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## Impact of SAQ training with speed training on acceleration and speed endurance among young adult men

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### Abstract

The purpose of the study was to find out the impact of SAQ training with speed training on acceleration and speed endurance among young adult men. To achieve the purpose of this study, 20 young adult men are randomly selected as subjects from the St. John's College of Physical Education, Veeravanallur, Tirunelveli, Tamil Nadu, India. Their age were ranged from 21( $\pm$ 2) years. The selected participants were randomly divided into two groups such as group 'I' underwent SAQ training with speed training (n=10) and group 'II' acted as control group (n=10). Group 'I' underwent SAQ training with speed training for three alternative days and one session per day and each session lasted for 45 minutes for eight week. Group 'II' was not exposed to any specific training but they were participated in regular activities. The data on acceleration and speed endurance were collected by administering by 30 m dash test and 150 meter run test. The pre and posttests data were collected on selected criterion variables prior and immediately after the training programme. The pre and post-test scores were statistically examined by the dependent 't' test and analysis of co-variance (ancova) for each and every selected variable separately. It was concluded that the SAQ training with speed training had shown significantly improved in acceleration and speed endurance. However the control group had not shown any significant improvement on any of the selected variables such as acceleration and speed endurance.

**Keywords:** SAQ training with speed training, acceleration, speed endurance, young adult men

### Introduction

The SAQ training method more frequently uses the programmed than random type conditioning after the SAQ continuum. One SAQ session is composed of 7 components, where the main part of the session, explosion and expression of potential, are combinations of programmed and random conditioning. Integral planning and programming is required to progress from fundamental movement patterns to highly positional specific movements [1]. Furthermore, the SAQ training method consolidates speed, agility, and quickness through the range of soccer specialized exercises. All exercises are performed with optimal bio-mechanical movement structures, and consequently, energy and time savings are made. [2]. Running at high speed is component of children's play, and have been shown to promote development of the muscular system and to stimulate to the long-term effect on higher bone density in the skeletal system [3]. Sprint training a high sprint velocity over short distances vital for successful performance in team and field sport [4]. Accelerating from stationary position or a moving start requires high force generation capacity to overcome the body's inertia. Thus, training techniques involving a high external resistance are useful for developing acceleration [5]. Free sprint training or sprint training without the use of any external equipment, forms the basis for most speed training programs. Free sprint training has been shown to increase running velocity over short distances [5].

### Statement of the problem

The purpose of the study was to find out the impact of SAQ training with speed training on acceleration and speed endurance among young adult men.

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**Methodology**

The purpose of this study was to find out the impact of Saq training with speed training on acceleration and speed endurance among young adult men. To achieve the purpose of the study twenty young adult men are randomly selected as subjects from the St. John’s College of Physical Education, Veeravanallur, Tirunelveli, Tamil Nadu, India. Their age ranged from 21(±2) years. The researcher reviewed the available scientific journals, periodical, magazine, e-resources and research paper. Taking into consideration feasibility criteria, availability of the instrument and relevance of the variable of the present study the following dependent variables namely acceleration and speed endurance were selected. Similarly progressive Saq training with speed training were chosen as independent variable. The acceleration and speed endurance were assessed by 30 m dash test and 150 meter run test respectively. This study was conducted to determine the possibility cause and impact of Saq training with speed training on speed and speed endurance among young adult men. The subjects were divided into two equal group consists of 10 each and named

as experimental group (Group-I) and control group (Group-II). Group-I (n=10) underwent Saq training with speed training Group II (n=10) acted as control group. The control group was not given any treatment and the experimental group was given Saq training with speed training for three alternative days per week, for a period of eight weeks. The related group research design was used in this study. The collected data from the two groups prior to and after the experimental treatments on acceleration and speed endurance were statistically analyzed by using the statistical technique of dependent ‘t’ test and analysis of covariance (ANCOVA). In all the cases 0.05 level of confidence was fixed as a level of confidence.

**Results and findings**

The impact of Saq training with speed training on acceleration and speed endurance parameters were analyzed and presented below.

**Speed**

**Table 1:** Computation of ‘t’-ratio between pre and post-test means of SAQ training with speed training and Control groups on acceleration (seconds)

Group	Test	Mean	t-ratio
SAQ training with speed training Group	Pre test	4.21	9.05*
	Post test	4.07	
Control Group	Pre test	4.23	1.64
	Post test	4.22	

\*Significant at 0.05 level. (Table value required for significance at.05 level for ‘t’-test with df 9 is 2.26)

The table 1 shows that the pre-test mean value of Saq training with speed training group and control group are 4.21 and 4.23 respectively and the post-test means are 4.07 and 4.22 respectively. The obtained dependent t-ratio values between the pre and posttest means of Saq training with speed training and control group are 9.05 and 1.64 respectively. The table value required for significant difference with DF 9 at

0.05 level is 2.26. Since, the obtained ‘t’ ratio value of varied Saq training with speed training group was greater than the table value, it is understood that Saq training with speed training had significantly improved the acceleration. However, the control group has not improved significantly. The obtained ‘t’ value is less than the table value, as they were not subjected to any specific training.

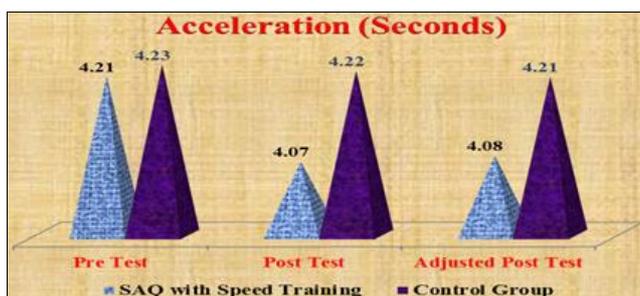
**Table 2:** Analysis of covariance on acceleration of SAQ training with speed training and control groups

Adjusted Post Test Means		Source of variance	Sum of squares	DF	Mean square	F – ratio
Saq training with speed training Group	Control Group	Between	22.83	1	22.83	21.74*
4.08	4.21	Within	17.85	17	1.05	

\* Significant at 0.05 level. Table value for DF 1, 17 was 4.45

Table 2 shows that the adjusted posttest means values on acceleration. The obtained f- ratio of 21.74 for adjusted post-test mean is greater than the table value 4.45 with DF 1 and 17 required for significance at 0.05 level of confidence. The results of the study indicate that there is a significant mean

difference exist between the adjusted posttest means of Saq training with speed training Group and control groups on acceleration. The bar diagram shows the mean values of pre-test, post-test and adjusted posttest on acceleration of SAQ training with speed training Group and control group.



**Fig 1:** Pre test, post test and adjusted post test mean values of Saq training with speed training and control groups on acceleration.

**4.2 Speed endurance**

**Table 4.3:** Computation of ‘t’-ratio between pre and posttest means of Saq training with speed training and Control group on speed endurance (seconds)

Group	Test	Mean	t-ratio
Saq training with speed training	Pre test	22.79	13.26*
	Post test	21.84	
Control Group	Pre test	22.68	1.83
	Post test	22.61	

\*Significant at 0.05 level. (Table value required for significance at.05 level for ‘t’-test with DF 9 is 2.26).

The table 4.3 shows that the pre-test mean value of Saq training with speed training and control groups are 22.79 and 21.84 respectively and the post-test means are 22.68 and 22.61 respectively. The obtained dependent t-ratio values between the pre and posttest means of Saq training with speed training and control group are 13.26 and 1.83 respectively. The table value required for significant difference with DF 9

at 0.05 level is 2.26. Since, the obtained 't' ratio value of varied SAQ training with speed training group was greater than the table value, it is understood that SAQ training with speed training group had significantly improved the speed endurance. However, the control group has not improved significantly. The 'obtained t' value is less than the table value, as they were not subjected to any specific training.

**Table 4:** Analysis of covariance on speed endurance of SAQ training with speed training group and control group

Adjusted Post Test Means		Source of variance	Sum of squares	DDF	Mean square	F – ratio
SAQ training with speed training	Control Group	Between	87.65	1	87.65	16.92*
21.80	22.61	Within	88.06	17	5.18	

\* Significant at 0.05 level. Table value for DF 1, 17 was 4.45

Table 4 shows that the adjusted posttest means values on speed endurance. The obtained f- ratio of 16.92 for adjusted post-test mean is greater than the table value 4.45 with df 1 and 17 required for significance at 0.05 level of confidence. The results of the study indicate that there was a significant mean difference exist between the adjusted posttest means of SAQ training with speed training and control groups on speed endurance. The bar diagram shows the mean values of pre-test, post-test and adjusted post-test on speed endurance of SAQ training with speed training group and control group.



**Fig 2:** Pretest, posttest and adjusted posttest mean values of SAQ training with speed training and control groups on speed endurance.

### Experimental design and statistical procedure

The experimental design used for the present investigation was random group design involving twenty young adult men for the training effect. The pre and posttests scores were statistically examined by the dependent 't' test and Analysis of Co-Variance (ANCOVA) for each and every selected variables separately. It was concluded that the SAQ training with Speed training group were improved acceleration and speed endurance when compared to the control group. However the control group had not shown any significant improvement on selected criterion variables on selected dependent variables such as acceleration and speed endurance.

### Training protocol

The SAQ training with Speed training group was scheduled for one session a day each session lasted between an hours approximately. During the training period, the experimental group underwent SAQ training with Speed training five days a week for eight weeks. The training programme was conducted during the morning sessions between 6.00a.m. to 7a.m.

### Discussion on findings

The results of the study indicated that the experimental group namely, SAQ training group had significantly improved in the

selected dependent variables such as acceleration and speed endurance among young adult men. It is, also found that the improvement influenced acceleration and speed endurance of SAQ training group was greater than control group. The following studies are supported to the result of this investigation such as Milanovic, Sporis, Trajkovic, Sekulic, James, & Vuckovic,<sup>[6]</sup> (2014) & Mathisen, & Svein, (2015)<sup>[7]</sup> & Lockie, (2016)<sup>[8]</sup>.

### Conclusions

1. There was significant improvement on acceleration due to the impact of SAQ training with speed training among young adult men.
2. There was significant improvement on speed endurance due to the impact of SAQ training with speed training among young adult men.
3. There was significance difference between SAQ training with speed training and control groups.
4. However the control group had not shown any significant improvement on any of the selected variables.

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