



ATHLETES' SPECIFIED STRENGTH PARAMETERS AND THE IMPACT OF ASSISTED SPRINT TRAINING

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Abstract:

The purpose of the study was to find out the effect of assisted sprint training on selected strength parameters among athletes. To achieve the purpose of the present study, thirty athletes from Montfort school, Yercaud, Salem District, Tamilnadu were selected as subjects at random and their ages ranged from 14 to 17 years. The subjects were divided into two equal groups at random. The subjects were divided into two equal groups of fifteen subjects each. Group I acted as Experimental Group (Assisted sprint training) and Group II acted as Control Group. Analysis of covariance was computed. It was observed that the twelve weeks of experimental group have significantly improved the selected strength parameters of athletes.

Key Words: Assisted Sprint Training, Athletes, Strength.

Introduction:

Sprint training is essential for improving intercollegiate athletes' athletic performance, particularly in sports requiring quick movements. The ability of assisted and resisted sprint training to increase strength, speed, and coordination has drawn attention among the different training methods. Using external forces, like being pulled by a car or using elastic cords, to help an athlete sprint faster is known as assisted sprint training. By lessening the effect of ground resistance, this technique seeks to increase stride frequency and speed. On the other hand, by increasing the forces an athlete must overcome while sprinting, resisted sprint training-which uses external resistance such as weighted vests, parachutes, or sleds-aims to increase strength, power, and acceleration. Sprint training is essential for improving athletic performance, especially in sports requiring strength, speed, and agility. Athletes in collegiate sports are always looking for ways to maximise their training schedules in order to perform at their best. Assisted sprinting, in which the athlete is helped to increase their speed, and resisted sprinting, in which external resistance is applied to increase strength and power, are two of the most widely used sprint training techniques. The main goal of assisted sprint training is to increase the athlete's capacity to achieve greater speeds by lowering drag or applying external forces, like downhill running or towing mechanisms. Enhancing neuromuscular adaptation, coordination, and stride frequency are the goals of this kind of training. Conversely, resisted sprint training uses resistance, like sledge towing or running uphill, to boost an athlete's force production, strength, and explosive power (Allen & Jones, 2023).

Methodology:

The purpose of the study was to find out the effect of assisted sprint training on selected strength parameters among athletes. It was hypothesized that there would be significant differences on shoulder strength among athletes due to the effect of assisted sprint training. It was hypothesized that there would be significant differences on upper body strength among athletes due to the effect of assisted sprint training. The purpose of the study was to find out the effect of assisted sprint training on selected strength parameters among athletes. To achieve the purpose of the present study, thirty athletes from Montfort school, Yercaud, Salem District, Tamilnadu were selected as subjects at random and their ages ranged from 14 to 17 years. The subjects were divided into two equal groups at random. The subjects were divided into two equal groups of fifteen subjects each. Group I acted as Experimental Group (Assisted sprint training) and Group II acted as Control Group. The requirement of the experiment procedures, testing as well as exercise schedule was explained to the subjects so as to get full co-operation of the effort required on their part and prior to the administration of the study.

Table 1: Test Selection

S.No	Variables	Tests	Units
1	Shoulder Strength	Pull Ups	In Numbers
2	Upper Body Strength	Medicine Ball Throw	In Metres

Analysis of covariance was computed where the final means were adjusted for differences in the initial means, and the adjusted means were tested for significance. The level of significance 0.05 was chosen and considered as sufficient for the study.

Results and Discussion:

Table 2: Computation of Mean and Analysis of Covariance of Shoulder Strength of Experimental and Control Groups

	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F
Pre Test Mean	5.93	5.73	BG	0.30	1	0.30	0.60
			WG	13.86	28	0.49	
Post Test Mean	8.13	6.06	BG	32.03	1	32.03	39.57*
			WG	22.66	28	0.81	
Adjusted Post Mean	8.12	6.07	BG	30.74	1	30.74	36.85*
			WG	22.52	27	0.83	

* Significant at 0.05 level Table value for df 1 and 28 was 4.20, 1 and 27 was 4.21

The above table indicates the adjusted mean value of shoulder strength of experimental and control groups were 8.12 and 6.07 respectively. The obtained F-ratio of 36.85 for adjusted mean was greater than the table value 4.21 for the degrees of freedom 1 and 27 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 shoulder strength. 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 Shoulder Strength of Experimental Group and Control Groups

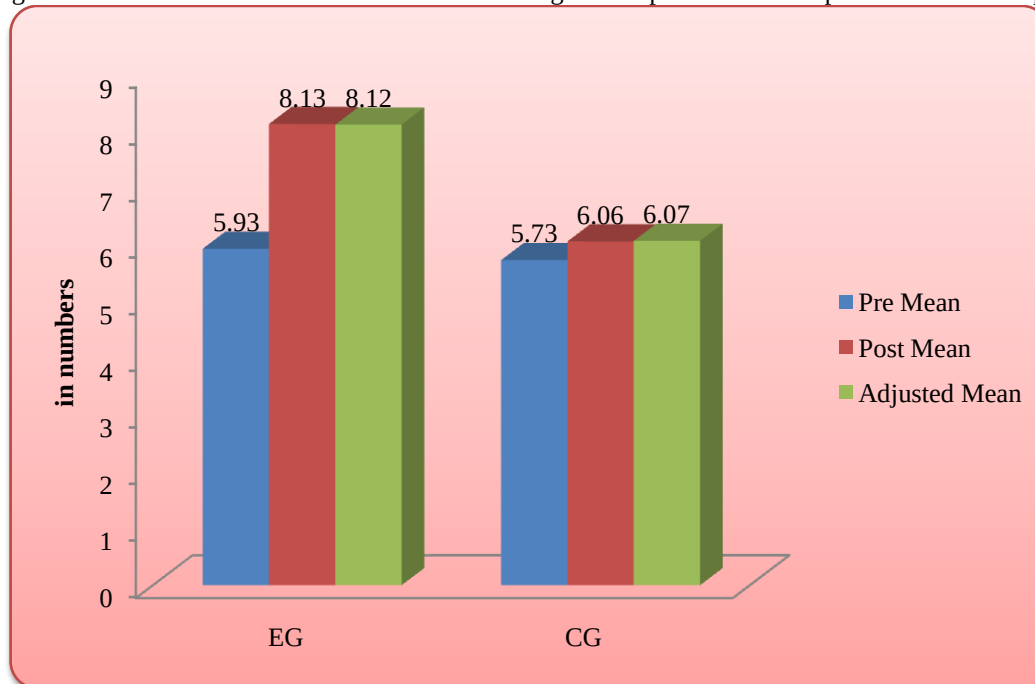


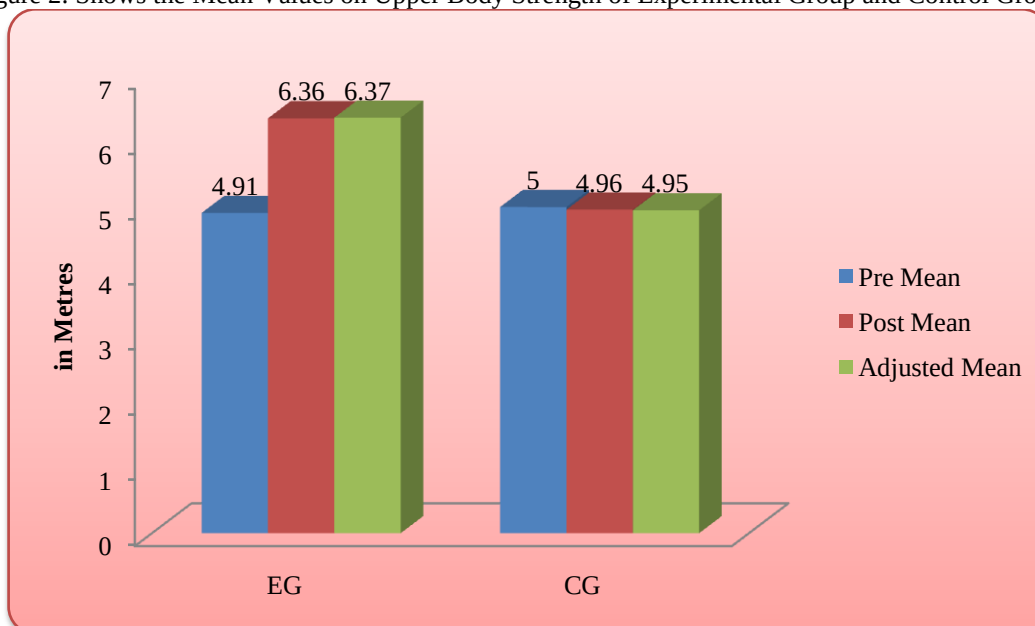
Table 3: Computation of Mean and Analysis of Covariance of Upper Body Strength of Experimental and Control Groups

	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F
Pre Test Mean	4.91	5.00	BG	0.05	1	0.05	0.68
			WG	2.19	28	0.07	
Post Test Mean	6.36	4.96	BG	14.64	1	14.64	195.55*
			WG	2.09	28	0.07	
Adjusted Post Mean	6.37	4.95	BG	14.75	1	14.75	204.86*
			WG	1.94	27	0.07	

* Significant at 0.05 level, Table value for df 1 and 28 was 4.20, 1 and 27 was 4.21

The above table indicates the adjusted mean value of upper body strength of experimental and control groups were 6.37 and 4.95 respectively. The obtained F-ratio of 204.86 for adjusted mean was greater than the table value 4.21 for the degrees of freedom 1 and 27 required for significance at 0.05 level of confidence.

Figure 2: Shows the Mean Values on Upper Body Strength of Experimental Group and Control Groups



Conclusion:

From the results obtained, the following conclusions were drawn:

- It was observed that the twelve weeks of experimental group have significantly improved the selected strength parameters of athletes.

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