

EFFECTS OF CIRCUIT RESISTANCE TRAINING ON PHYSICAL VARIABLES OF SCHOOL LEVEL HIGH AND LONG JUMPERS



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Short Profile :

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ABSTRACT:

The purpose of this study was to find out the effects of circuit resistance training on physical variables of school level high and long jumpers. For the purpose of the study 30 subjects were assigned in to two group's namely experimental group(EG) and control group(CG). The subject's age ranged between 14 to 17 years. Subjects in the group I experimental group (EG) performed a circuit resistance training

program three days per week of training for a total of seven weeks. Group II acted as control group (CG), the subjects in control group were not engaged in any training program other than their regular work. The following variables were determined before and after training: Speed, Explosive power, Muscular strength endurance. All variables were found to significantly improve ($p < 0.05$) in response to the training programs. These data indicate that, a circuit resistance training program using instability training devices is as effective in school level high and long jumpers as a program executed under stable conditions for improving Speed, Explosive power, Muscular strength endurance. The subjects were free to withdraw their consent in case of feeling any discomfort during the period of their participation but there were no drop outs during the study.

KEYWORDS

Circuit Resistance Training, Speed, Explosive Power, Muscular Strength Endurance.

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INTRODUCTION :

Sports training are not a novelty or recent discovery. It existed both in ancient Egypt and later in Greece where people systematically trained for both military and Olympic endeavors. Today through training as in ancient times, the athletes prepare themselves for a definite goal. In order to elevate athletics performance, the main scope of training center's on increasing the athletes working capacity and skill capabilities as well as developing strong psychological traits. Though many methods prevail to develop the performance in hockey, the role of circuit training is an undisputed one. "Circuit training is the training programme in which an athlete moves from one exercise station another in a planned sequence in the shortest possible time"(Neal,1969). A typical hockey players must train for many years to refine the technique and to develop the physical fitness factors especially Muscular strength ,Speed, Explosive power, agility etc. .there are many types of training by which an athlete can improve the said physical fitness qualities. Resistance with Circuit training has provide to be very effective method for improving the Muscular strength Resistance with Circuit training is an effective and quick way to fit your workout into your busy day. Circuit training provides a high intensity cardio workout, along with resistance training. This is designed to target fat loss and lean muscle building. A Circuit is designed with a series of exercises performed in succession of each other. When one Circuit is complete you start the sequence over again with little to no break. To start you want to perform each exercise for 10 reps and 3 times through each Circuit. Remember to perform reps quickly and keep breaks as short as possible. The purpose of Circuit training is to keep moving, which pushes your body aerobically, while still challenging your strength.

METHODOLOGY

The purpose of the study was to find out the effects of circuit resistance training on physical variables of school level high and long jumpers. To achieve the purpose of the study, (N=30) school level boys were randomly selected from St. Michael's Higher Sec School, Mani Higher Sec School, ChavaraVithiyaBhavan Matriculation Higher Sec School, Coimbatore, Tamil Nadu. The age of the selected subjects ranged between 14 to 17 years. They were divided into two equals groups. The group I was named as Experimental group (EG) and group II was named as Control group (CG). The investigator did not made any attempt to equate the group. The experimental group was treated with circuit resistance training for three days per week for a period of seven weeks and control group was not given any treatment.

To carry out the study the investigator used two groups, Experimental group (EG) and Control group (CG)each group consists of 15 subjects. Both the groups were tested on selected criterion variables and the readings were recorded in their respective units, as pre-test scores. After pre-test Experimental group (EG) was treated with circuit resistance training for a period of seven weeks. After seven weeks of training both the groups were tested again on the selected criterion variables and the scores were recorded in their respective units as post test scores. The pre and post test were taken for analysis.

RESULTS AND DISCUSSION

The data collected on athletes were statistically processed and discussed on the effects of circuit resistance training on physical variables of school level high and long jumpers were statistically processed and discussed.

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TABLE-I
COMPUTATION OF 't' RATIO BETWEEN PRE AND POST TEST MEANS OF EXPERIMENTAL GROUP AND CONTROL GROUP ON SPEED

Group	Pre Test			Post Test			Mean Diff	't' Ratio
	Mean	SD	SEM	Mean	SD	SEM		
Experimental Group	7.07	.596	.154	6.43	.463	.119	.628	6.02*
Control Group	7.50	.636	.164	7.61	.490	.126	.628	1.68

*Significant 0.05 level of confidence (2.14)

The analysis of the table-I clearly reveals that, the obtained 't' ratio of circuit resistance training, the calculated t-value was 6.02* and 1.68 respectively. It had a significant effect in improving Speed at 0.05 levels. The increase in speed from pre to post training for the circuit resistance training group were significantly higher than the control group. 't' ratio required to be significant at 0.05 level was 2.14.

TABLE-II
COMPUTATION OF 't' RATIO BETWEEN PRE AND POST TEST MEANS OF EXPERIMENTAL GROUP AND CONTROL GROUP ON EXPLOSIVE POWER

Group	Pre Test			Post Test			Mean Diff	't' Ratio
	Mean	SD	SEM	Mean	SD	SEM		
Experimental Group	1.83	0.13	0.19	1.86	0.24	0.19	0.22	4.52*
Control Group	1.85	0.94	0.15	1.83	0.17	0.15	0.02	1.40

*Significant 0.05 level of confidence (2.14)

The analysis of the table-I clearly reveals that, the obtained 't' ratio of circuit resistance training, the calculated t-value was 4.52* and 1.40 respectively. It had a significant effect in improving Explosive Power at 0.05 levels. It increases in Explosive power from pre to post training for the circuit resistance training group was significantly higher than the control group. 't' ratio required to be significant at 0.05 level was 2.14.

TABLE-III
COMPUTATION OF 't' RATIO BETWEEN PRE AND POST TEST MEANS OF EXPERIMENTAL GROUP AND CONTROL GROUP ON MUSCULAR STRENGTH ENDURANCE

Group	Pre Test			Post Test			Mean Diff	't' Ratio
	Mean	SD	SEM	Mean	SD	SEM		
Experimental Group	2.68	0.117	0.002	2.71	0.115	0.002	0.03	4.93*
Control Group	2.55	0.22	0.09	2.51	0.30	0.09	0.04	1.61

*Significant 0.05 level of confidence (2.14)

The analysis of the table-I clearly reveals that, the obtained 't' ratio of circuit resistance training, the calculated t-value was 4.93* and 1.61 respectively. It had a significant effect in improving Muscular Strength endurance at 0.05 levels. The increase in Muscular Strength endurance from pre to post training for the circuit resistance training group were significantly higher than the control group. 't' ratio required to be significant at 0.05 level was 2.14.

DISCUSSIONS ON FINDINGS

The present study experimented that, the effect of circuit resistance training on physical variables of school level high and long jumpers. The result of this study indicated that, the circuit resistance training improves the physical variables such as Speed, Explosive Power, and Muscular Strength endurance. The findings of the present study had similarity with the findings of the investigations referred in this study.

CONCLUSION

From the results of this study, the following conclusions were drawn

1. It was concluded that, there was a significant mean difference on Circuit Resistance Training on Speed of school level high and long jumpers
2. It was concluded that, there was a significant mean difference on Circuit Resistance Training on Explosive Power of school level high and long jumpers.
3. It was concluded that, there was a significant mean difference on Circuit Resistance Training on Muscular Strength Endurance of school level high and long jumpers.

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