



INDUCED CHANGES IN 12-WEEK GAME-SPECIFIC TRAINING AND YOGIC PRACTICES ON SELECTED PHYSIOLOGIC AND HEMATOLOGICAL VARIABLES AMONG YOUNG FIELD HOCKEY PLAYERS

K. Megarasan* & Dr. A. Palanisamy**

* Ph.D Research Scholar, Department of Physical Education and Yoga, Bharthidasan University,
Tiruchirappalli, Tamil Nadu, India

** Professor & Head, Department of Physical Education and Yoga, Bharthidasan University, Tiruchirappalli,
Tamil Nadu, India

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Abstract:

The purpose of the study was to find out induced changes in 12-week game-specific training and yogic practices on selected physiologic and hematological variables among young field hockey players. The study was conformed to 45 hockey players were selected randomly as subjects, from Selvam Educational Institutions, Namakkal, Tamil Nadu, India. Their age ranged between 18 to 25 years. They were divided into three equal groups each group consisted of 15 players. Namely Experimental Group - I Game-Specific Training, Experimental Group - II Yogic Practices and Group - III control group. They were tested twice before and after the training with respect physiological and hematological variables so as of resting heart rate, systolic blood pressure and diastolic blood pressure. The training period for this study was three alternative days per week, for 12 weeks. The data collected from the subjects were analyzed with descriptive statistics and paired sample 't' test and the significance difference on experimental groups with the level of confidence was fixed as 0.05 level. It was concluded that both the experimental groups were having more significant improvement on resting heart rate, systolic blood pressure and diastolic blood pressure than the control group.

Key Words: Game-Specific Training, Yogic Practices, Resting Heart Rate, Systolic Blood Pressure and Diastolic Blood Pressure.

Introduction:

Field hockey is a sport with unique demands that requires players to possess a combination of physical attributes like agility, speed, strength, and endurance and specific skills like dribbling, passing, and shooting accurately. To achieve a high level of performance in this sport, players must engage in a specific training program that improves their fitness level and skills while minimizing the risk of injury¹. Players need to have the ability to move quickly, have strength to tackle opponents, and agility to avoid defenders. Therefore, it is essential to understand the importance of these attributes for field hockey players and their performance. Hockey game specific training emphasizes compound exercises that engage multiple muscle groups, functional movements that mirror on field action, and exercises that improve core strength. Enhanced strength empowers players to exhibit more powerful shots, execute decisive tackles, and maintain an advantage in physical contests. Regular exercise programs usually consist of cardiovascular training, weight training, and exercises. Although regular exercise programs can improve the overall Fitness of field hockey players, they may not necessarily be sufficient to address the specific needs required for playing hockey. Yogic practices and Physical Exercises lay an important role in the development of the balance created in the nervous and endocrine systems which directly influences all the other systems and organs of the body, Yoga acts both as curative and preventive therapy. The very essence of yoga lies in attaining mental peace, improved concentration powers, a relaxed state of living and harmony in relationships. Swami Vivekananda proclaimed each soul is potentially divine.

Aim:

The purpose of this study is to compare the effect of a regular training program with a hockey game specific training program on collegiate hockey players' resting heart rate; systolic blood pressure and diastolic blood pressure.

Materials and Methodology:

The study was conformed to 45 hockey players were selected randomly as subjects, from Selvam Educational Institutions, Namakkal, Tamil Nadu, India. Their age ranged between 18 to 25 years. They were divided into three equal groups each group consisted of 15 players. Namely Experimental Group - I Game-Specific Training, Experimental Group - II Yogic Practices and Group - III control group. They were tested twice before and after the training with respect physiological and hematological variables so as of resting heart rate, systolic blood pressure and diastolic blood pressure. The training period for this study was three alternative days per week, for 12 weeks.

Training Programme:

During the training period the experimental groups underwent their respective training programme in addition to their daily regular activities as per the schedule. Experimental groups underwent their respective experimental training on six days per week for twelve weeks. The experimental training programmes were designed based on the pilot study results and resources collected from books, periodicals, e-materials and discussions with the experts. The duration of experimental training were planned for 90 minutes. The subjects reported for experimental training between 7.00 am and 8.30 am. All the subjects involved in this study were carefully monitored throughout the training programme and attained 90% of attendance.

Table 1: General Structure of Training Programmes

Groups With Training Particulars	Training
Group I	Game Specific Training
Group II	Yogic Practices
Group III	Control Group

Measurement Protocol:

Selected fitness variables were tested two times with an interval of 12-weeks. The first testing was carried out in the first micro-cycle of preparatory phase two (PP-2). To avoid the diurnal effects, the tests conducted during pre and post testing were scheduled at the same time of the day (± 60 minutes). Subjects were explained and demonstrated the exact procedure of each test and proper time was given for warm up. Optimal recovery time was given between the tests to avoid the effects of fatigue on the test performance. Before each testing, subjects were instructed to not to use caffeinated drinks before 4 hours, not to undergo rigorous physical training for 12 hours, to avoid heavy food before testing, to sleep for 08 hours and to maintain optimal hydration level during testing.

Statistical Tools:

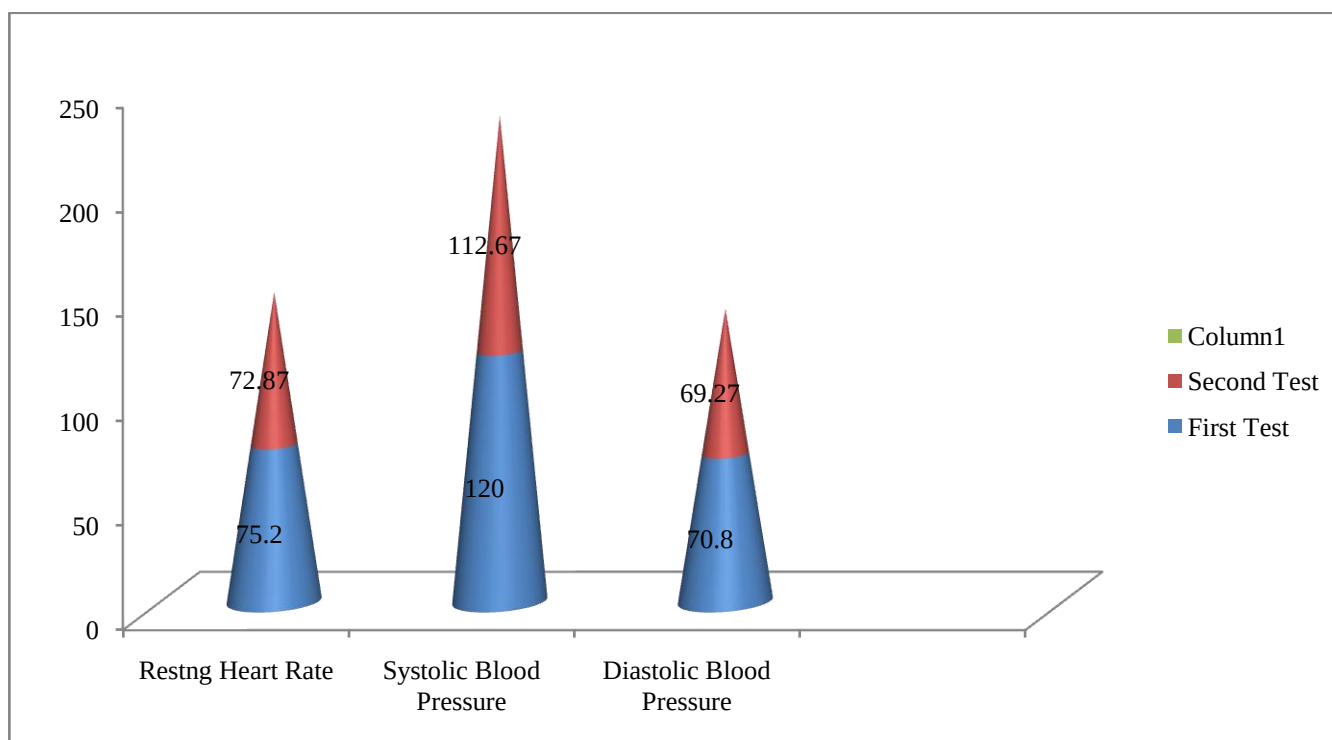
Descriptive statistical tests Mean and Standard Deviation were calculated and paired t-test was applied to determine effects of 12-week training on selected physical fitness variables. The level of significance was set at 0.05 and data were analysed using Statistical Package for Social Sciences (IBM SPSS) version 23.

Results and Discussion:

Mean and standard deviation values of first and second testing of resting heart rate; systolic blood pressure and diastolic blood pressure; and their mean difference has been presented in table 3, 4 & 5.

Table 2: Mean, SD and Mean Difference of First and Second Testing for Game Specific Training Group

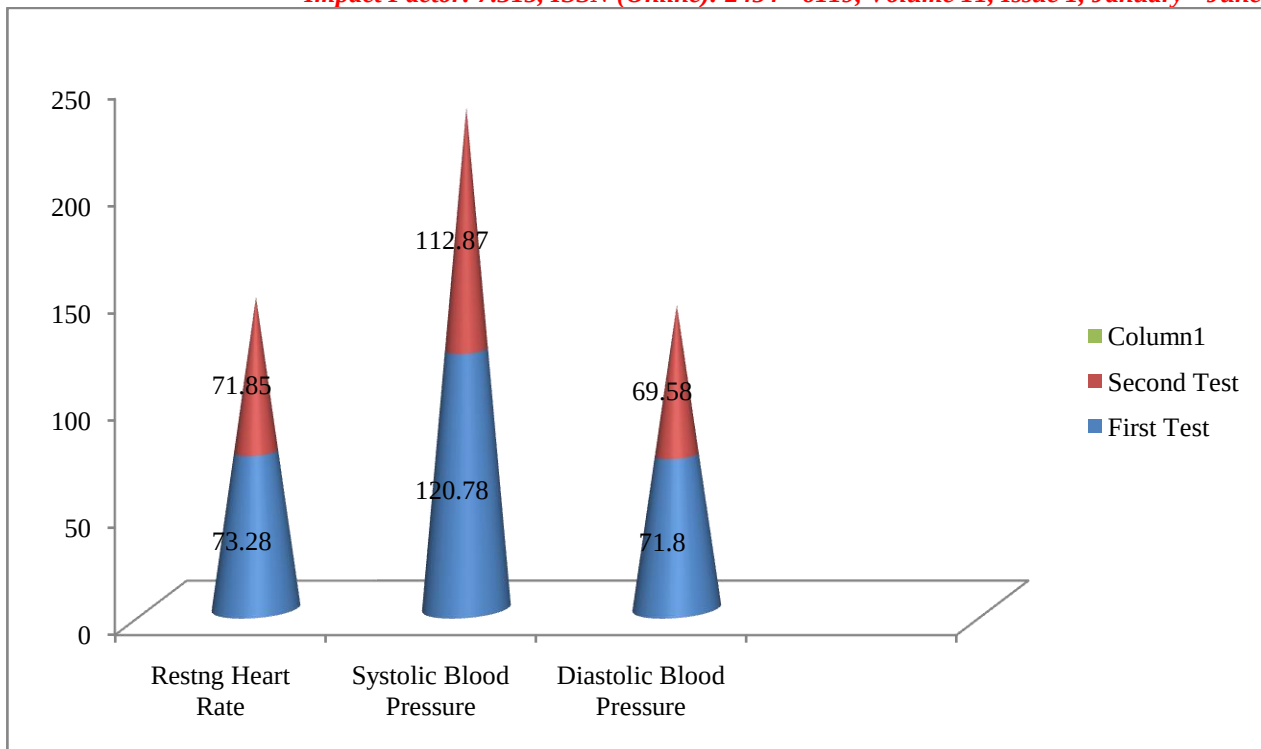
Variable	N	First Testing	Second Testing	Mean Difference
		Mean $\pm$ SD	Mean $\pm$ SD	
Resting Heart Rate	15	75.20 $\pm$ 1.67	72.87 $\pm$ 1.87	2.33
Systolic Blood Pressure	15	120.00 $\pm$ 1.32	112.67 $\pm$ 1.30	7.3
Diastolic Blood Pressure	15	70.80 $\pm$ 12.50	69.27 $\pm$ 6.96	1.53



Mean differences among variables shows difference in results of first and second testing. It indicates positive effect of 12-week specific training group. However, to assess whether these changes were statistically significant or not 't' values were calculated. Table 2 shows the paired differences of mean, SD and 't' values of selected physiologic and hematological variables. The 't' values of change of mean direction resting heart rate, systolic blood pressure and diastolic blood pressure were 2.33, 7.3 and 1.53 respectively.

Table 3: Mean, SD and Mean Difference of First and Second Testing for Yogic Practices Group

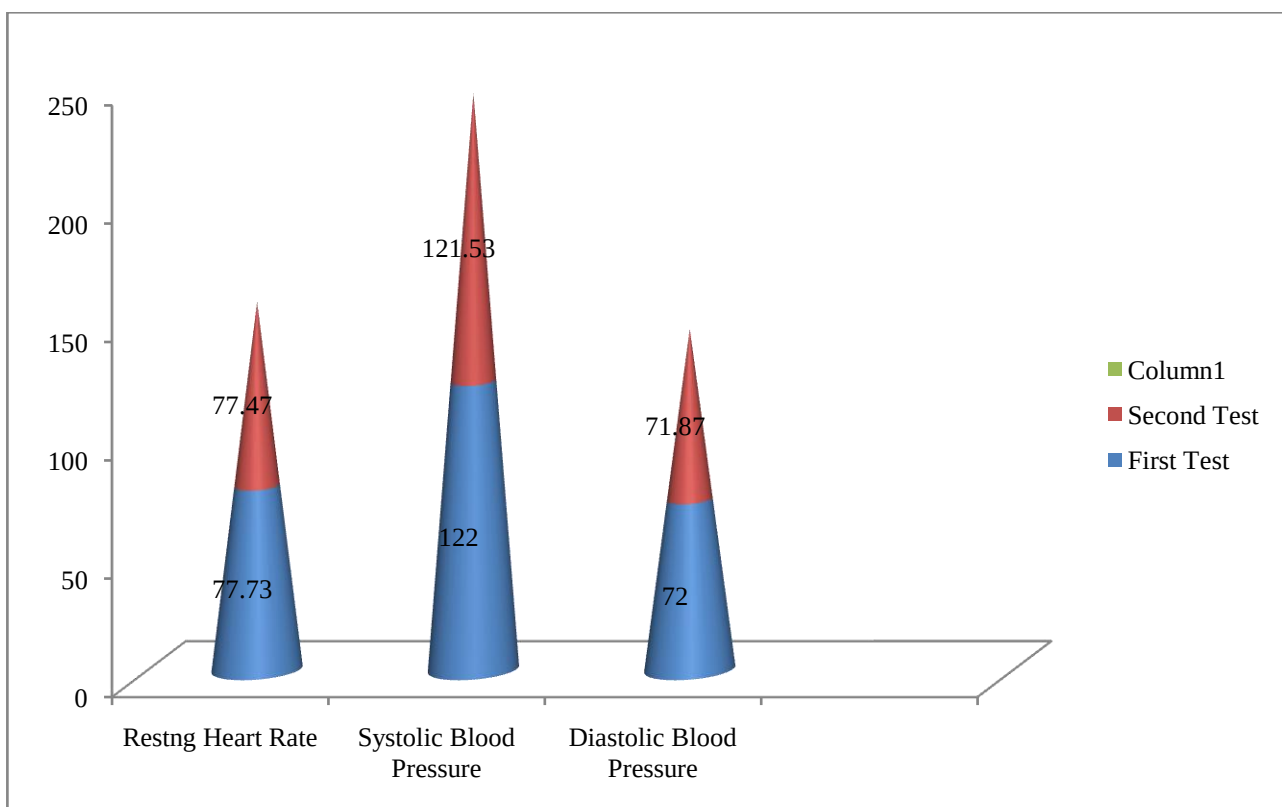
Variable	N	First Testing	Second Testing	Mean Difference
		Mean $\pm$ SD	Mean $\pm$ SD	
Resting Heart Rate	15	73.28 $\pm$ 1.37	71.85 $\pm$ 1.81	1.43
Systolic Blood Pressure	15	120.78 $\pm$ 1.30	112.87 $\pm$ 1.30	7.91
Diastolic Blood Pressure	15	71.80 $\pm$ 12.10	69.58 $\pm$ 6.40	2.22



Mean differences among variables shows difference in results of first and second testing. It indicates positive effect of 12-week yogic practices group. However, to assess whether these changes were statistically significant or not 't' values were calculated. Table 3 shows the paired differences of mean, SD and 't' values of selected physiologic and hematological variables. The 't' values of change of mean direction resting heart rate, systolic blood pressure and diastolic blood pressure were 1.43, 7.91 and 2.22 respectively.

Table 4: Mean, SD and Mean Difference of First and Second Testing for Control Group

Variable	N	First Testing	Second Testing	Mean Difference
		Mean $\pm$ SD	Mean $\pm$ SD	
Resting Heart Rate	15	77.73 $\pm$ 1.57	77.47 $\pm$ 1.80	0.26
Systolic Blood Pressure	15	122.00 $\pm$ 1.38	121.53 $\pm$ 1.30	0.47
Diastolic Blood Pressure	15	72.00 $\pm$ 11.10	71.87 $\pm$ 6.27	0.73



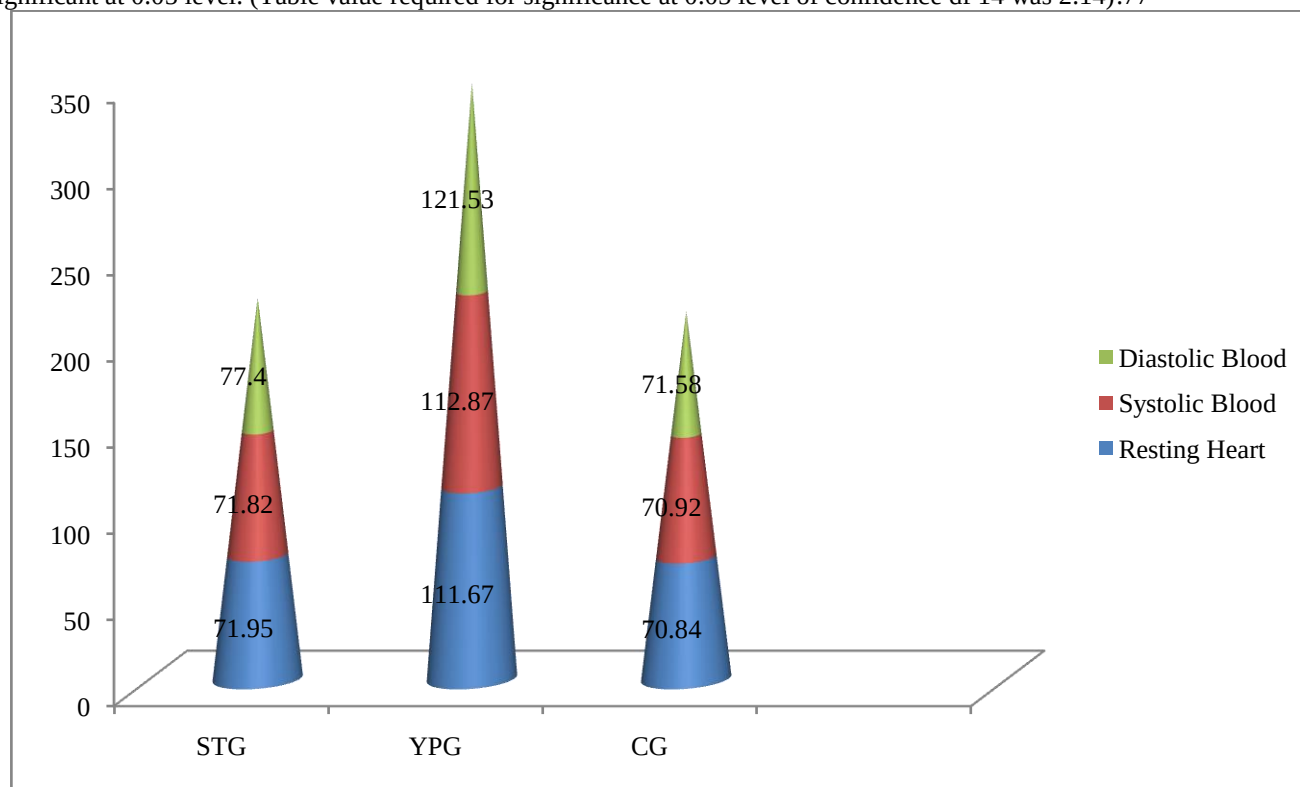
Mean differences among variables shows difference in results of first and second testing. It indicates positive effect of 12-week control group. However, to assess whether these changes were statistically significant or not 't' values were calculated.

Table 4 shows the paired differences of mean, SD and 't' values of selected physiologic and hematological variables. The 't' values of change of mean direction resting heart rate, systolic blood pressure and diastolic blood pressure were 0.26, 0.47 and 0.73 respectively.

Table 5: Paired differences of Mean, SD and 't' values of selected variables

Variables	Specific Training Group			Yogic Practices Group			Control Group		
	Mean	SD	't' Value	Mean	SD	't' Value	Mean	SD	't' Value
Resting Heart Rate	71.95	2.13	3.78*	71.82	2.23	4.06*	77.40	0.59	1.74
Systolic Blood Pressure	111.67	4.90	5.70*	112.87	3.85	4.28*	121.53	1.51	1.2
Diastolic Blood Pressure	70.84	3.78	2.46*	70.92	3.28	2.14*	71.58	2.71	0.7

* Significant at 0.05 level. (Table value required for significance at 0.05 level of confidence df 14 was 2.14).77



Conclusion:

Field hockey players require a training program that is tailored to the specific demands of their sport. Hockey game specific training and yogic practices programs are designed to improve the specific skills that are necessary for playing hockey, such as resting heart rate, systolic blood pressure and diastolic blood pressure and have been shown to be more effective in improving hockey game specific skills than regular exercise programs that are more generalized. For field hockey players looking to improve their on field performance, a hockey game specific training program may be the best solution.

References:

1. Anders E, Myers S. Field Hockey-Steps to Success. 2nd ed. Human Kinetics, 2008.
2. Maughan R J, Gleeson M. The Biochemical Basis of Sports Performance. Oxford University Press, 2010.
3. Lythe J. The physical demands of elite men's field hockey and the effects of differing substitution methods on the physical and technical outputs of strikers during match play, 2008.
4. K Azmi. Effect of Exercise Program Speed, Agility, and Quickness Improving Speed, Agility, and Acceleration. J Phys Conf Ser 2018; 947:012043.7.
5. Gray S. Effect of active warm-up on metabolism before and during intense dynamic exercise. Med Sci Sports Exerc 2002; 34: 2091-20968.
6. Sharma HB, Kailashiya J. Effects of 6-Week Sprint-Strength and Agility Training on Body Composition, Cardiovascular, and Physiological Parameters of Male Field Hockey Players. J Strength Cond Res 2018; 32(4):894-901