

Learning Outcomes of Resistance Training on Motor Fitness Performance among Young Students

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ABSTRACT

Introduction: Learning is a continuous process. Learning resistance training professionally and training under qualified instructor is very important for the outcome of utmost benefits of fitness and health. Motor fitness is vital for the athletes and it is the ability of an athlete to achieve efficaciously in their respective sports field. Resistance training is beneficial for all athletes and important part of the athlete's training program (K.Azeem, 2014). The purpose of this investigation was to find out the learning outcomes of resistance training on motor fitness performance among young students. **Method:** A group of (N=60) subjects was selected randomly to participate in this study. The age of the participants was in the range of 18-24 years, resistance-training program employed for 12 weeks, two days in a week, 45 minutes of training per session. The subjects were segregated into two groups namely Group-A (n=30, experimental group), Group -B (n=30 control group). The resistance training employed on experimental group and control group not given any specific training. The pre and post tests were considered for this study was motor fitness components are as follows; speed (50M sprint), balance (stork balance test), explosive power (standing broad jump), agility (Illinois agility test). To compare the mean differences from pre to post test, mean, standard deviation, and t-test computed by the help of statistica software. **Results & Discussion:** Twelve weeks of resistance training protocol had revealed significant performance from pre to post-test among the participants with regard to motor fitness variables with mean, standard deviation and P-value i.e. 50M Sprint, (8.49,1.50) and (7.98,1.18), (P=0.12), balance (25.67, 10.35) and (35.50, 6.16), (P=0.00), Standing broad jump, (1.73,0.30) and (1.97,0.29), (P=0.01), Illinois agility run (20.55, 0.46) and (16.69, 0.72), (P=0.00). **Conclusion:** It is concluded that the influence of resistance training had shown significant performance among the young students with regard to the selected motor fitness test i.e. speed (50M sprint), balance (stork balance test), explosive power (standing broad jump), and agility (Illinois agility test) from pre to post test.

1. Introduction

Learning is a continuous process. Learning resistance training professionally and training under qualified instructor is very important for the outcome of utmost benefits of fitness and health. Motor fitness is vital for the athletes and it is the ability of an athlete to achieve efficaciously in their respective sports field. Moreover, resistance training is an essential variable of all fitness programs; especially for strength and power athletes and more for the

individuals who exercise for the health benefits. In fact, athletes in sports requiring strength and power, such as weight lifting, bodybuilding and sprinting most emphasize resistance training. Resistance training improves the jumping performance (Adams. K, & et al., 1992). Resistance training is beneficial for all athletes and important part of the athlete's training program (K.Azeem, 2014). Efficacy of resistance training performance-related benefits are enormous and the effects of resistance training on selected health-related measures including bone health body composition, and injury reduction should be documented by trainers and coaches (Arif.K, 2016). Most children and adolescents can safely obtain these health benefits when prescribed age appropriate resistance-training guidelines accordingly. Resistance exercise for healthy adults provides program design recommendations for muscle hypertrophy (ACSM, 2009). Resistance training descriptors that identify the exercise stimulus and recognized to have a significant effect on specific physical fitness effects (Faigenbaum AD, & et al., 2009). Resistance training serves as the active force for a healthy life style and is the solution for improving athletic performance in various sports disciplines (Behringer, 2010). Speed is the ability of an athlete to execute motor movements with high speed in the short period of time (Gamble, 2011). It was mentioned that the agility is the ability of an individual to change the position or direction quickly and effectively (Gamble, 2011). Balance is the ability of a person to control human body or to maintain equilibrium under static and dynamic conditions (Gamble, 2011). Power is the ability of a muscle to release maximum force in the shortest period of time (Gamble, 2011). Moreover, it was stated that muscular strength includes a variety of training modalities, including body weight exercises, elastic bands, plyometric exercises for (upper and lower body), multi machines, free weight machines and hydraulic machines (K. Azeem, 2014). Eight weeks of resistance training improves the lower body isometric strength among children (Moran & et al. 2017). Volume plays an important role in resistance training program for improving muscle strength and hypertrophy (Daniel A. Hackett & et al, 2018). Benefits of muscular strength and endurance are important for many reasons; increase the ability to do activities without getting tired, reduces the risk of sports injuries, maintains healthy body weight, improves and maintains health, stronger muscles and bones (K.Azeem, & et al., 2019).

The purpose of this investigation was to find out the learning outcomes of resistance training on motor fitness performance among young students.

2. Method

2.1 Selection of subjects

A group of (N=60) participants was selected randomly to participate in this study from the various sections of college undergoing physical education classes at King Fahd University of Petroleum & Minerals, Dhahran, Saudi Arabia during the year 2015-16. The subjects were segregated into two groups namely Group-A (n=30, experimental group), Group –B (n=30 control group). The age of the participants was between 18-24 years. The reason of this study was explained in detail and participant's doubts were addressed.

2.2 Experimental Design

The resistance-training program was employed for 12 weeks, 45 minutes of training per session, two days of training program in a week. The resistance training was employed on experimental group (N=30) and control group (N=30) was not given any specific training.

2.3 Procedure of testing

The pre and post tests were considered for this study was motor fitness components are as follows; speed



(50M sprint), balance (stork balance test), explosive power (standing broad jump), agility (Illinois agility test). A Pre and post-test was conducted before and after the 12 weeks training program. The training was given at the Gymnasium at stadium, King Fahd University of Petroleum & Minerals, Saudi Arabia. All the scores for pre and post-test were recorded for analyzing the data.

2.4 Statistical Analysis

To compare the mean differences between pre to post test, mean, standard deviation and t-tests were computed by means of Statistica Software. A significance level at 0.05 level was adjusted.

4. Results

Below table-1, shows the analysis of data for the motor fitness performance among the young students from pre to post test

Motor fitness components	Groups N=30	Pre-test		Post-test		P Value
		Mean	S.D	Mean	S.D	
50.M, Sprint	Experimental	8.49	1.50	7.98	1.18	0.12
	Control	8.63	1.26	8.61	1.24	0.06
Balance	Experimental	25.67	10.35	35.50	6.16	0.00
	Control	27.33	9.84	27.23	9.77	0.69
Muscular Power	Experimental	1.73	0.30	1.97	0.29	0.01
	Control	1.69	0.26	1.70	0.25	0.69
Agility	Experimental	20.55	0.46	16.69	0.72	0.00
	Control	20.59	0.50	20.60	0.51	0.12

50 M, Sprint performance among experimental group from pre to post-test with mean and standard deviation were (8.49, 1.50) and (7.98, 1.18) respectively. Control group with mean and standard deviation were (8.63, 1.26) and (8.61, 1.24) respectively.

Balance performance among experimental group from pre to post-test with mean and standard deviation were (25.67, 10.35) and (35.50, 6.16) respectively. Control group with mean and standard deviation were (27.23, 9.77) and (27.23, 9.77) respectively.

Performance of the muscular power among experimental group from pre to post-test with mean and standard deviation were (1.73, 0.30) and (1.97, 0.29) respectively. Control group with mean and standard deviation were (1.69, 0.26) and (1.70, 0.25) respectively.

Agility performance from pre to post-test among experimental group with mean and standard deviation were (20.55, 0.46) and (16.69, 0.72) respectively. Control group with mean and standard deviation were (20.59, 0.50) and (20.60, 0.51) respectively.

5. Discussion and Conclusion

This was evident from the twelve weeks of resistance training protocol is important for improving the fitness level among the participants. Moreover the data analysis revealed significant performance from pre to post-test among the subjects with regard to motor fitness variables i.e. 50M Sprint ($P=0.12$), balance ($P=0.00$), Standing broad jump ($P=0.01$), Illinois agility run ($P=0.00$).

The below earlier research studies are agreement with this present study;

Changes were find in the participants on the lower body power from pre to post test on the impact of resistance



training (Anderst. WJ, & et al., 1994). In earlier study, the results of analysis indicated that the ability to gain muscular strength on the effect of resistance training seems to increase with age and maturational status (Michael. B, & et al., 2010). (K.Azeem & et al, 2011) reveals effects of weight training improved power performance significantly. (Mohammed. J, 2014) reveals the effect of weight training on male athletes improves power performance significantly. (P.Arul D.P, 2014) in his study finds that the twelve weeks of resistance training improves muscular strength. (Arif.A.K, 2016) resistance training improved performance and related health benefits. (K.Azeem 2016) influence of different intensity of resistance training on selected Strength, Anaerobic power and explosive power among participants had shown significant performance. Plyometric and weight training improved the jump and reach performance significantly among the experimental group (Jaswant. S.T, & et al., 2016).

It is concluded that the influence of resistance training had shown significant performance among the young students with regard to the selected motor fitness test i.e. speed (50M sprint), balance (stork balance test), explosive power (standing broad jump), and agility (Illinois agility test) from pre to post test.

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