International Journal of Engineering Research and Modern Education (IJERME)
Impact Factor: 7.018, ISSN (Online): 2455 - 4200
(www.rdmodernresearch.com) Volume 8, Issue 2, 2023

IMPACT OF PLYOMETRIC TRAINING AND SAQ TRAINING ON AGILITY AMONG PHYSICAL EDUCATION STUDENTS

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Cite This Article: Dr. K. Divya, "Impact of Plyometric Training and SAQ Training on Agility Among Physical Education Students", International Journal of Engineering Research and Modern Education, Volume 8, Issue 2, July - December, Page Number 47-49, 2023.

Abstract:

The purpose of the study was to investigate the impact of plyometric training and SAQ training on agility among physical education students. It was hypothesized that there would be significant differences on agility due to the impact 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 groups 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 impact on agility.

Key Words: Plyometric Training, SAQ Training, Agility, Physical Education Students.

Introduction:

A progressive continuum should be used for plyometric training. It begins simply and gets more intricate and skill-specific as the athlete grows older and develops physically. It may actually be a component of the puzzle of elite performance. One particular technique for improving explosive power in workers is plyometric training. It strengthens the connection between explosive power and maximum strength. Elastic energy and myotic reflex are used in plyometric training to build power. In order to prevent overstretching of the affected muscle, the kinetic energy developed during the amortisation phase will be used to produce a strong contraction. As a result, the athlete's momentum serves as an overload to stretch the muscle eccentrically prior to concentric concentration, allowing the muscle to store more elastic energy. By increasing the strength of the subsequent concentric concentration, this elastic energy is recycled. The muscle's transition time between the lengthening and shortening phases is crucial. This leads to the basic plyometric principle: the use of elastic energy and the transfer of chemical energy to mechanical work are determined by the rate of strength, not its magnitude. Both the storage of elastic energy and the activation of the muscle's myotic reflex are responsible for the improvement in skeletal muscle performance that results from early pre-stretching (Tofas et al. 2008).

Training for speed, agility, and quickness can encompass all training intensities, from low to high. Since each person will enter a training program at a different level, the intensity of the training must match the individual's capabilities. Everyone can benefit from low-intensity speed, agility, and quickness exercises for a variety of purposes. Additionally, SAQ drills can be used to condition an athlete, teach movement, or warm up. Participation in this level of speed, agility, and quickness training requires little to no preparation. Drills that are more intense demand a great deal of preparation. Starting a concurrent strength-training program when beginning speed, agility, and quickness training is an easy way to ensure safe participation and improved efficacy (Zoran et al. 2013).

Methodology:

The purpose of the study was to investigate the impact of plyometric training and SAQ training on agility among physical education students. It was hypothesized that there would be significant differences on agility due to the impact 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 groups 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 Agility 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	17.12	17.96	17.89	BG	0.03	2	0.01	0.85
				WG	0.90	42	0.02	
Post Test Mean	17.09	16.99	17.88	BG	7.15	2	3.57	144.76*
				WG	1.03	42	0.02	
Adjusted Post Test Mean	17.09	16.99	17.88	BG	6.96	2	3.48	137.51*
				WG	1.03	41	0.02	

* 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 agility of experimental plyometric training group, experimental SAQ training group and control groups were 17.09, 16.99 and 17.88 respectively. The obtained F-ratio of 137.51 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 experimental and control groups on agility. 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 Agility of Plyometric Training and SAQ Training and Control Groups

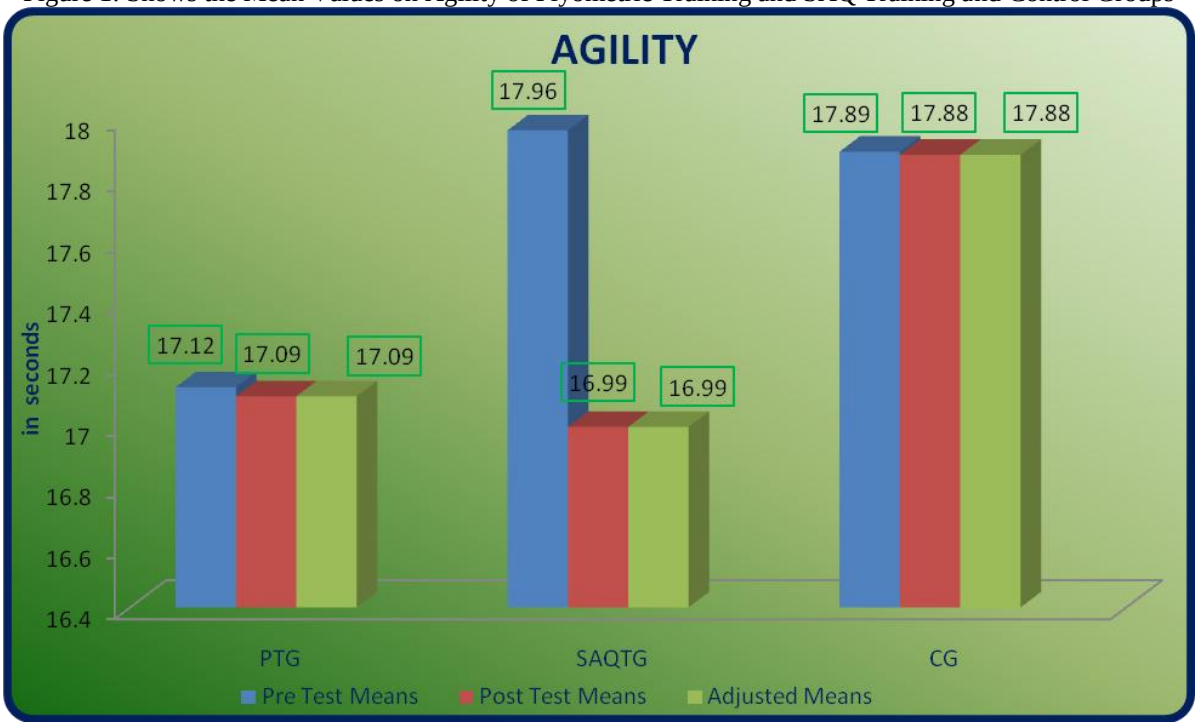

Table 2: Adjusted Mean and Differences between the Means of Plyometric Training, SAQ Training and Control Groups on Agility

PTG	SAQTG	Control Group	Mean Difference	CI value
17.09	16.99	---	0.10	0.13
17.09	---	17.88	0.79*	
---	16.99	17.88	0.89*	

Table 2 shows the adjusted means on agility and difference between the means of the plyometric training group, SAQ training group and control group. The mean differences of plyometric training and control group, SAQ training group and control group were 0.79 and 0.89 respectively was greater than the CI value 0.13. Hence there exists significant difference. The mean difference between plyometric training group and SAQ training group was 0.10 lesser than the CI value 0.13. Hence there exists no significant difference.

Conclusion:

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

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