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Effect of SAQ Training and Circuit Training on Resting Pulse Rate among Hockey Men Players

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Abstract – The present study was undertaken to analyze the effect of speed agility and quickness [SAQ] training and circuit training on resting pulse rate among hockey players. The investigator has selected N=36 men inter collegiate level/state level participated hockey players at random from various college of Guntur district of Andhra Pradesh .Their age ranged from 18-25 years. The hockey players chosen for the study were divided into three equal groups n=12 and designated as experimental group 'A' experimental group 'B' and control group 'C'. SAQ training were given to group 'A' Circuit training were given to group 'B' and the 'CG' control group 'C' were restricted to participate in any activities. The trainings were given for a period of twelve weeks. The data were collected before and after the training by conducting Manual method (radial of the wrist) test. The obtained data's were analyzed by Analysis of Covariance (ANCOVA). The level of significant was fixed at 0.05 levels. The results of the study showed that SAQ training and circuit training significantly reduce resting pulse rate number of the hockey players when comparison with control group. Circuit training group hockey players shown better in reduction of number of resting pulse rate when comparison with SAQ training group hockey players.

Keywords: – SAQ Training, Circuit Training – Muscular Endurance.

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INTRODUCTION

Speed agility and quickness training exercises come under anaerobic exercises involve exertion for short periods followed by periods of rest. It uses the muscles at high intensity and a high rate of work for short period. Body obtains energy by burning glycogen stored in the muscles without oxygen hence it is called anaerobic exercise. Burning glycogen without oxygen liberates lactic acid. Circuit training exercises comes under aerobic exercises involving activities with lower intensity, which is performed for longer period. The energy is obtained by utilizing nutrients in the presence of oxygen and hence it is called aerobic exercise.

Normal heart is 72 per minute. It ranges between 60 and 80 per minutes. Heart rate is maintained within normal ranged constantly it is subjected for variation during normal physiology condition such as exercise, emotion, etc, However under physiology condition, the altered heart rate is quickly brought back to normal. It is because of the perfectly tuned regulatory mechanism in the body. Heart rate is regulated by the nervous mechanism which consists of three components vasomotor center, motor (efferent) nerve fibers to the heart and sensory (afferent) nerve fiber from the heart. Regular exercises cause reduction in resting heart rate and positively related with cardiovascular endurance development (Anee et al., 2018).

STATEMENT OF THE PROBLEM:

The purpose of the study was to investigate the "Effect of SAQ training and circuit training on resting pulse rate among men hockey players.

OBJECTIVE OF THE STUDY

1. To measure the influence of speed agility and quickness [SAQ] training treatment on the resting pulse rate of hockey players.
2. To evaluate the impact of circuit training treatment on the resting pulse rate of hockey players.
3. To understand the changes between speed agility quickness [SAQ] training and circuit training on resting pulse rate.

HYPOTHESIS:

- It was hypothesis that there will be a significant reduction in resting pulse rate after the twelve weeks of training in SAQ training group hockey player and circuit training group hockey players when compared with control group hockey players.

- It was hypothesis that circuit training group hockey players will be superior to the SAQ training group hockey player in reduction of resting pulse rate.

METHODOLOGY:

The purpose of this study was to find out the effect of SAQ training and circuit training on resting pulse rate among hockey men players. To achieve the purpose of this study investigator has selected N=36 men inter collegiate level and state level participate hockey players at random from various college of Guntur district of Andhra Pradesh .Their age ranged from 18-25 years. The subjects chosen for study was divided into three groups each groups consisted of twelve hockey players and designated as experimental group 'A' experimental group 'B' and control group 'C'. Speed agility and quickness [SAQ] training were given to group 'A' circuit training were given to group 'B' and control group 'C' was restricted to participate in any of the training programme other than their regular activities.

Training was given three days in a week for twelve weeks to SAQTG and CTG hockey players. The subject were tested on resting pulse rate at the beginning (Pre-test) and at the end of the experimental period (Post-test). To measure the resting pulse rate Manual method (radial of the wrist) test were used respectively because of their simplicity and availability of necessary facilities, instrument and equipment's. The analysis of data on resting pulse rate had been examine by ANCOVA in order to determine the differences if any among the group at pre and posttest.

Table – I

Analysis of Covariance for resting pulse rate on Pre Test and Post Test Data of Experimental groups and Control Groups hockey players (In Numbers)

Tests	SAQTG	CTG	CONG	Source of variance	Sum of Squares	df	Mean Squares	'F' Ratio
Pre Test Mean	62.41	63.08	63.91	B	13.55	2	6.77	1.54
SD	1.83	2.23	2.19	W	144.75	33	4.38	
Post Test Mean	61.25	57.58	66.08	B	436.22	2	218.11	71.91*
SD	1.91	1.24	1.97	W	100.08	33	3.03	
Adjusted Post Test Mean	61.56	57.60	65.74	B	386.82	2	193.41	84.42*
				W	73.31	32	2.29	

**Significant at 0.05 level of confidence*

(Required table value at 0.05 level of significant with df 2 and 33 is 3.29and df 2 and 32 is 3.30)

The above table-I shows that there is a significant difference on resting pulse among the three groups such as speed agility and quickness group (SAQTG), circuit training group (CTG) and control group (CONG). Since the calculated 'F' value required being significant at 0.05 level for 2, 33 d/f and 2, 32 are 3.29 and 3.30, but the calculated values of resting pulse rate post and adjusted posttest 'F' values are 7.91 and 84.42 respectively. Which are higher than the tabulated value. Since the obtained 'F' ratio is found significant.

Table – II

The Scheffes Test for the Mean Differences Between Paired Mean of Groups on resting pulse rate

Mean Values			Mean difference	CI
SAQTG	CTG	CONG		
61.56	57.60	-	**3.96***	**0.91**
61.56	-	65.74	**4.18***	
-	57.60	65.74	**8.14***	

**Significant at 0.05 level of confidence*

The above table II shows that the adjusted post-test mean differences values between speed agility and quickness [SAQ] training group and circuit training group (CTG), Speed agility and quickness [SAQ] training group and control group (CONG), circuit training group (CTG) and control group (CG), were 3.96, 4.18 and 8.14 respectively on resting pulse rate, which were greater than the required confidence interval value 0.91 at 0.05 level of confidence. It was concluded from the above table that the two experimental groups were found to be significant when compared with control group.

The graphical illustration of the pre-test, post-test and adjusted post-test mean values of the experimental groups and control group on resting pulse rate were presented in figure 1.

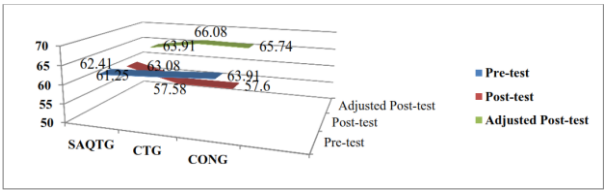

Figure 1: Graphical Illustration Showing the Pre-Test Post-Test and Adjusted Post-Test Mean Values on resting pulse rate

DISCUSSION ON HYPOTHESIS:

- In the first hypothesis it was stated that SAQ training and circuit training will

significantly reduce resting pulse rate of hockey players when comparison with control group. The result of the study found that experimental groups hockey players resting pulse rate level number reduce when compared with control group. Hence the research hypothesis is accepted.

- In second hypothesis mention that circuit training group hockey player will be superior to the SAQ training groups in reduction of resting pulse rate. The study found that CTG hockey players given best performance in reduction of resting pulse rate number when comparison with SAQ training group hockey players. Hence research hypothesis accepted.

DISCUSSION AND FINDINGS:

The study found that radial artery resting pulse rate number of hockey players reduce with the treatment of speed agility and quickness [SAQ] training and circuit training. The list of studies referred related to resting pulses rate were Kuljinder and Nishan (2015) found that after SAQ drill the experimental group hockey players has significant progressive improvement on resting pulse rate. Gurvir and Baljeet (2017) study suggested that speed agility and quickness [SAQ] drill exercises program is an effective method to reduce the resting pulse rate of the hockey players. Sandip and Gopa (2013) study suggested that the intensive training and extensive training had a positive effect to reduce the resting pulse rate of the women. David and Paul (2013) result indicated 12-weeks of isolated and combined training of weight and plyometric training significantly reduce the resting pulse rate of college men.

CONCLUSIONS:

The result of this study concluded that circuit training group hockey players [CTG] were better in reduction of resting pulse rate number when compared with speed agility and quickness [SAQ] training group hockey players.

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