International Journal of Physical Education, Sports and Health 2023; 10(6): 260-261

P-ISSN: 2394-1685
E-ISSN: 2394-1693
Impact Factor (RJIF): 5.38
IJPESH 2023; 10(6): 260-261

www.kheljournal.com
Received: 11-07-2023
Accepted: 19-08-2023

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Effect of circuit training on leg explosive power among Schoolboys volleyball players

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Abstract
The purpose of the study was to find out the effect of circuit training on leg explosive power among school boys Volleyball players. To achieve this purpose of the study thirty school boys Volleyball ball players in Tiruvarur district were selected as subjects at random. Their age ranged between the 15 to 18 years. The selected subjects were divided in two equal groups fifteen each namely circuit training group and control group. Group I underwent circuit training for three days per week for twelve weeks whereas Group II acted as the control group who maintained their daily routine activities and no special training was given to them. The variables namely leg explosive power was selected as criterion variables. The subjects of the two groups were tested on leg explosive power by using vertical jump at prior and immediately after the training period. The collected data were analyzed statistically through analysis of covariance (ANCOVA) to find out the significant differences, if any between the groups. The 0.05 level of confidence was fixed to the level of significance which was considered as an appropriate. The result of study showed that there was a significant difference exist between circuit training group a control group on leg explosive power. And also there was a significant improveboyst on leg explosive power due to circuit training.

Keywords: ANCOVA, circuit training, volleyball player

Introduction
Circuit training is the combination of the two primary forms of training – Aerobic activity and resistance training. Aerobic activity is any form of exercise for which the body requires the use of oxygen to produce energy. Circuit training places a higher workload on the heart than traditional weight training. Excess post- exercise oxygen consumption was shown to be elevated after circuit weight training with a work out that used a minimal amount of time (30minutes). The circuits use body weight, dumbbles, swiss balls, medicine balls, agility ladders, jump ropes, and steps and are arranged in an order that is intended to reduce local fatigue by using alternating muscle groups, since females posses less absolute strength than males, it is an import finding that this type of training has also been found to significantly improve body image, VO2max, upper body strength, lower body hypertrophy and decrease body fat percentage among females. The most positive outcomes for females were in group settings and in settings where they could select the amount of weight to lift.

Methodology
The purpose of the study was to find out the effect of circuit training on leg explosive power among school boys Volleyball players in Tiruvarur district were selected as subjects at random. Their age ranged between the 15 to 18 years. The selected subjects were divided in two equal groups fifteen each namely circuit training group and control group. Group I under went circuit training for three days per week for twelve weeks, whereas Group II acted as the control group who maintained their daily routine activities and no special training was given them. The variables namely leg explosive power were selected as criterion variables. The Subjects of the two groups were tested on leg explosive power by using vertical jump at prior and immediately after the training period The collected data were analyzed statistically through analysis of covariance (ANCOVA) to find out significant differences, if any between the groups. The 0.05 level of confidence was fixed to test the level of significance which was considered as an appropriate.

Explosive power

The analysis of covariance on leg explosive power of the pre and post test scores of circuit training group and control group have been analyzed and presented in Table 1.

Table 1: Showed that the pre test mean values on leg explosive power for circuit training group and control group were 35.60 and 35.13respectively

Test/Group		Circuit Training group	Control Group	Source of varience	Sum of Square	Df	Mean Square	'F' Ratio
Pre Test	Mean	35.60	35.13	Between	1.63	1	1.63	1.19
	S.D	1.07	1.07	Within	35.33	29	1.26	
Post test	Mean	41.43	35.16	Between	294.53	1	294.53	207.35*
	S.D	1.08	1.18	Within	38.66	29	1.38	
Adjusted post test	Mean	37.50	35.27	Between	244.11	1	244.11	777.32*
				Within	8.44	28	0.31	

The table 1 Showed that the pre test mean values on leg explosive power for circuit training group and control group were 35.60 and 35.13respectively and the obtained 'F' ratio of 1.19 for pre test which was less than the required table value 4.30 with df 1 and 29 at. 05 level of confidence. The post thest mean values on leg explosive power for circuit training group and control group were 41.43 and 35.16 respectively and the obtained 'F' ratio of 207.35 for post test which was greater than the required table value 4.20 with df 1 and 29 at .05 level of confidence explosive power for circuit training group were 37.50 and 35.27 respectively. The obtained 'F' ratio of 777.32 for adjusted post test which was greater than the require table value 4.21 with df 1 and 28 for significance at. 05 level of confidence. Hence, the results of the study showed that there was a significance difference exists between circuit training group an control group on leg explosive power.

Results and Discussions

From the analysis of the data following discussion were drawn

1. The boys group namely circuit training had achieved significant improve boys t in speed and leg explosive power
2. Significant difference were found among the boys and central group towards improving the selected criterion variables of explosive power
3. Circuit training was found to be better improving the selected dependent variables leg explosive power when compared to the control group.

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