

Effect Of Package Training On Selected Physical Fitness Variables

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ABSTRACT

The purpose of the study was to find out the effects of package training on physical fitness variables of PG students of physical education. To achieve the purpose of the study, forty male M P Ed students of Kashmir University were selected as subjects at voluntary and their age were ranged between 20 to 25 years. The selected subjects were divided in to two equal groups of twenty subjects each. Group I underwent package training for three days per week for twelve weeks. Group II acted as control that did not participate in any special training programme apart from their regular activities as per their curriculum. The following physical fitness components namely Speed, Muscular Strength Endurance and Cardio Respiratory Endurance were selected as dependent variables. All the subjects of two groups were tested on selected dependent variables at prior to and immediately after the completion of training programme. The 0.5 level of confidence was fixed as the level of significance. T-test was used to find out the statistical significances of each age groups pre and post mean differences. The result of the study indicates due to varied packages of package (circuit training and plyometric training), Speed, Muscular Strength Endurance and Cardio Respiratory Endurance has been improved significantly.

Keywords package training, speed, muscular strength endurance and cardio respiratory endurance.

INTRUCATION

Sports training are a physical, technical, moral and intellectual participation of an athlete with the help of physical exercises. It is a planned process for the participation of athlete and players to achieve top level performance. Sports training are the basic form of preparation of sportsmen. Sport training is scientifically based and pedagogical process of sports perfection which through systematic effect on psycho-physical performance ability and performance readiness aims at leading the sportsmen to high and highest performance. Hardiyal Singh, Science of Sports Training.

PACKAGE TRAINING

Here the package training is the combination of Circuit and polymetric training, both have the following explanation.

CIRCUIT TRAINING

Circuit Training is an everlasting and evolving training exercise programme formed by Morgan and Anderson at the University of Leeds, England in 1953. It was developed to allow people to work at their own intensity while also training with others. In the original format, a circuit would comprise of 9 to 12 stations. http://en.wikipedia.org/wiki/circuit_training. A participant would move from one station to the next with little rest and performing an exercise for a set period of time or number of repetitions. Nine to Twelve stations were utilized in original format developed by Morgan and Anderson. Nowadays, this number differs due to the sketch of the circuit. Studies at Baylor University and the Cooper Institute show that circuit training is the most time efficient way to enhance cardiovascular fitness and muscle endurance. Studies show that circuit training helps individuals to achieve their goals and maintain them longer than other forms of exercise or diet. Recent research (Alcaraz et al., 2008, Alcaraz et al., 2011) has shown that healthy young adults could produce the same muscular force output in a session of high-resistance circuit (HRC) training.

PLYOMETRIC TRAINING

Plyometrics are bounding exercises in which maximum effort is expected while a muscle group is lengthening during eccentric and doing negative work. Plyometric exercises include any jumping exercise in which a landing followed by a jump occurs in a shortest period of time. In order to develop power, it links strength with speed. The different forms of plyometric exercises are jumping exercises, wall bar exercises, pull-ups, sit-ups, rope climbing, skipping etc. Arazi H, Mohammadi M (2014) muscular adaptations to depth jump plyometric training It is better to undergo this training after increasing the basic strength through resistance training, since it lays more stress on the muscular-skeletal system. The physical component of explosive power has a role in defense and offense skills. (Kosa-Q, 2008).

PHYSICAL FITNESS VARIABLES

It is a commonly accepted fact that the physical activity is the biological necessity in every human life. Skill- related physical fitness consist of those components of physical fitness that have a relationship with enhanced performance in sports and motor skills. The components are commonly defined as, arm strength, leg explosive power, and abdominal strength. The physical components are the main things that must be trained and developed by athletes, especially athletes who require sports components (Harsono, 2015).

- **Speed** ○ **Muscular strength endurance**
- **Cardio respiratory Endurance**

Speed

Speed is the ability to perform a movement in a short period of time. In running and walking, speed is the product of stride length and stride rate. It is a key component of a physical fitness since its wide application to many human activities. It is the maximal velocity that can be obtained by part or whole of the body. In some sports, the body as a whole does not move fast, but a part of the body does. For example, the hand and ball accelerate to great speed while the body as a whole merely changes its location in baseball pitching.

Muscular strength endurance

By technical definition, muscular endurance is the ability of a muscle or a group of muscles to continue to function under a heavy workload without undue fatigue, over a period of time. It is a crucial element of fitness for athletes such as distance runners, swimmers, cyclists and rowers. It's also important for success in many team sports like soccer, field hockey and Australian Rules football.

Cardio respiratory Endurance

Also known as Cardio-vascular fitness or aerobic capacity (fitness), the cardio-respiratory endurance is a key component of health-related fitness. The ability of heart, blood vessels and respiratory organs to supply fuel, especially oxygen, to the working muscles and the ability of the muscles in turn to take up oxygen and use the delivered oxygen to produce the energy required to continue the exercise (or work) in progress is known as cardio respiratory endurance.

METHODOLOGY

The subjects (N=40) selected for the study was segregated into two groups equally and randomly. Experimental Group I underwent package training and Experimental Group II acts as Control Group. The package training group had undergone with their respective training for one and half hour per day for Three days a week and for a period of twelve weeks.

The investigator uses True Experimental Design to conduct his research program. The researcher used Pretest–Posttest Groups Design. (Nelson et al., Research Methods in physical activity.601-04) The investigator had conducted Pre-Test Experiment on the subjects before exposing them to the training schedule, then after the subjects had undergone with their respective training schedule for one and half hour per day for Three days a week and for a period of twelve weeks. The posttests were conducted after the experimental periods for all the groups. The differences between the initial and final means of the selected variables had been the effect of package training on physical fitness of M P Ed male students of Kashmir University.

VARIABLES AND CRITERION MEASURES

VARIABLES	TEST ITEMS	NAME OF THE TEST
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PHYSICAL VARIABLES	<ul style="list-style-type: none"> † SPEED † MUSCULAR STRENGTH ENDURENCE † CARDIO RESPIRATORY ENDURENCE 	<ul style="list-style-type: none"> ○ 50mt Dash ○ Sit Ups ○ Coopers 12min Run Walk Test
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GENERAL STRUCTURE OF THE TRAINING PROGRAMMES

Experimental Group I	Package Training (PTG)
Experimental Group II	Control Group
Package Training: Training Duration for Package training One and Half Hours (90 minutes)	Warm up 15 minutes, Instruction Treatment (training) 60 minutes Cool Down, Correction and Clarification 15 minutes
Circuit Training Session per week	Three days (Monday, Wednesday & Friday)
Polymetric Training Session per week :	Three days per week (Tuesday, Thursday & Saturday)
Total Length of Training	Twelve weeks
Training Load Progression	Every four weeks

TRAINING PROGRAMME

The Experimental Group 1-as treated with package Training underwent the respective training schedule one and half hour per day in the morning session including warming up and cool down for six days a week for a period of twelve weeks. Load progression was adapted for every four weeks. The detailed training scheduled for each group in the form of tables was not given here due to the some limitations. Circuit training group performed 5 drills namely press up, sit-ups, abdominal crunch, squat jump and high knee jump. This Plyometric training group starts with 1set of 10 repetitions in the first four weeks and progressed to one set of 8 repetitions in the second four weeks and 3 sets of 6 repetitions in the last four weeks. 30sec rest was given in between the sets. As the intensity start with 60% for first four weeks, 10% of intensity was increased for every four weeks. Plyometric training group performed 5 drills namely bounds, hurdle hoping, single leg hoping, box jump, depth jump, This Plyometric training group starts with 1set of 12 repetitions in

the first four weeks and progressed to one set of 10 repetitions in the second four weeks and 3sets of 8 repetitions in the last four weeks. 30sec rest was given in between the sets. As the intensity start with 60% for first four weeks, 10% of intensity was increased for every four weeks.

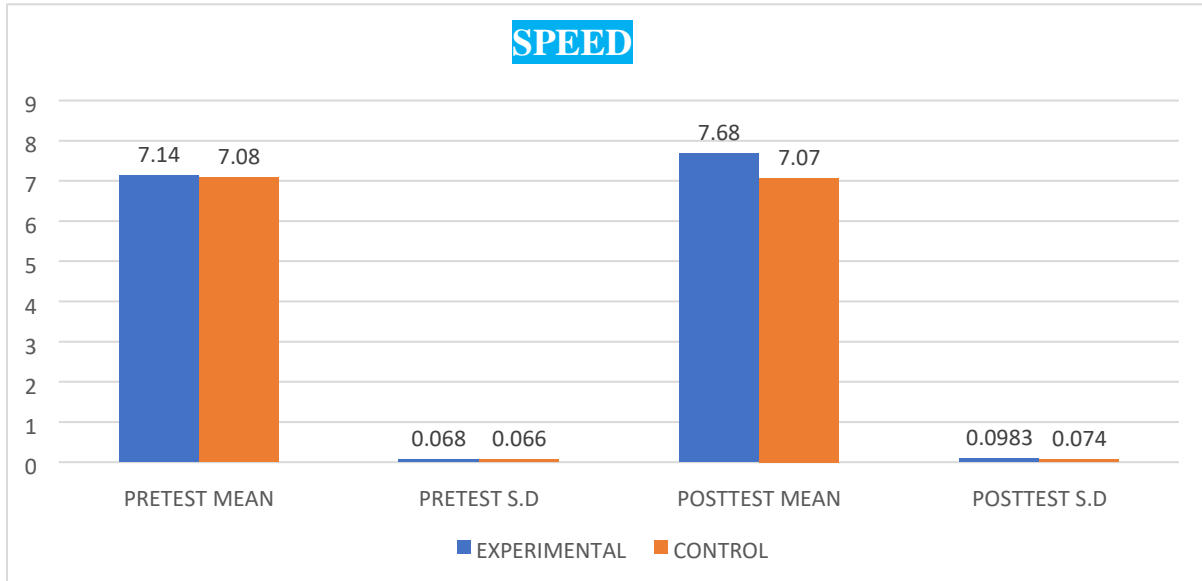
Statistical Analysis

The data collected in the study was subjected to statistical analysis with appropriate use of SPSS package. Central tendency was judged by calculating mean and variability was assessed by standard deviation. T-test was used to find out the statistical significances of each age groups pre and post mean differences. The level of significance was set at $p < 0.5$ level of confidence.

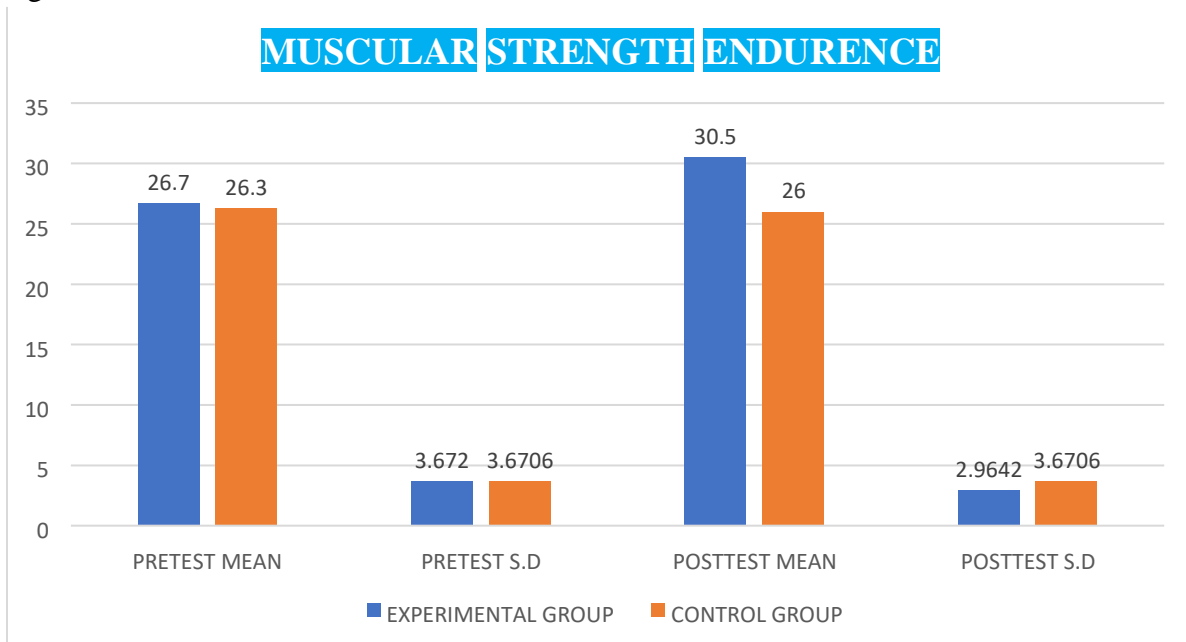
Descriptive Statistics of Selected Variables of University Level Boys

s.no	VARIABLES	GROUPS	PRE-TEST		POST TEST		T TEST
			MEAN	S. D	MEAN	S. D	
1	SPEED	EXPERIMENTAL	7.14	0.068	7.08	0.0983	6.2032
		CONTROL	7.08	0.066	7.07	0.074	0.75
2	MUSCULAR STRENGTH ENDURENCE	EXPERIMENTAL	26.7	3.672	30.5	2.964	8.543
		CONTROL	26.3	3.670	26.00	3.670	3.564
3	CARDIO RESPIRATORY ENDURENCE	EXPERIMENTAL	2048	157.6	2178	95.12	8.765
		CONTROL	2035	152.6	2025	95.12	6.765

GRAPH 1



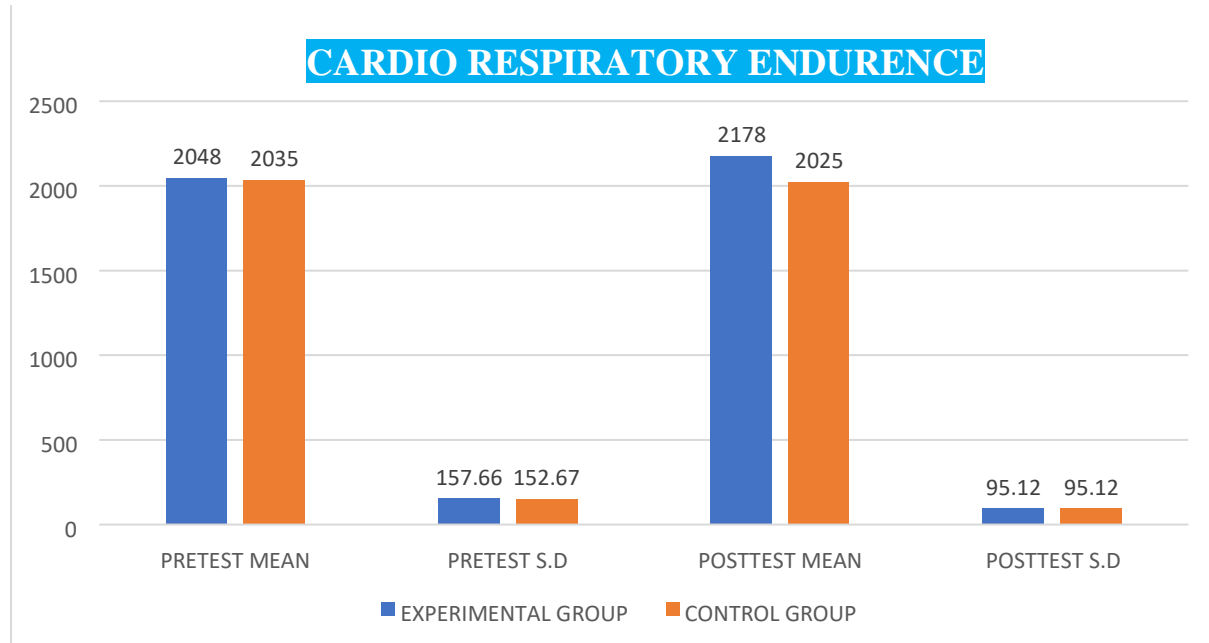
Graph- 1 presents the results of experimental group and the control group with regard to the variable speed. The descriptive statistics shows the Mean and SD values of speed of pre test and posttest of experimental group was 7.14 ± 0.0682 and 7.08 ± 0.0983 respectively, whereas, the Mean and SD values of speed of pre-test and post-test of control group was 7.08 ± 0.066 and 7.07 ± 0.074 . The “t” value in case of experimental group was 6.2032 and for control group it was 0.75. The ‘t’ value in case of experimental group 6.2032 as shown in the table above was found statistically significant.



GRAPH 2

Graph- 2 presents the results of experimental group and the control group with regard to the variable muscular strength endurance. The descriptive statistics shows the Mean and SD values of

muscular strength endurance of pretest and posttest of experimental group was 26.7 ± 3.672 and 30.5 ± 2.964 respectively, whereas, the Mean and SD values of muscular strength endurance of pretest and post-test of control group was 26.3 ± 3.67 and 26 ± 3.67 . The “t” value in case of experimental group was 8.543 and for control group it was 3.564. The ‘t’-value in case of experimental group shown in the table above was found statistically significant.



GRAPH 3

Graph- 3 presents the results of experimental group and the control group with regard to the variable cardio respiratory endurance. The descriptive statistics shows the Mean and SD values of cardio respiratory endurance of pretest and posttest of experimental group was 2048 ± 157.66 and 2178 ± 95.12 respectively, whereas, the Mean and SD values of cardio respiratory endurance of pretest and post-test of control group was 2035 ± 152.67 and 2025 ± 95.12 . The “t” value in case of experimental group was 8.765 and for control group it was 6.765. The ‘t’-value in case of experimental group shown in the table above was found statistically significant.

Conclusion

The researcher analyzed the collected data as per the purpose of study. The statistical analysis of the study stated that the Package Training had significantly improved the speed, muscular strength endurance and cardio respiratory endurance of subjects. Similar results were founded in the study carried out by M. Suresh Kumar (2014). The results are also in conformity with the study carried out by Sau gata sarkar (2013). So, it is concluded that motor abilities can be improved by package training. But training should be systematic, planned and scientific.

References;

- † Alauddin Shaikh. Effects of Plyometrics Training and Weight Training on selected Motor Ability Components among University Male Students. *International Journal of Advancements in Research & Technology*. 2012; 1:1-8.
- † Alcaraz ., 2008, Alcaraz ., 2011
- † Arazi H, Mohammadi M (2014) muscular adaptations to depth jump plyometric training: comparison of sand and land surface” *Interv Med Appl Sci*.6(3):125-30.
- † Attene G, Iuliano E (2014) “improving neuromuscular performance in young basketball players: plyometric vs. technique training”. *J Sports Med Phys Fitness*.; 55(1-2):1-8. † Brentano , 2008, Camargo ., 2008, Gettman ., 1979, Harber., 2004).
- † Cadore EL, Pinheiro.(2013) Neuromuscular, hormonal, and metabolic responses to different plyometric training. *J Strength Cond Res*.27(11):3001- 10.
- † Fernandez-Fernandez J, Sanz-Rivas D,(2015)The Effects of 8-Week Plyometric Training on Physical Performance in Young Tennis Players. *Pediatr Exerc Sci*. 2015 Aug 6.
- † Giné-Garriga M, Guerra M “The effect of functional circuit training on physical frailty in frail older adults; a randomized control trail” *J Aging Phys Act*.18(4):401-24.
- † Granacher U, Prieske O “the role of instability with Plyometric Training in Sub-elite adolescent soccer players” *Int J Sports Med*.36(5):386-94.
- † Harsono. (2015). *Kepelatihan Olahraga*. Bandung : Remaja Rosdakarya
- † Hardyal Singh, *Science of Sports Training* (New Delhi: DVS Publication, 1991):13-14.
- † Hofstetter MC, Mäder U, Wyss T(2012) “Effects of a 7-week outdoor circuit training program on Swiss Army recruits” *J Strength Cond Res*.26(12):3418-25. † <http://www.answers.com/topic/plyometric-training> † <http://en.wikipedia.org/wiki/circuit-training>.
- † Kosasih, Danny. (2008). *Fundamental Basketball*. Semarang : Karangturi Media
- † Kibele A, Classen C, (2014) “Metastability in plyometric training on unstable surfaces: a pilot study” *BMC Sports Sci Med Rehabil*.17;6:30.
- † Morgan and Anderson at the University of Leeds, England in 1953 † Nelson ,*Research Methods in physical activity*.602-4.
- † Patricia E Mosher. Effects of 12 Weeks of Aerobic Circuit Training on Aerobic Capacity, Muscular Strength, and Body Composition in College-Age Women. *The Journal of Strength and Conditioning Research*. 1994; 8(3):144- 148.¹

