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RELATIVE EFFECT OF SAQ VERSUS SPRINT INTERVAL TRAININGS ON SPEED OF MALE SPRINTERS

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ABSTRACT :

The purpose of the study was to investigate the relative effect of SAQ training verses sprint interval training on speed of mala sprinters. To achieve the purpose of the study, forty five male inter-collegiate level sprinters from various colleges affiliated to Bharathidhasan University, Trichy, Tamilnadu, India were selected as subjects. The sprinters who represented inter collegiate level competitions are only selected as subjects. Their age ranged from 18 years to 23 years. The selected subjects were randomly assigned into three equal groups of 15 subjects each. Group-I underwent SAQ training, group-II underwent sprint interval training and group-III acted as control. The research design of the study was pre and post test random group design. So as to invalidate the underlying mean contrasts the information gathered from the three gatherings preceding and post experimentation on speed was measurably investigated to discover the huge distinction assuming any, by applying the examination of covariance (ANCOVA). Since, three gatherings are included, at whatever point the acquired 'F' proportion an incentive in the balanced post test mean was observed to be noteworthy, the Scheffe's test was connected as post hoc test to decide the matched mean contrasts, assuming any. The result of the study reveals that due to the effect of SAQ training and sprint interval training the speed of the subjects was significantly improved. It was also concluded that sprint interval training is significantly better than SAQ training in improving the speed of male sprinters.

KEYWORDS : *SAQ training, Sprint interval training, Speed and Male sprinters.*

INTRODUCTION

Humans have consistently strived to run faster, jump higher, throw farther and exhibit greater strength, endurance and skill. We are naturally competitive and ambitious for excellence in athletic performance. As a result of practical experience, observation and much scientific experimentation, old methods of training though fascinating and rich in tradition have been discarded and replaced by new methods based on insight and understanding. For centuries this evolution towards better methods of training was slow, but in recent years dramatic changes that have taken place and produced astounding results in performance.

Many elite athletes attribute their success to interval training with the spacing of exercise and rest periods, a tremendous amount of work can be accomplished that would not normally be completed in a

workout in which the exercise was performed continuously. Rehashed practice sessions can shift from a couple of moments to a few minutes or all the more relying upon the ideal result. The interval training prescription can be modified in terms of intensity and duration of the exercise interval, the length and the type of relief interval, the number of work intervals and the number of repetitions and sets per workout. Adjustment of any or all of these can easily be made to the specific requirement for different performance. One value of interval training is that it permits high intensity and intermittent exercise for a relatively long period (McArdle, Katch & Katch, 1985).

Acceleration, speed, and agility have been found to be independent, unrelated qualities that produce a limited transfer to each other. One of the most popular training methods that produce the mentioned results is the SAQ (*Speed, Agility & Quickness*) method. A study that has investigated this problem leads to the conclusion that programmed conditioning enhances power performance to a greater extent. However, random conditioning is not rejected, yet it comes as an advisable addition to programmed conditioning. That kind of conditioning uses randomized intermittent patterns seen in match performance. Both types follow the basic principles of conditioning and thus deliberately produce effects that can be in some way planned. The downside of random conditioning is that it has the inability to achieve the desired level of volume and intensity depending on motivation and effort, but on the other hand, the use of open skills produces specific demands that are used in a real match. The authors found that programmed conditioning is more preferred when it comes to speed and agility.

Effective conditioning programmes for sprinters can be effectively developed by coaches and trainers. SAQ training and sprint interval training are well-proven training methods and vital necessary for sprinters but most of the sprinters are not concentrating on these training and its importance. In order to assess the training impact on speed among male sprinters, the investigator selected SAQ training and sprint interval training as the independent variable. Information related to the impact of SAQ training and sprint interval training among sprinters is scanty. So the present study is planned.

METHODOLOGY

Selection of Subject and Variable

To achieve the purpose of the study, forty five male inter-collegiate level sprinters from various colleges affiliated to Bharathidhasan University, Tricky, Tamilnadu, India were selected as subjects. The sprinters who represented inter collegiate level competitions are only selected as subjects. Their age ran from 18 years to 23 years.. The chose subjects were haphazardly allotted into three equivalent gatherings of 15 subjects each. Group-I underwent SAQ training, group-II underwent sprint interval training and group-III acted as control. The selected dependent variable speed was assessed by conducting 50 meters run test.

Training Programme

After the initial measurements, the specially designed training programme was given to the subjects of the experimental groups named as SAQ (*Speed, Speed & Quickness*) and sprint interval training. The training sessions were conducted three days a week (*Monday, Wednesday & Friday*) over a period of twelve weeks. Each experimental session was of 30-45 minutes duration excluding warm-up and warm-down. The SAQ training was administrated to the experimental group, which include speed, agility and quickness drills. The experimental group undertook three SAQ training sessions a week. Sessions were progressively structured to gradually increase intensity over each of the 12 weeks. To fix the training load for the sprint interval training group the subjects were examined for their exercise heart rate in response to different work bouts, for proposed repetitions and sets, alternating with active recovery based on work-rest ratio. The subject's training zone was computed using Karvonen formula and it was fixed at 70%HRmax to 95%HRmax for both sprint interval training and SAQ training groups.

Collection of the Data

The pretest data was collected prior to the training programme and posttest data was collected immediately after the twelve weeks of SAQ training and sprint interval training, from the experimental groups and a control group.

Statistical Technique

The information gathered from the three gatherings before and post experimentation on chose subordinate variable was factually broke down to discover the noteworthy contrast assuming any, by applying the investigation of covariance (ANCOVA). Since three gatherings are included, at whatever point the acquired 'F' proportion esteem was observed to be noteworthy for balanced post test implies, the Scheffe's test was connected as post hoc test to decide the combined mean contrasts, assuming any. In every one of the cases the dimension of certainty was settled at 0.05 for criticalness.

RESULT

The pre and post test data collected from the experimental and control groups on speed was statistically analyzed by analysis of covariance and the results are presented in table–I.

Table – I: Analysis of Covariance on Speed of Experimental and Control Groups

	SAQ Training Group	Sprint Interval Training Group	Control Group	S o V	Sum of Squares	df	Mean Squares	'F' ratio
Pre test Mean	7.89	7.87	7.94	B	0.032	2	0.016	0.31
SD	0.20	0.22	0.26	W	2.20	42	0.052	
Post test Mean	7.53	7.40	7.91	B	2.32	2	1.16	12.70*
SD	0.35	0.27	0.28	W	3.83	42	0.09	
Adjusted Post test Mean	7.54	7.44	7.87	B	1.75	2	0.88	44.00*
				W	1.19	41	0.02	

(The required table value for significance at 0.05 level of confidence with degrees of freedom 2 and 42 is 3.23 and degree of freedom 2 and 41 is 3.22)

**Significant at .05 level of confidence*

Table-I shows that the pre-test means and standard deviation on speed of SAQ training, sprint interval training and control groups are 7.89 $\pm$ 0.20, 7.87 $\pm$ 0.22 and 7.94 $\pm$ 0.26 respectively. The obtained 'F' ratio value 0.31 of speed is less than the required table value of 3.23 for the degrees of freedom 2 and 42 at 0.05 level of confidence, which proved that the random assignment of the subjects were successful and their scores in speed before the training were equal and there was no significant differences.

The post-test means and standard deviation on speed of SAQ training, sprint interval training and control groups are 7.53 $\pm$ 0.35, 7.40 $\pm$ 0.27 and 7.91$\pm$ 0.28 respectively. The obtained 'F' ratio value 12.70 of speed is greater than the required table value of 3.23 for the degrees of freedom 2 and 42 at 0.05 level of confidence. It implies that significant differences existed between the three groups during the post test period on speed.

The adjusted post-test means on speed of SAQ training, sprint interval training and control groups are 7.54, 7.44 and 7.87 respectively. The obtained 'F' ratio value 44.00 of speed is greater than the required table value of 3.22 for the degrees of freedom 2 and 41at 0.05 level of confidence. Hence, it is concluded

that significant differences exist between the adjusted post test means of SAQ training, sprint interval training and control groups on speed.

Since, the acquired 'F' proportion an incentive in the balanced post test implies is observed to be huge, the Scheffe'S test is connected as post hoc test to discover the matched mean distinction, and it is exhibited in table-II.

Table –II: Scheffe's Post Hoc Test for the Differences among Paired Means of Experimental and Control Groups on Speed

SAQ Training Group	Sprint Interval Training Group	Control Group	Mean Difference	Confidence Interval
7.54	7.44		0.10*	0.09
7.54		7.87	0.33*	0.09
	7.44	7.87	0.43*	0.09

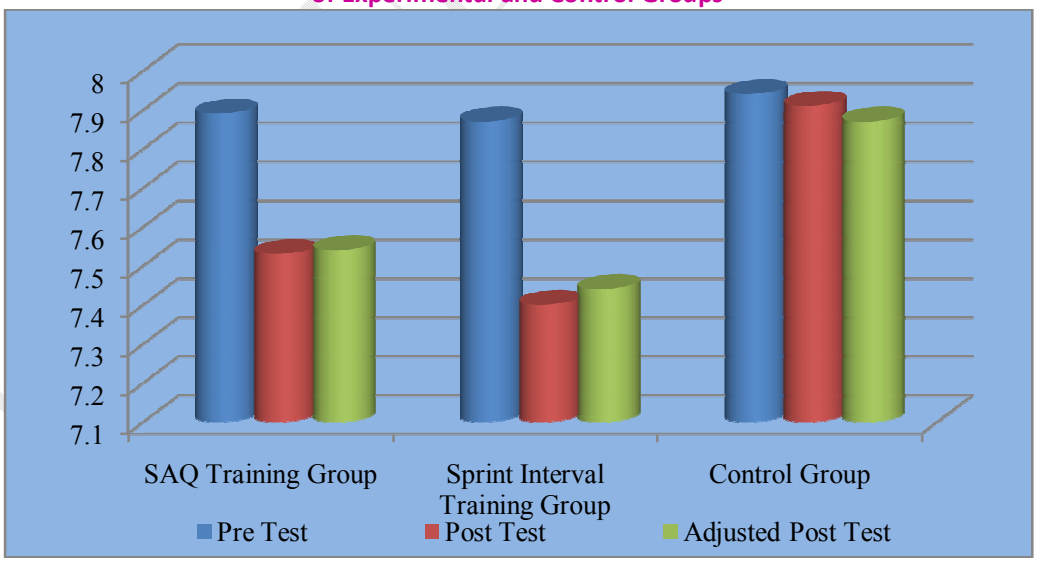
**Significant at .05 level*

The Scheffe's post hoc analysis proved that significant mean differences exist between SAQ training and sprint interval training groups, SAQ training and control groups, sprint interval training and control groups on speed. Since, the mean differences 0.10, 0.33 and 0.43 are higher than the confident interval value of 0.09 at .05 level of confidence.

Hence, it was concluded that due to the effect of SAQ training and sprint interval training the speed of the male sprinters was significantly improved. It was also concluded that sprint interval training was significantly better than SAQ training in improving speed.

The pre, post and adjusted post test mean values of experimental and control groups on speed of male sprinters are graphically represented in figure-I.

Figure – I: Diagram Showing the Mean Values on Speed of Experimental and Control Groups



DISCUSSION

This study has shown that 12 weeks of SAQ and sprint interval training had positive effects on speed of the male sprinters. Sprinters in the experimental group improved their performance significantly. Although speed represents a very important component of fitness, quickness (acceleration speed during the first steps) is probably more important. This is because sprints are mainly performed over short distances undertaken at maximal intensity although the longest distances tend to be about 40 m and usually involves several changes in direction (Rienzi et al., 2000). Bloomfield et al.,'s (2007) viewpoint is that the SAQ regimen is an important training method for the improvement of speed and quickness.

High-speed actions have been categorized as requiring acceleration, maximal speed or agility skills (Gambetta, 1996). Whilst, Chapman, Derse and Hansen (2008) described speed as consisting of running speed, reaction speed and acceleration speed during the first steps (referred to as quickness). Both of these categorizations imply that the SAQ (speed, agility & quickness) training method should be a useful component of fitness training (Pearson, 2001). Hence this form of training is thought to encourage the adaptation of movement mechanics, length and frequency of steps, and increased hip height in the pursuit of increased speed, agility and quickness (Pearson, 2001).

Previous studies have reported the beneficial effects of interval training on speed. The results of the present study are also in agreement with the observation by Dupont et al*.,* (2004) who suggested that high intensity interval training can be used as a means to improve sprint performance. Additionally, Cheetham and Williams (1987) have been found 11.1% improvement in peak running speed following high intensity training. Also consistent with previous studies, Edge et al., (2005) observed that, five weeks of high intensity interval training resulted in greater improvement in repeated sprint ability. Similarly, Dawson et al., (1998) found significant improvement in speed and repeated sprinting performance among male subjects, after six weeks of short sprint training sessions. In addition, Casey et al., (1996) reported that during sprints, type-II muscle fibers are recruited to a large extent to produce high power output as fast as possible. Hence, it is suggested that performances in anaerobic types of sports are improved by high intensity training interspersed with periods of active recovery are used as the training stimulus.

CONCLUSION

The result of the study reveals that due to the effect of SAQ training and sprint interval training the speed of the subjects was significantly improved. It was also concluded that sprint interval training was significantly better than SAQ training in improving speed of male sprinters.

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