



PLYOMETRIC AND SAQ TRAINING'S IMPACT ON PHYSICAL EDUCATION STUDENTS SPEED PERFORMANCE

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Abstract:

The purpose of the study was to investigate the effect of plyometric training and SAQ training on speed among physical education students. It was hypothesized that there would be significant differences on speed due to the effect of plyometric training and SAQ training among physical education students. For the present study the 45 male physical education students from Alagappa University, Karaikudi were selected at random and their age ranged from 18 to 21 years. For the present study pre test - post test random group design which consists of control group and two experimental group was used. The subjects were randomly assigned to three equal groups of fifteen each. Group 'A' underwent plyometric training only, group 'B' underwent SAQ training only and group 'C' have not underwent any training. The data was collected before and after twelve weeks of training. The data was analyzed by applying Analysis of Co-Variance and scheffe's post hoc test. The level of significance was set at 0.05. Both the training methods produced similar effect on speed.

Key Words: Plyometric training, SAQ Training, Speed, Physical Education Students.

Introduction:

A muscle can achieve its maximum force in the shortest amount of time thanks to plyometric exercises. "Quick, powerful movements using a pre-stretch or countermovement that involves the stretch-shortening cycle" are a characteristic of plyometrics. Bounding, box jumps, depth jumps, standing and multiple jumps, and hops are some examples of these exercises. There are three stages in the stretch-shortening cycle: concentric contraction, amortisation, and eccentric contraction. While the agonist muscle group is stretched during the eccentric phase, it is rapidly contracted during the concentric phase. However, the brief change from the eccentric to the concentric phases is known as amortisation. Increasing the power of subsequent movements is the goal of plyometric exercises, which are achieved by utilising the stretch reflex as well as the naturally elastic components of muscles and tendons. The stretch reflex and elastic energy storage are triggered by a quick eccentric muscle action, which raises the force generated during the ensuing concentric action. The stretch reflex will not react and all of the stored elastic energy will be lost as heat, which is why the amortisation phase needs to be as brief as possible (Abbas, 2009).

Training athletes for speed, agility, and quickness has grown in popularity. Training for speed, agility, and quickness can help everyone, whether they are professionals in a training camp or schoolchildren on a basketball court. Although this approach has been used for a number of years, not all athletes use it, mostly because they are not well-informed about the drills. Training for speed, agility, and quickness can be used to improve strength, speed, or the capacity to apply the most force possible when moving quickly. Increases in muscular power in all multiplanar movements, brain signal efficiency, kinaesthetic or body spatial awareness, motor skills, and reaction time are some advantages of speed, agility, and quickness training (Akhil et al. 2011).

Methodology:

The purpose of the study was to investigate the effect of plyometric training and SAQ training on speed among physical education students. It was hypothesized that there would be significant differences on speed due to the effect of plyometric training and SAQ training among physical education students. For the present study the 45 male physical education students from Alagappa University, Karaikudi were selected at random and their age ranged from 18 to 21 years. For the present study pre test - post test random group design which consists of control group and two experimental group was used. The subjects were randomly assigned to three equal groups of fifteen each. Group 'A' underwent plyometric training only, group 'B' underwent SAQ training only and group 'C' have not underwent any training. The data was collected before and after twelve weeks of training. The data was analyzed by applying Analysis of Co-Variance and scheffe's post hoc test. The level of significance was set at 0.05.

Results:

Table 1: Computation of Mean and Analysis of Covariance on Speed of Plyometric Training, SAQ Training and Control Groups

	PTG	SAQTG	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F
Pre Test Mean	7.14	7.15	7.15	BG	0.001	2	0.001	0.68
				WG	0.034	42	0.001	
Post Test Mean	6.87	6.83	7.14	BG	0.88	2	0.440	92.46*
				WG	0.20	42	0.005	
Adjusted Post Test Mean	6.88	6.83	7.14	BG	0.85	2	0.42	91.42*
				WG	0.19	41	0.005	

* Significant at 0.05 level

Table value for df 2, 42 was 3.21 and 2, 41 was 3.22

The above table indicates the adjusted mean value of speed of plyometric training, SAQ training and control groups were 6.88, 6.83 and 7.14 respectively. The obtained F-ratio of 91.42 for adjusted mean was greater than the table value 3.22 for the degrees of freedom 2 and 41 required for significance at 0.05 level of confidence. The result of the study indicates that there was a significant difference among the experimental and control groups on speed. The above table also indicates that both pre and post test means of experimental and control groups differ significantly.

Figure 1: Shows the Mean Values on Speed of Plyometric Training and SAQ Training and Control Groups

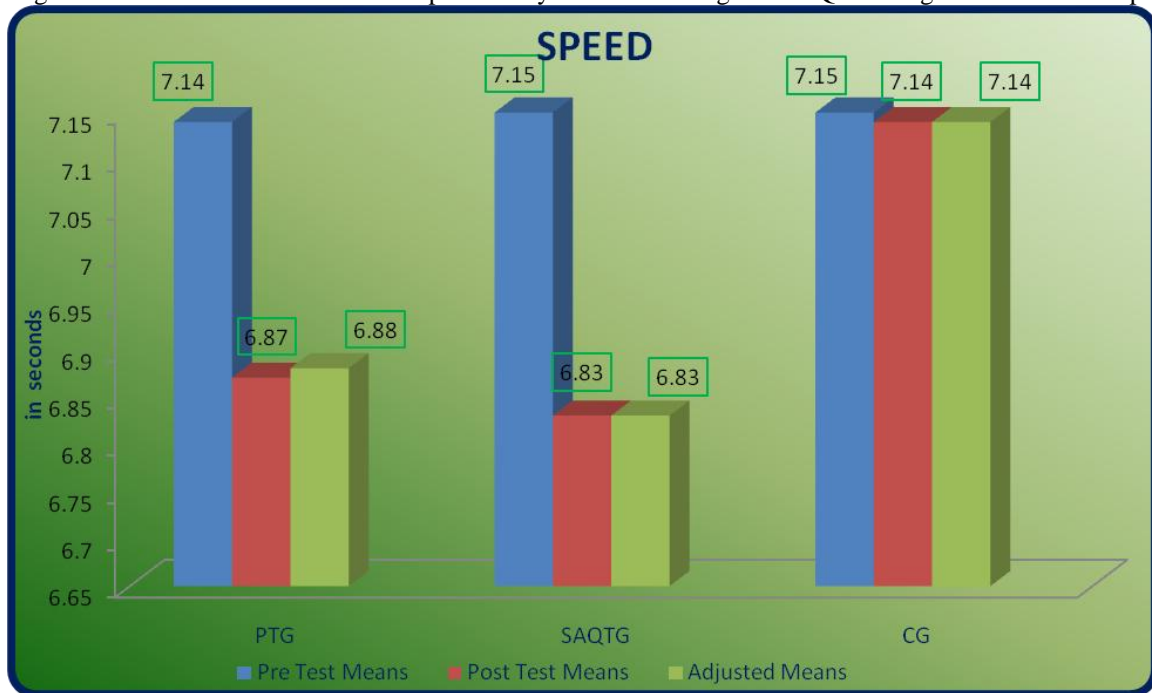


Table 2: Adjusted Mean and Differences between the Means of Plyometric Training, SAQ Training and Control Groups on Speed

PTG	SAQTG	Control Group	Mean Difference	CI Value
6.88	6.83	---	0.05	0.06
6.88	---	7.14	0.26*	
---	6.83	7.14	0.31*	

Table 2 shows the adjusted means on speed and difference between the means of the plyometric training, SAQ training and control group. The mean differences of plyometric training group and control group, SAQ training group and control group were 0.26 and 0.31 respectively was greater than the CI value 0.06. Hence there exists significant difference. The mean difference between plyometric training group and SAQ training group was 0.05 lesser than the CI value 0.06. Hence there exists no significant difference.

Conclusion:

- It was observed that the twelve weeks of plyometric training have significantly improved the speed of physical education students.
- It was observed that the twelve weeks of SAQ training have significantly improved the speed of physical education students.

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