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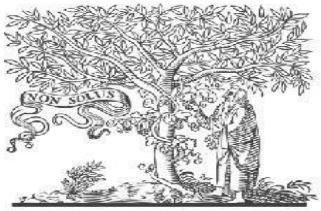

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ASSESSMENT OF PARCOURSE TRAINING IMPACT ON SELECTED BIO-MOTOR ABILITIES OF UNTRAINED MEN

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ABSTRACT

The purpose of this study was to examine the effect of eight weeks of supervised parcourse training on enhancing the quality of performance in leg strength, muscular strength, explosive power and anaerobic power. For this purpose 30 untrained male students, aged 18 to 22 years took part in the study. Subjects were randomly assigned to either parcourse training (n=15) or control (n=15) group. The training regimen lasted for eight weeks. The selected criterion variables were assessed using standard tests and procedures, before and after the training regimen. Analysis of covariance was used to determine the significant difference existing between pretest and posttest on selected criterion variables. The analysis of data revealed that eight weeks of parcouse training had an impact of 13.91% on muscular strength, 25.57% on explosive power and 18.23% on cardio respiratory endurance. These results suggest that parcouse training has significant influence in improving selected dependent variables.

Key words: Parcourse and Bio-motor

INTRODUCTION

A new concept of circuit training developed in Europe has been adopted recently in the united states and canada called parcourse. It consists of a series of stations set up over a 1 to 2 mile path, to provide a recreational exercise circuit for individuals of all ages and abilities (Prentice, 1994). Various fitness levels are designated which stress muscular strength and endurance, cardiorespiratory endurance and flexibility activities. parcourse is a technique for improving cardiorespiratory endurance that basically combines continuous training and circuit training. this technique involves jogging a short distance from station to station and performing a designated exercise at each station according to guidelines and directions provided on an instruction board located at that station. Parcourse circuit provides an excellent means for gaining some aerobic benefits while incorporating some of the benefits of calisthenics.

The par course was originally designed for outdoor interval training to accommodate broad scale community or group fitness. It is also an excellent decorative enhancement with its natural timber form construction. The individual

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exercise stations are usually installed at fixed intervals several hundred feet apart in a linear or looping circuit so that participants can walk or jog from one station to the next where they can perform a variety of designated exercises involving stretching, balance, agility, and strength. Each station is accompanied by a written description showing how to perform the exercise, together with figures showing the exercise from start to finish. Some stations might feature a simple freestanding calisthentic or stretching movement while others might feature a specific exercise on the timber form apparatus. The exercises are easily adaptable for all ages and can be modified to accommodate individual fitness levels and physical limitations.

Moving circuit consists of a path or course equipped with obstacles or stations distributed along its length for exercising the human body to promote good health. In general, fitness trails can be natural or manmade, located in areas such as forest, transportation rights-of-way, parks, or urban settings. Equipment exists to provide specific forms of physiological exercise, and can consist of natural features including climbable rocks, trees, and river embankments, or manufactured products (*stepping posts, chin-up and climbing bars*) designed to provide similar physical challenges. The degree of difficulty of a course is determined by terrain slope, trail surface (*dirt, grass, gravel, etc*.), obstacle height (*walls*) or length (*crawls*) and other features. To improve or maintain a desired level of physical fitness, there is a need to constantly administer an adequate training intensity while exercising. Parcourse training is one of the effective means to improve all round physical and cardiovascular fitness.

The parcourse can be a nice change of pace for diehard fitness enthusiasts too. It offers a challenging workout that can easily be intensified to different degrees of difficulty by simply progressing more quickly from one station to the next, increasing the number or repetitions at each station, or wearing "spats" (or other weighted wear) while performing the par course circuit. Even performing the course backwards can add a different dimension. Parcourse is a technique for improving cardio respiratory endurance that basically combines continuous training and circuit training. parcours circuits provide an excellent means for gaining some aerobic benefits while incorporating some of the benefits of calisthenics (prentice, 1994). The object of parcourse training is to develop total body fitness. parcourse training would promote muscular strength and endurance, cardio respiratory endurance and flexibility.

METHODOLOGY

Subjects and Variables

For the purpose of this study, thirty untrained male students from the department of physical education, Acharya Nagarjuna University, Guntur, Andhra Pradesh, India in the age group of 18 to 22 years were recruited, with their consent. The selected subjects were randomly assigned to both the parcourse training and control groups of 15 each.

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The selected criterion variables were assessed using standard tests and procedures, before and after the training regimen. The variables and tests used are presented in table-I.

Table I: Dependent Variables and Test

Sl. No.	Variables	Tests / Instruments	Unit
1.	Muscular Strength	Bent Knee sit-ups	Numbers
2.	Explosive power	Sarjent Jump test	Centimeter
3.	Cardio respiratory endurance	Cooper's 12 minutes R/W test	Meters

Training Protocol

The experimental group subjects underwent parcourse training progamme for three days a week for eight weeks. In the parcourse training regimens, a serious of eight exercise stations were formed in a standard 400 meters track. The subjects moved from one station to another, by jogging. The number of repetition for each exercises varied from ten to sixteen. The number of circuits varied between two-and-three for eight weeks, with a recovery interval of five minutes was given between circuits. The number of repetition was progressively increased once in two weeks.

Experimental Design and Statistical Procedure

The experimental design used for the study was random group design involving thirty subjects, who were divided at random into two groups such parcourse training group and control group of fifteen each. The data collected from the two groups prior to and after experimentation on muscular strength, explosive power and cardio respiratory endurance were statistically examined for significant differences, if any, by applying the analysis of covariance (ANCOVA) with the help of SPSS package. In determining the significance of 'F' ratio the confidence interval was fixed at 0.05 level.

RESULTS

The descriptive analysis of data collected on selected bio-motor abilities before and after eight weeks of parcourse training is presented in table-II.

Table II: Computation of Mean and Standard Deviation on Selected Bio-motor Abilities

Variables	Groups	Pretest		Posttest	
		Mean	SD	Mean	SD
Muscular Strength	Parcourse Training	24.87	2.29	28.33	3.68

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	Control	24.67	2.28	25.07	3.08
Explosive Power	Parcourse Training	45.68	2.68	57.36	3.71
	Control	46.73	2.78	48.13	2.18
Cardiorespiratory Endurance	Parcourse Training	2449.33	115.17	2647.33	84.55
	Control	2454.67	93.42	2497.33	65.63

The data collected from the two groups prior to and after experimentation on muscular strength, explosive power and cardiorespiratory endurance were statistically examined for significant differences, if any, by applying the analysis of covariance (ANCOVA) with the help of SPSS package and it is presented in table-III.

Table III: Analysis of Covariance on Selected Bio-Motor Abilities of Parcourse Training and Control Groups

Variables	Groups	Adjusted Mean	SoV	Sum of Squares	df	Mean Square	'F' ratio
Muscular Strength	Parcourse Training	28.13	B	248.83	1	248.83	45.57*
	Control	24.93	W	147.47	27	5.46	
Explosive power	Parcourse Training	55.42	B	332.62	1	332.62	156.16*
	Control	47.69	W	57.46	27	2.13	
Cardiorespiratory Endurance	Parcourse Training	2618.66	B	171153.3	1	171153.3	31.46*
	Control	2487.33	W	146890.3	27	5440.38	

Required table value for significance at 0.05 level of confidence for df of 1 and 27 is 4.21.
** Significant at 0.05 level.*

The findings of the study shows that significant difference existing between parcourse training and control group on muscular strength, explosive power and cardio respiratory endurance, since the obtained 'F' ratio of 45.57, 156.16 and 31.46 respectively were greater than the required table value of 4.21 for significance at 0.05 level of confidence for df of 1 and 27.

DISCUSSION

The literature thoroughly supports the evidence that a higher dose of parcourse training produces greater increases in bio-motor abilities. Studies have shown improvement in aerobic capacity from participation in circuit training (Kass & Castriotta, 1994; Peterson, Miller, Quinney, & Wenger, 1988). Kaikkonen and others (2000) observed significant improvement on cardiovascular and muscular fitness due to the effect of a 12-week low resistance circuit weight training. Gettman and others (1978) conducted a study to determine the changes elicited by circuit

weight training and running (RN) programs conducted 3 days per week for 20 weeks. It was concluded that the circuit weight training program was most specific in improving strength and changing body composition and aerobic capacity.

CONCLUSION

The result of this study demonstrated that, parcourse training with repeated bouts of a combination of physical exercise has significant impact on muscular strength, explosive power and cardiorespiratory endurance.

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