

Effect of SAQ Training on Speed and Acceleration Among Women Sprinters

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Abstract

Objective: The aim of this study was to analysis the effect of Speed, Agility, and Quickness (SAQ) Training program on Speed, and Acceleration among women sprinters.

Methods: Thirty women sprinters studying in Coimbatore district were selected randomly as subjects. Their age ranged from 18 to 23 years. They were divided into 2 equal groups. Group 1 (Experimental group i.e., G1=15) was subjected to Speed, Agility, and Quickness (SAQ) training for 3 alternate days in a week and group 2 (Control group i.e., G2=15) under gone conventional training for a period of 8 weeks under normal conditions. Data from pretest and post-test was collected in 50 meters speed to test speed, and 30 meters acceleration test to test the acceleration. True Experimental Research Design was used. Paired t-test was used to find out the significant difference between pre and post-test.

Result: The result showed that there was a significant improvement in Speed, and Acceleration among women sprinters by undergoing Speed, Agility and Quickness (SAQ) training for 8 weeks.

Conclusion: Based on this result, it was concluded that SAQ training can be used to improve Speed, and Acceleration in women sprinters.

Key words: SAQ training, speed, acceleration, conventional training, true experimental research design

1. Introduction

Various Sports performance training are designed to improve the fitness level of the sports men in order to improve the ability to perform a given sport. These involves corrective and restorative exercise, constant and consistent accountability, strength, conditioning and cardiovascular training, sport specific techniques and drills and nutritional advice under the supervision of a qualified trainer.

SAQ is an acronym of Speed, Agility and Quickness. Aim of SAQ is to develop the motor abilities and improve the body movement control through the development of neuromuscular system. SAQ training programs are used in various combinations in various sports and games in order to improve the performing skills. Whether an athlete is training for strength or endurance or in combination, the addition of speed, agility, and quickness drills can improve the performance to the next level. SAQ training includes muscular power in all multi plane movement, efficiency of brain signal, kinesthetic or body spatial awareness, motor skill and reaction time. SAQ training encompasses a complete spectrum of training intensity from low to high.

With the references of some research studies, benefits of SAQ training includes increase in

muscular power, anaerobic endurance, flexibility, and an improvement in power performance in various sports and games. These are considered to be some of essential components to compete in international events.

SAQ was defined by Polman, Bloomfield and Edwards (2009) as a method that involves progressive exercise in order to develop an athlete's ability to be more skilful at faster speed and greater precision. Reilly (1997) reveals that games players require a high level of physical fitness in order to meet the demands of the game (Brown, Woodman & Yap, 2000). So athletes must be trained effectively to improve their sport specific attributes and to take part in competitions.

Speed

Speed, which was defined as the time taken to cover a determined distance in a straight line, often referred to as linear speed, is an important component in sprint.

Agility

Speed refers to moving in a straight line, whereas agility is the ability to change the direction quickly and effectively. Agility training will help to improve the performance for one who struggles to move side-to-side, or find off balance.

Quickness

While speed and agility rely on a lower-body strength, quickness refers to body's reflexive reactions. Quickness measures the instant and rapid responses. Adding quickness drills to the training program will help one who have trouble getting the body into position quickly or lack in explosiveness in the first few steps. This will help to improve the reaction time and make one to be a quicker athlete.

Objective of the study

The aim of this study was to find out the effect of Speed, Agility and Quickness (SAQ) Training program on Speed, and Acceleration among women sprinters.

Hypotheses

It was hypothesized that 8 weeks of SAQ Training will have:

- 1) Significant improvement in the performance of Speed among women Sprinters
- 2) Significant improvement in Acceleration among women Sprinters

2. Research method

Thirty women sprinters studying in Coimbatore district were randomly selected as subjects. Their age ranged from 18 to 23 years. Subjects were randomly assigned into two equal groups. Experimental group (G1=15) was subjected to SAQ training and Control group (G2=15) was given conventional training in the morning session for a period of 8 weeks. Training group involved in SAQ training for 3 alternate days in a week. All trainings were under normal conditions.

Collection of data

Pre and post test data was collected from all subjects. Speed was assessed by 50 meter speed

test and acceleration was assessed by 30 meter acceleration test. Paired t-test was used to find out the significant difference between pre and post-test. True Experimental Research Design was used.

Selection of subjects

To achieve the purpose, 30 women sprinters were selected randomly from Coimbatore district. The age group of subjects ranged between 18 years and 23 years.

Test Procedure

50 meters speed test

The test involves running a single maximum sprint over 50 meters, start from a stationary standing position.

30 meters acceleration test

Subjects starts in their own time and sprints as fast as possible over the 30 meters straight section marked.

3. Statistical Analysis

The data pertaining to the variables in this study were examined by using paired ‘t’ test to find out the significant improvement tested at 0.05 level of significance. The analysis of paired ‘t’ test on data obtained for speed, and acceleration of the pretest and posttest means of Experimental and Control group are presented in Table 1.

Table 1: Mean and paired t-test of Experimental and Control group

Variables	Mean	Experimental group	Control group
Speed	Pretest mean	8.07	8.21
	Posttest mean	7.77	8.20
	t-test	5.43*	1.20
Acceleration	Pretest mean	4.38	4.38
	Posttest mean	4.25	4.37
	t-test	6.35*	2.96

*Significant at 0.05 level of confidence (14) = 2.977

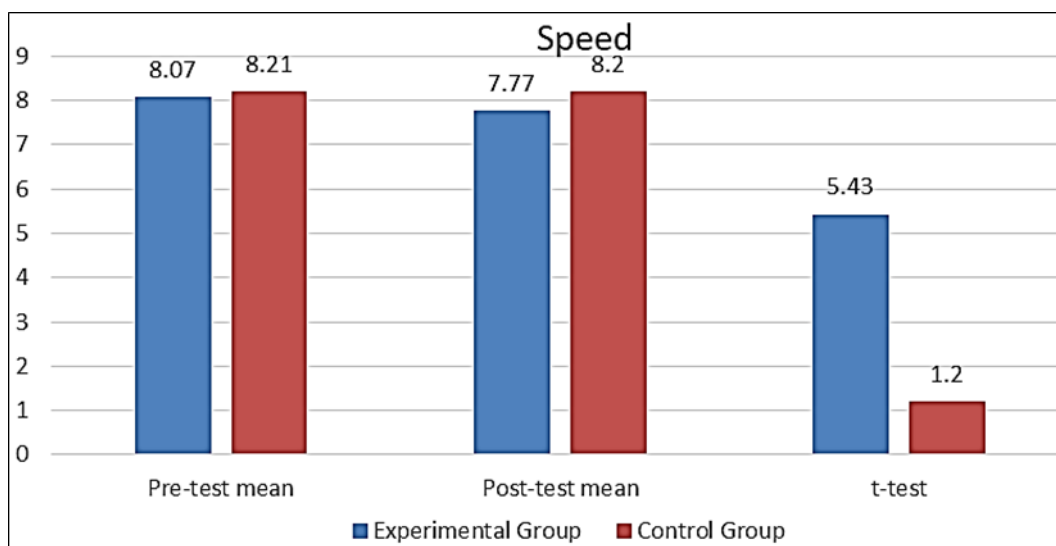


Figure 1: Graphical representation of pre and post mean value and ‘t’ ratio of Speed between

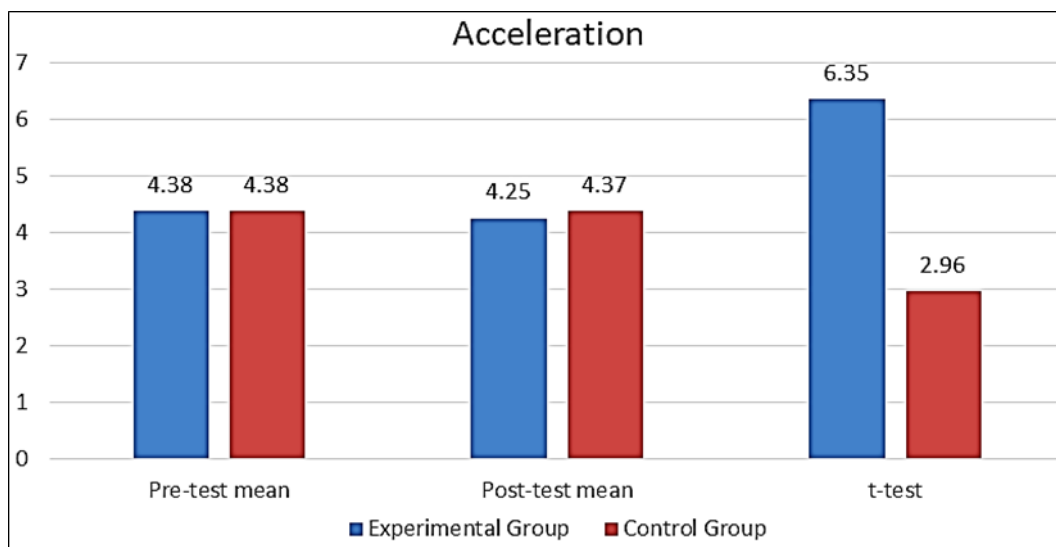


Figure 2: Graphical representation of pre and post mean value and ‘t’ ratio of Acceleration between Experimental and Control group

4. Result

Table 1 shows the computation of pre and posttest Mean and ‘t’ ratio on speed and acceleration of Experimental group and Control group.

The obtained ‘t’ ratio on Speed and Acceleration of the SAQ training group are 5.43 and 6.35 respectively. The required table value is 2.977 for the degrees of freedom 14 at 0.05 level of confidence. The obtained ‘t’ ratio on Speed and Acceleration of the experimental group is higher than the table value. Hence the obtained ‘t’ ratio is higher than the table value, it is understood that the SAQ training had significantly improved the performance of Speed and Acceleration among women sprinters.

The obtained ‘t’ ratio on Speed and Acceleration of Control group are 1.20 and 2.96 respectively. The required table value is 2.977 for the degrees of freedom 14 at 0.05 level of confidence. Since the obtained ‘t’ ratio on Speed and Acceleration of the Control group is lesser than the table value, it is statistically insignificant.

5. Discussion

This study supports the previous study done by Azmi, *et al.*, which reveals that SAQ training will improves the performance speed, agility, and acceleration. Now a days, exercise of speed, agility and quickness (SAQ) is becoming a popular way to train athletes to cover a complete spectrum intensity of exercise, from low intensity to high intensity. SAQ drills can also be used to teach movements such as heating or to improve the physical condition of athletes. SAQ training, through a system of progressive exercise, aims at the development of fundamental motor skills and to improve the ability of the athlete to be more skilled at faster speeds and with greater precision. It also develops the ability to exert maximum force during activity at higher speed. Milanović, Z., *etal.*, reveals that the seven different phases of a SAQ training (Pearson, 2001) contributed to a statistically significant improvement in performance of different agility tests with and without the ball in U19 soccer players, these did not considered the speed and the acceleration.

SAQ training paves a way for better development and had significantly improved the speed, agility, and balance among inter collegiate athletes.

This study proves that the SAQ training methods significantly improves the performance of

women sprinters.

6. Conclusion

The result of this study suggests that

1. There is a significant improvement in the performance of speed after SAQ training.
2. There is a significant improvement in the performance of acceleration after SAQ training in women sprinters.

This study supports the previous studies in implementing SAQ training for better performance of speed and acceleration.

7. Acknowledgements

The authors thank the women sprinters in Coimbatore district and Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, Tamil Nadu, India. This study was a part of research work for the Doctor of Philosophy project by the research scholar Ms. S Selvanayaki, and the Thesis advisor and guide Dr. R Saravana Prabha, Associate Professor, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, Tamil Nadu, India. The authors declare no conflict of interest.

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