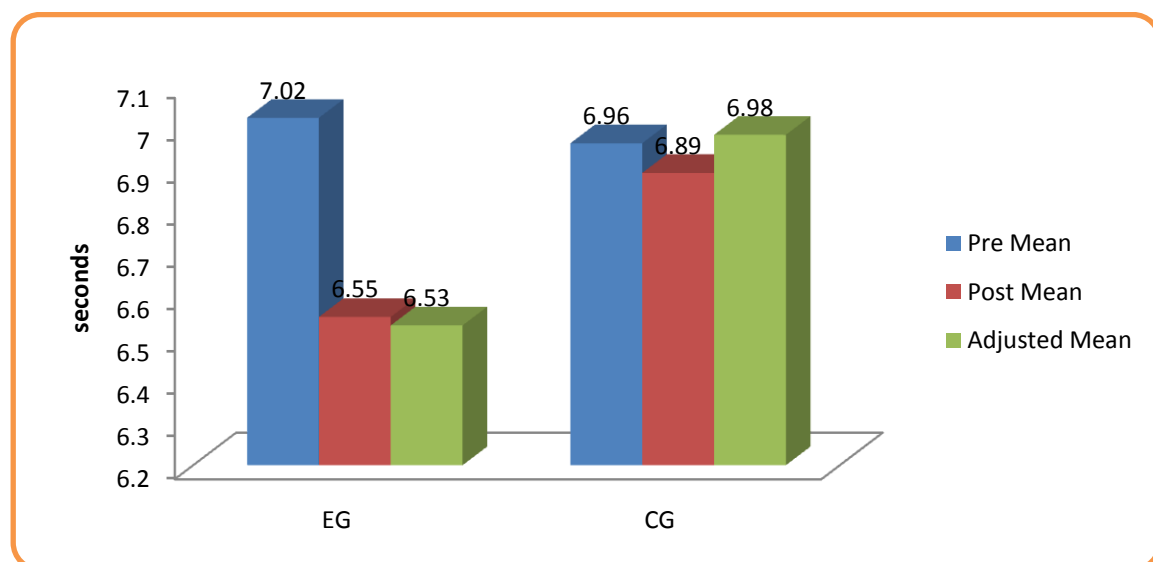
	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F
Pre Test Mean	7.02	6.96	BG	0.12	1	0.12	0.73
			WG	4.62	28	0.16	
Post Test Mean	6.55	6.89	BG	1.28	1	1.28	11.11*
			WG	3.22	28	0.11	
Adjusted Post Mean	6.53	6.98	BG	1.45	1	1.45	13.45*
			WG	2.92	27	0.10	

** Significant at 0.05 level.

df: 1/27= 4.21

Table I revealed that the obtained 'F' value of 13.45 was found to be significant at 0.05 level with df 1, 27 as the tabulated value of 4.21 required to be significant at 0.05 level. The same table indicated that

there was a significant difference in adjusted means of speed of hockey players between experimental group and control group. The graphical representation of data has been presented in figure I.

Figure I. Comparisons of Pre – Test Means Post – Test Means and Adjusted Post – Test Means for Control group and Experimental Group in relation to Speed**Table II.** ANCOVA between Experimental Group and Control Group on agility of Hockey Players for Pre, Post and Adjusted Test

	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F
Pre Test Mean	11.18	11.17	BG	0.01	1	0.01	0.03
			WG	0.28	28	0.01	
Post Test Mean	10.81	11.10	BG	0.98	1	0.98	62.63*
			WG	0.43	28	0.01	
Adjusted Post Mean	10.81	11.09	BG	0.98	1	0.98	61.57*
			WG	0.43	27	0.01	

** Significant at 0.05 level.

df: 1/27= 4.21

Table II revealed that the obtained 'F' value of 61.57 was found to be significant at 0.05 level with df 1, 27 as the tabulated value of 4.21 required to be significant at 0.05 level. The same table indicated that

there was a significant difference in adjusted means of agility of hockey players between experimental group and control group. The graphical representation of data has been presented in figure II.

Figure II. Comparisons of Pre – Test Means Post – Test Means and Adjusted Post – Test Means for Control group and Experimental Group in relation to Agility

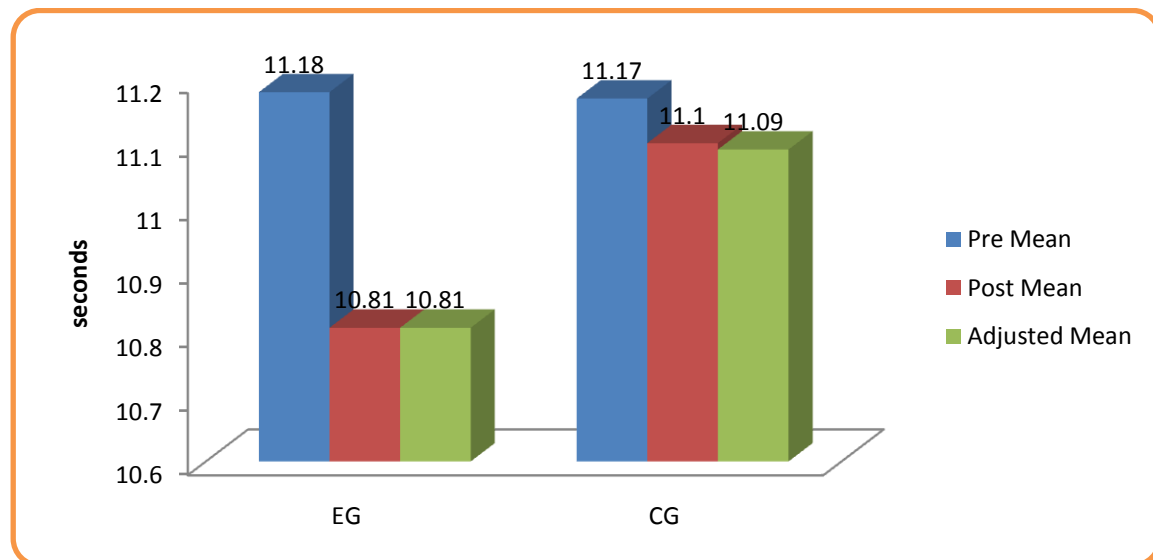


Table III. ANCOVA between Experimental Group and Control Group on Muscular Strength of Hockey Players for Pre, Post and Adjusted Test

	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F
Pre Test Mean	29.66	30.66	BG	7.50	1	7.50	0.84
			WG	248.66	28	8.88	
Post Test Mean	37.46	31.20	BG	294.53	1	294.53	34.63*
			WG	238.13	28	8.50	
Adjusted Post Mean	37.65	31.01	BG	320.79	1	320.79	42.49*
			WG	203.84	27	7.55	

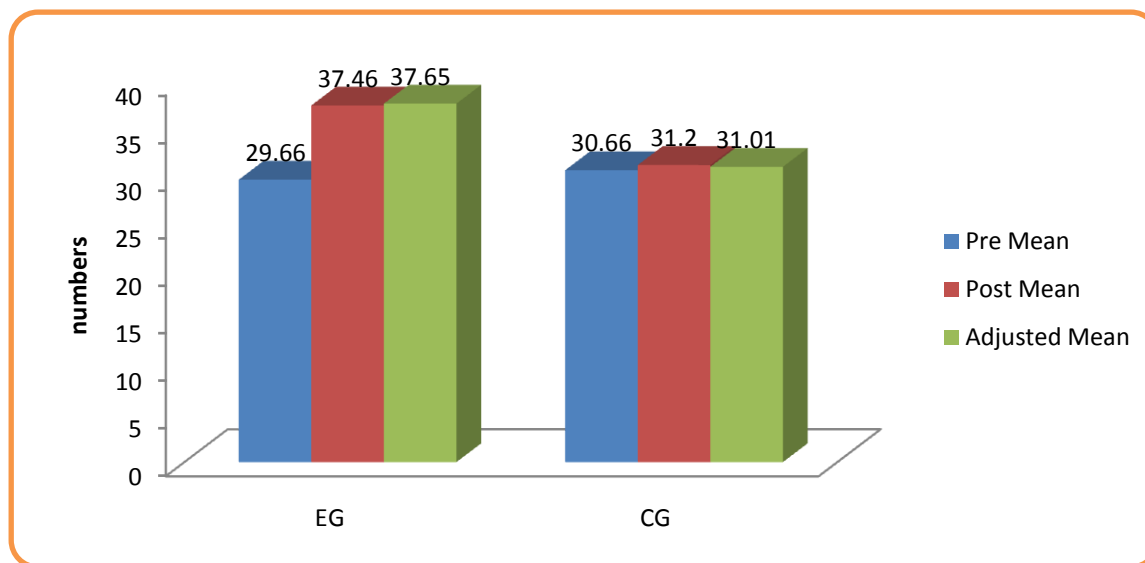
** Significant at 0.05 level.

d/f: 1/27= 4.21

Table III revealed that the obtained 'F' value of 42.49 was found to be significant at 0.05 level with df 1, 27 as the tabulated value of 4.21 required to be significant at 0.05 level. The same table indicated that

there was a significant difference in adjusted means of muscular strength of hockey players between experimental group and control group. The graphical representation of data has been presented in figure III.

Figure III. Comparisons of Pre – Test Means Post – Test Means and Adjusted Post – Test Means for Control group and Experimental Group in relation to muscular strength



In case of physical fitness variables i.e. speed, agility and muscular strength the results between pre and post (12 weeks) test has been found significantly higher in experimental group in comparison to control group. This is possible because still they are under process of physical and physiological growth and development which directly contribute to enhancement in their speed, agility and muscular strength and due to regular training programme of physical exercises which may also bring sudden spurt in physical fitness variables in hockey players. The findings of the present study have strongly indicates that physical exercises training of twelve weeks have significant effect on selected physical fitness variables i.e., speed, agility and muscular strength of hockey players. Hence the hypothesis earlier set that physical exercises would have been significant effect on selected physical fitness variables in light of the same the hypothesis was accepted.

Conclusions

On the basis of findings and within the limitations of the study the following conclusions were drawn: Significant effect of physical exercises training was found on speed, agility and muscular strength.

References

1. Barrow, M. H., McGhee, R. (1979). *A practical approach to measurement in physical education*. Philadelphia: Lea and Febiger, Edition-3rd.
2. Bucher, C. A. (n.d.). *Foundation of physical education and sports*. Publisher Mc Graw-Hill, 13th Edition.
3. Karfs, C. E., Aruheim, D. D. (1969). *Modern principles of athletes training*. St. Louis's Mosby Company.
4. Mohan, R. (2003). *Research methods in education*. New Delhi: Neelkamal Publications Pvt. Ltd.
5. Neilson, N. P., Johnson, C. R. (1970). *Measurement and statistics in physical education*. Belmont California: Warsworth Publishing Company Inc.,
6. Singh, H. (1993). *Science of sports training*. New Delhi: D.V.S. Publications.
7. Srivastva, G. (1994). *Advanced research methodology*. New Delhi: Radha Publications.
8. Wvest, A. D., Bucher, A. C. (1995). *Foundation of physical education and sports*. U.S.A: McGraw-Hill companies, Inc. Edition-13.
9. Jayaveerapandian, V. (2000). A Study on Outcome between Physical Exercises and Yogic Exercises on Selected Physical Physiological Variables during off-season among the Sports Participants. Unpublished Doctoral Thesis. Bharathidasan University.
10. Chinnasamy, (1992). Effect of Asana and physical Exercises on selected physiological and Bio – Chemical variables, Unpublished, Masters Dissertation, Alagappa University, Karaikudi.