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# Impact of pilates and plank exercise on leg strength of adolescent school boys in Prakasam District-Andhra Pradesh

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**Abstract**--In order to evaluate the real facts the detective made a challenge to examine the impact of Pilates and Plank Exercise on Leg Strength of adolescent school boys. Their aged of the subject ranged from 14 to 16 years. Selected subjects was randomly assigned to Three equal groups (n=15), group I underwent Pilates Exercise (PE) and group II underwent plank exercise, group III acted as control group (CG). The Pilates and Plank Exercise was given to the experimental group for 6 days per week for the period of 12 weeks. The control group did not practice in any training except their routine work. The following variables were measured with standard test items: Leg strength . Pre and post test was conducted on separate days with warm up. The leg strength measured by Standing Broad jump in meters. The obtained 'F' ratio was tested for significance at 0.05 level of confidence. Scheffe's post-hoc test of significance was employed in order to test the significant difference between paired adjusted means.

**Keywords**--leg strength, adolescence pilates exercise, plank exercise.

**Introduction**

Sports in the present world have become extremely competitive. It is not the mere participation or practice that brings out victory to an individual. Adolescence is a degree whilst giant adjustments in ethical improvement take place. Sometimes, a discrepancy among adolescents' thoughts, feelings and movements may also bring about socially unwanted outcomes. (Mira Bajo,vic et.al. 2020) Pilates exercises are worldwide popular and celebrate the first Saturday of May in every year as a Pilates day. Pilate's physical activities are designed to be rhythmic and



Pre-test Mean	1.63	1.64	1.59	B:G	0.01	2	00.8	0.16
SD	0.26	0.24	0.13	W:G	2.05	42	0.04	
Post-test Mean	1.77	1.80	1.60	B:G	0.37	2	0.18	5.71
SD	0.22	0.16	0.13	W:G	1.38	42	0.03	
Adjusted Post-test Mean	1.76	1.79	1.61	B:G	0.26	2	0.13	51
				W:G	0.10	41	0.03	

Significant at 0.05 Level

Table – I (a) Comparisons Of Paired Means Showing Scheffe’s Post Hoc Analysis on Leg Strength

PILATES	PLANK	CONTROL	MEAN DIFFERENCES	CI
1.76	1.79		0.03	0.04
1.76		1.61	0.15	
	1.79	1.61	0.18	

### Data Analysis

The above table (III) shows that the pre-test means of Pilates group (I) and Plank group (II) and control group (III) are 1.63, 1.64 and 1.59 respectively. Since the obtained ‘F’ ratio 0.16 is lesser than the table value 3.22 there is no significant difference among the pre-test means at 0.05 level of confidence with 2 and 42 degrees of freedom. It is evident that there is no significant difference among the groups on leg strength before the commencement of the treatment of the schedule. The Post-test means of Pilates group (I) and Plank group (II) and control group (III) are 1.77, 1.80 and 1.60 respectively. Since the obtained ‘F’ ratio 5.71 is higher than the table value 3.22 so it exposed that there is significant difference among the groups on post-test means at 0.05 level of confidence with 2 and 42 degrees of freedom. The adjusted Post-test means of Pilates group (I) and Plank group (II) and control group (III) are 1.76, 1.79 and 1.61 respectively. Since the obtained ‘F’ ratio 51 is highest than the table value 3.22 so it denotes that there is significant difference among the groups on adjusted post-test means at 0.05 level of confidence with 2 and 41 degrees of freedom. The above statements indicates the significant difference exist among the adjusted post test means of Pilates group (I) and Plank group (II) and control group (III). Next to conclude Scheffe’s post-hoc test is applied for the paired means significant difference.

The above table 1(a) shows that the Scheffe’s post-hoc method of testing the significance for the differences between the paired means following a significant analysis of co variance for Pilates group (I) and Plank group (II) and control group (III). The adjusted leg strength parameter means of the difference among groups are given in the table. The mean differences between the Pilates and plank training group is 0.03, which is in significant. In the comparison between Pilates and control group the difference is 0.15, which is significant at 0.05 level of confidence interval. And differences between plank and control group is 0.18, this

indicates that the plank had a better improvement when compared to the Pilates group and control group.

### **Discussion on Hypothesis**

It was hypothesized that there will be positive impact due to Pilates and Plank exercises which will bring the significant changes on selected physical parameters. The findings of the study show that Pilates and Plank exercises have significant and positive influences on physical parameters leg strength. Hence alternative hypothesis has been accepted and null hypothesis has been rejected. The current study investigated the influence of Plank Exercises on the physical and physiological variables of adolescent school boys. The results of this study indicated that Plank Exercises is more efficient to bring out desirable changes over the variables of adolescent school boys. Genc, H., et al., (2019). Effect of 8-week core training exercises on physical and physiological parameters of female handball players. Yadav, S. M., et al., (2011). Effect of Yogasanas and Plank Exercise on Flexibility and Cardiovascular Endurance of Obese Boys. Hence, it was concluded that for abdominal strength and resting pulse rate of improvement on Plank Exercises of adolescent school boys.

### **Conclusions**

From the results of the study and discussion the following conclusions were drawn.

1. Based on the result of the study it was concluded that the 12 weeks of Pilates Exercises have been significantly improved Leg strength of adolescent school boys.
2. Based on the result of the study it was concluded that the 12 weeks of Plank Exercises have been significantly improved Leg strength of adolescent school boys.
3. Based on the result of the study it was concluded that the 12 weeks of Pilates and planks Exercises, the plank exercise was better improvement on Leg strength of adolescent school boys compare to Pilates exercise.

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