



IMPACT OF TOTAL RESISTANCE EXERCISE ON SELECTED PHYSICAL FITNESS COMPONENTS AMONG SCHOOL GIRLS

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ABSTRACT

The purpose of the study was designed to examine the impact of total resistance exercise on selected physical fitness components such as shoulder strength and strength endurance among school girls. The study was randomly selected 30 (thirty) girls from Hollotoli School, Dimapur, Nagaland and their age groups were from 16 to 18 years old. The subjects were divided into two equal groups and consisting 15 students in each. The groups were name as experimental group and control group. Total resistance exercise was assigned with experimental group for 12 weeks, one hour a day and thrice in a week and control group does not undergo for any specific training. Pull up and flexed leg sit-ups were employed as tool for shoulder strength and strength endurance respectively in the study. The test was implemented as pre and post-test for both groups to find out the significance of Total Resistance Exercise on physical fitness components. The statistical technique, ANCOVA was applied for finding the result and the 0.05 level of confidence was fixed as the level of significance for the study. The result of the study showed that there was a significant difference between experimental group and control group on shoulder strength and strength endurance.

Key Words: Total Resistance Exercise, Shoulder Strength, Strength Endurance.

INTRODUCTION

The TRX System, also known as Total Resistance exercises, refers to a specialized form of suspension training that utilizes equipment developed by former U.S. Navy SEAL Randy Hetrick. TRX is a form of suspension training that uses body weight exercises with the aim of developing strength, balance, flexibility and core stability simultaneously. The term suspension training refers to an approach to strength training that uses a system of ropes and webbing called a "suspension trainer" a performance training tool that leverages gravity to allow users to work against their own body weight to complete the exercises. The field of suspension training is a form of resistance training that includes bodyweight exercises in which a variety of multi-planar, compound exercise movements can be performed. Suspension training develops physical strength while using functional movements and dynamic positions. The actual term "suspension training" is a trademark of Fitness anywhere.

A global functional training, mission is to democratize world class training and enable everyone, everywhere to move better throughout life. TRX develops the world's best training equipment, workout programs, and education courses to help people of all fitness levels become better versions of themselves. It is also the leading provider of specialized education courses for fitness professionals. TRX redefined the application of body weight training to enhance human performance and has successfully disrupted the mature landscape of the health club industry. The top professional athletes in every sport, and its equipment and training philosophy is changing the way that soldiers train for combat, athletes at all levels train for competition and regular people of all ages and abilities train for life.

METHODOLOGY

To achieve the purpose of the study, 30 girls were selected as subjects from Hollotoli School, Dimapur, Nagaland. The ages of subjects ranged were between 16-18 years old. They were randomly divided into two equal groups and consisting of 15 subjects in each group. The two groups were named as experimental group (EG) and control group (CG). The EG was treated with Total Resistance Exercise (TRXG) programs for three days in a week for 12 weeks along with their regular programs. The data had been collected to conduct pre-test and post-test from both the groups on selected physical fitness components namely shoulder strength and strength endurance in Table I.

Table I: The tools and technique

Variables	Tests/Tools Administered	Unit
Shoulder Strength	Pull-Up	In numbers
Strength Endurance	One Minute Partial Curl-up Test (Golding,1986)	In numbers

STATISTICAL TECHNIQUE

The analysis of covariance (ANCOVA) was used to analyze the significant difference, if any among the groups. The 0.05 level of confidence was fixed as the level of significance to test the 'F' ratio obtained by the analysis of covariance, which was considered as an appropriate.

ANALYSIS OF DATA

The collected data of experimental group (TRXG) and control group (CG) on shoulder strength and strength endurance were investigated and interpreted in Table-II and III.

Shoulder Strength

The analysis of covariance on shoulder strength of the pre- and post-test scores of total resistance exercises group and control group had been studied and presented in Table II.

Table II: Analysis of Covariance of the Data on Shoulder Strength of Pre- and Post-Tests Scores of Total Resistance Exercises and Control Group

Test	Total Resistance Exercises Group	Control Group	Source of Variance	Sum of Square	Df	Mean Squares	Obtained 'F' Ratio
Pre Test Mean \pm S.D.	15.2 \pm 0.81	14.3 \pm 0.92	Between	0.83	1	0.83	0.769
			Within	30.17	28	1.078	

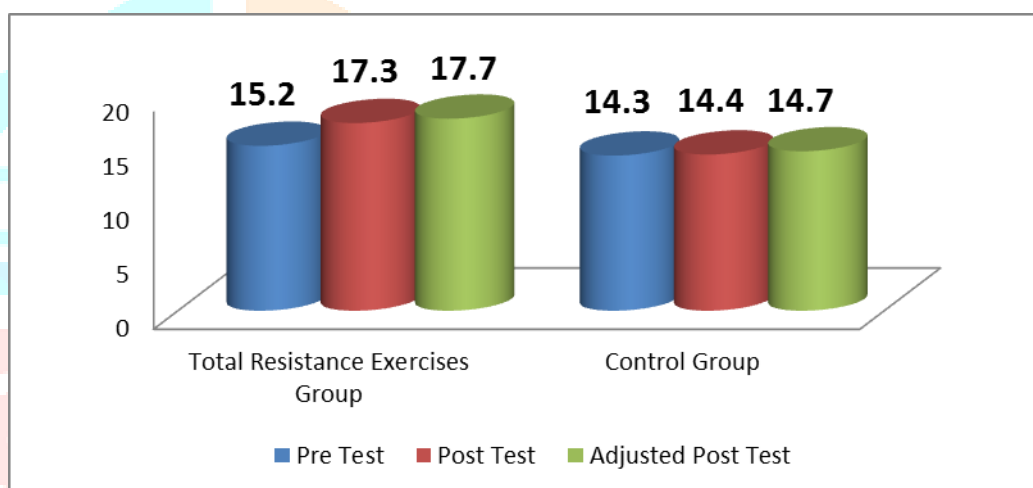
Post Test Mean \pm S.D.	17.3 \pm 0.79	14.4 \pm 0.92	Between	45.66	1	45.66	37.85*
			Within	1.189	28	1.189	
Adjusted post test Mean	17.7	14.7	Between	51.87	1	51.87	42.45*
			Within	33.01	27	1.222	

* Significant at 0.05 level of confidence.

(The table values required for significance at 0.05 level of confidence with df 1 and 28; 1 and 27 were 4.20 and 4.21 respectively).

The Table II showed that the adjusted post-test means of total resistance exercises group and control group were 17.7 and 14.7 respectively on shoulder strength. The obtained “F” ratio of 42.45 for adjusted post-test means was more than the table value of 4.21 for df 1 and 27 required for significance at 0.05 level of confidence on shoulder strength. The results of the study indicated that there was a significant difference between the adjusted post-test means of total resistance exercises group and control group on shoulder strength. The graphical representation of data had been presented in Figure-I.

Figure- I: Bar Diagram showing the Pre, Post and Adjusted Mean Values of Total Resistance Exercises Group and Control Group on Shoulder Strength



Strength Endurance

The analysis of covariance on strength endurance of the pre- and post- test scores of total resistance exercises group and control group had been analyzed and presented in Table III.

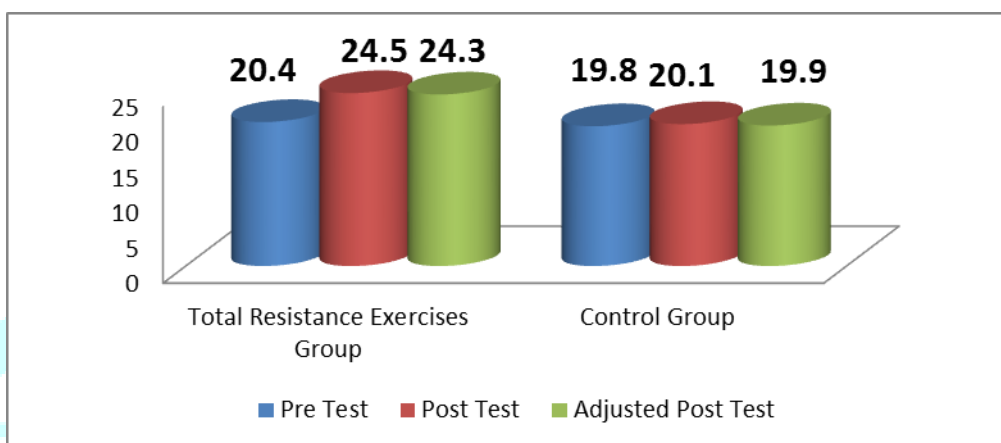
Table III: Analysis of Covariance of the Data on Strength Endurance of Pre and Post Tests Scores of Total Resistance Exercises and Control Groups

Test	Yogic Exercises group	Control Group	Source of Variance	Sum of Squares	Df	Mean Squares	Obtained 'F' Ratio
Pre Test Mean \pm S.D.	20.4 \pm 1.12	19.8 \pm 1.24	Between	0.004	1	0.004	0.032
			Within	3.52	28	0.125	
Post Test Mean \pm S.D.	24.5 \pm 1.22	20.1 \pm 1.22	Between	119.56	1	119.56	52.67*
			Within	63.56	28	2.27	
Adjusted Post Test Mean	24.3	19.9	Between	117.69	1	117.69	37.48*
			Within	84.72	27	3.14	

* Significant at 0.05 level of confidence.

(The table values required for significance at 0.05 level of confidence with df 1 and 28 and 1 and 27 were 4.20 and 4.21 respectively).

The table III shows that the adjusted post-test means of total resistance exercises group and control group are 24.3 and 19.9 respectively on strength endurance. The obtained “F” ratio of 37.48 for adjusted post-test means is more than the table value of 4.21 for df 1 and 27 required for significance at 0.05 level of confidence on strength endurance. The results of the study indicated that there was a significant difference between the adjusted post-test means of total resistance exercises group and control group on strength endurance. The graphical representation of data has been presented in figure-II
Figure- II: Bar Diagram showing the Pre-, Post- and Adjusted Mean Values of Total Resistance Exercises Group and Control Group on Shoulder Endurance



DISCUSSION

In case of physical fitness components i.e. Shoulder Strength and Strength Endurance the result between pre- and post-test for three days per week for 12 weeks training had been found significantly higher in total resistance exercise group in comparison to control group. This was possible because due to regular total resistance exercises which may also bring sudden spurt in physical fitness components in school girls. The finding of the present study had strongly indicates that total resistance exercises for three days per week for twelve weeks had significant effect on selected physical fitness components i.e. shoulder strength and strength endurance of school girls. Hence the hypothesis earlier set that any special training programme would have been significant effect on selected physical fitness components in light of the same, the hypothesis was accepted.

CONCLUSION'S

1. There was a significant difference between total resistance exercises group and control group on shoulder strength and strength endurance.
2. And also it was found that there was a significant improvement on selected criterion variables such as shoulder strength and strength endurance due to total resistance exercises.

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