

EFFECT OF DIFFERENT SURFACES OF CIRCUIT TRAINING ON SPEED OF SCHOOL BOYS

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DOI: 10.26524/1522

ABSTRACT: Forty five boys in the age group of 13 to 14 years of Alagappa Model school, Karaikudi were selected at random and were divided randomly into three groups namely sand circuit training group, concrete circuit training group and control group. The experimental groups participated in the training programme for a period of 6 weeks. The sand circuit training group did circuit training on sand surface whereas concrete circuit training group did circuit training on concrete surface. During this period, the control group was let off without any training. The data were collected on speed, before training (pre-test) as well as after 6 weeks of training (post-test). Analysis of covariance was used to analyze the data. The result of the study clearly indicated that the sand circuit training group had improved the speed to a greater degree than concrete circuit training group.

Key words: training group, control group, speed, school boys

INTRODUCTION

Circuit training is a method of physical conditioning that employs both apparatus resistance training and callisthenic conditioning exercises. It provides a means of achieving optimal fitness in a systematic controlled fashion [1]. The intensity and vigor of circuit training are indeed challenging and enjoyable to the performer. This system produces positive change in motor performance, general fitness, muscular power, endurance and Speed [2].

Circuit training is an excellent way to simultaneously improve mobility, strength and endurance. The circuit training format utilizes a group of 6 to 10 strength exercises that are performed one exercise after another. Each exercise is done for a specified number of repetitions or for a prescribed time period before moving on to the next exercise [3]. The exercise within each circuit is separated by a longer rest period. The total number of circuits performed during a training session may vary from 2 to 6 depending on one's training level ie beginner or intermediate or advanced, one's period of training ie preparatory period or competition period

and one's training objective. In each circuit, the same muscle group must not be exercised in consecutive exercises [4-5].

METHODOLOGY

Forty five boys in the age group of 13 to 14 years of Alagappa Model school, Karaikudi were selected at random and they were divided randomly into three groups of 15 subjects each namely experimental group I - sand circuit training group, experimental group II - concrete circuit training group and group III - control group which was not given any training programme. The dependant variable was speed. Speed was measured in seconds by 50 yards dash. Experimental group I underwent circuit training on sand surface whereas experimental group II underwent circuit training on concrete surface. The different stations for both experimental group I and experimental group II were similar and the duration of exercises also was the same, only thing which differentiated both was the different surface. The training was carried out only on week days. Group III was the control group which did not participate in any training. There were six stations in the circuit training programme. In the first station high knee action was performed, push ups in the second station, back kicks in the third station, sit ups in the fourth station, tuck jumps in the fifth station, opposite of sit ups in the sixth station.

Pre- test was conducted for all the 3 groups in the selected physical and physiological variables. After 6 weeks of training programme, post-tests were conducted. The training programme was scheduled from 3:30pm to 4:30pm on all week days. ANCOVA statistical technique was employed to find out the adjusted mean difference of the treatment groups. When the study was significant, the scheffe's post hoc test was used to find out the paired mean difference.

ANALYSIS OF DATA AND RESULTS OF THE STUDY

The pre-test and post-test scores of speed was analyzed using analysis of covariance at 0.05 level of confidence.

Table – I showing the analysis of covariance on data of pre-test ,post-test scores and adjusted post test of speed

Means	Control group	Exp. Group - I	Exp. Group - II	SV	SS	df	MS	OF
Pre-test	8.59	8.61	8.49	B	0.136	2	0.068	0.208
				W	13.803	42	0.328	
Post-test	8.59	7.98	8.20	B	2.905	2	1.452	4.092*
				W	14.909	42	0.354	
Adjusted post-test	8.57	7.93	8.27	B	3.040	2	1.520	15.447*
				W	4.035	41	0.098	

*Significant at 0.05 level of confidence.

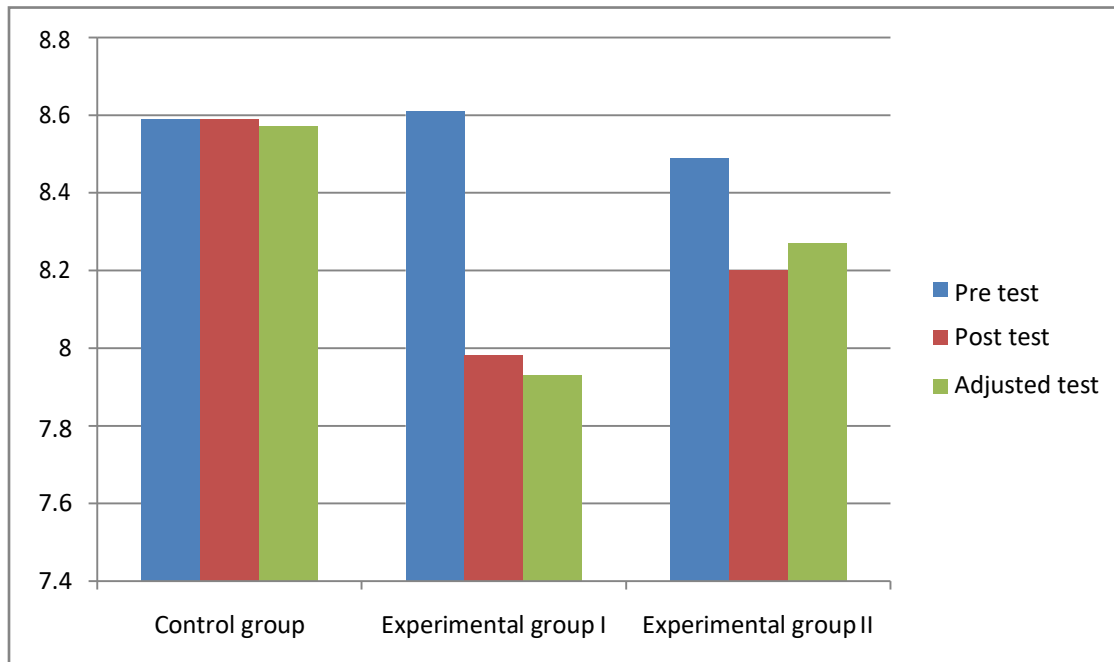
The adjusted post- test means were 8.57 for control group, 7.93 for experimental group I and 8.27 for experimental group II. The obtained „F“ ratio 15.447 was higher than the table „F“ ratio 3.22. Hence , the pre-test was significant at 0.05 level of confidence for the degree of freedom 2 and 41.

Table – I (a) showing Scheffe's post hoc test ordered adjusted final mean difference of speed

Control group	Exp. Group - I	Exp. Group - II	MD	CI
8.57	7.93	---	0.637	0.291
8.57	---	8.27	0.301	0.291
----	7.93	8.27	0.336	0.291

Table – I(a) shows that the difference between control group and experimental group I was 0.637, control group and experimental group II was 0.301, experimental group I and experimental group II was 0.336. The CI value 0.291 is greater than the table F ratio value. Hence all the three comparisons were significant. The results of the study indicates that circuit training on sand as well as concrete surface improved the speed of the subjects. When compared between the two experimental groups, it was found out that circuit training on sand improved speed better than the circuit training on concrete surface.

Figure-I
Bar Diagram of Speed



DISCUSSION

Taking into consideration the pre test and post test means, adjusted post test means were determined and analysis of covariance was done and the obtained F value was greater than the required value and hence it was accepted that circuit training on sand as well as circuit training on concrete surface improved the speed of the subjects. It may be due to the increase in activity level of glycolytic enzymes following the circuit training. When compared between the two experimental groups, it was found that circuit training on sand was better than the circuit training on concrete surface.

CONCLUSION

Within the limitations of the present study, the following inferences were drawn.

1. 6 weeks of training of both the sand circuit training group and the concrete circuit training group showed significant increase in speed.
2. Between the experimental groups, the sand circuit training group showed significant superiority in speed over the concrete circuit training group.
3. Whereas, the concrete circuit training group was seen to improve speed to a greater degree than the control group.

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