International Journal of Physical Education, Sports and Health 2022; 9(1): 159-160

P-ISSN: 2394-1685
E-ISSN: 2394-1693
Impact Factor (ISRA): 5.38
IJPESH 2022; 9(1): 159-160

www.kheljournal.com
Received: 22-11-2021
Accepted: 24-12-2021

Buddhadev Kandar
Research Scholar, Department of Physical Education, Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh, India

Corresponding Author:
Buddhadev Kandar
Research Scholar, Department of Physical Education, Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh, India

Effect of circuit training and plyometric training on explosive strength among Vishwavidyalaya level players

Buddhadev Kandar

Abstract
The purpose of the present study was to find out the effect of circuit training and plyometric training on selected physical fitness variables on the players of Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.). Forty five men players were selected as subjects. The subjects were aged between 20 to 25 years. They were divided into three equal groups of fifteen each, group 1.Underwent circuit resistance training, group 2.Underwent plyometric training and group 3. Acted as control that did not participate in any special training apart from their regular sports and games practices. The subjects were tested on selected criterion variable such as, explosive strength. The selected criterion variable such as standing broad jump. The analysis of covariance (ancova) was used to find out the significant differences if any, between the experimental groups and control group on selected criterion variable. The 0.05 level of confidence was fixed to test the significance, which was considered as an appropriate. The result of the present study has revealed that there was a significant difference among the experimental and control group on explosive strength.

Keywords: circuit training, plyometric training and explosive strength

Introduction
Physical fitness is most easily understood by examining these components, or elements, or parts i.e., (endurance, strength, speed, flexibility). Training has been explained as a programme of exercise designed to improve the skills and increase the energy capacities of an athlete for a particular event. Training has been a part of human life since ancient times. It denotes the process of preparation for some task. Through systematic training programme one can improve his fitness both physically and mentally. Training means are various physical exercises and their objective, methods and procedures, which are used for the improvement, maintenance and recovery of performance capacity and performance readiness. Physical exercises are the physical means of training. Circuit resistance training is some resistance exercise done by in a circuit interval training technique that minimizes rest between sets and exercises. It can consist of only weight training or alternating intervals of weight training and brief, high intensity cardiovascular exercise. Resistance training is an even broader term than weight training because resistance can be supplied by weights, machines, rubber strands and any number of other devices that resist the movement of the exerciser. The terms strength, weight and resistance trainings have all been used to describe a type of exercise that require to move (or attempt to move) against an opposing force usually presented by some types of equipment. Plyometric training also known as "jump training" or "plyos", are exercises in which muscles exert maximum force in short intervals of time, with the goal of increasing power (speed-strength). This training focuses on learning to move from a muscle extension to a contraction, in a rapid or "explosive" manner, such as in specialized repeated jumping. Plyometrics are primarily used by athletes, is defined as exercises that enable a muscle to reach maximum strength in as short time as possible. This speed strength ability is known as power. Although most coaches and athletes know that power is the name of the game, few have understood the mechanics, necessary to develop it. Plyometrics is a common training methodology used by competitive athletes to develop speed and power. Jumping, bounding, skipping, throwing or any basic recoil movement, which ballistically stretches muscles are characteristic of

plyometric drills, and are characteristic of motions found virtually in energy sport. Explosive strength is the ability to keep your muscle fibers turned on for an extended period of time against a resistance with a heavy resistance and longer distance explosive strength becomes key. Explosive strength is build up on a foundation of absolute strength. Most training cycles should end with explosive strength training. If you want to play explosive, you have train to explosive. Acceleration and exertion of force is the key.

Objective of the Study

The purpose of the present study was to find out the effect of circuit training and plyometric training on selected physical fitness variables on the players of Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.).

Methodology

Selection of Subjects

The present study consisted of Forty five men players were selected as subjects. The subjects were aged between 20 to 25 years.

Selection of Variables

After reviewing through all the scientific literature, journals, magazine and keeping feasibility criteria in mind the content of circuit training and plyometric training was selected for the purpose of the present study.

Criterion measures

The pre design of circuit training and plyometric training programme was carried out for a period of 8 weeks for five days in a week. They were divided into three equal groups of fifteen each, group one underwent circuit resistance training, group two underwent plyometric training and group three acted as control that did not participate in any special training apart from their regular sports and games practices. The subjects were tested pre training and post training on selected criterion variable such as, explosive strength. The selected criterion variable such as standing broad jump.

Statistical analysis of data

To find out the effect of circuit training and plyometric training on selected physical fitness variables on the players of Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.). The analysis of covariance (ancova) was used to find out the significant differences between the experimental groups and control group on selected criterion variable. The 0.05 level of confidence was fixed to test the significance, which was considered as an appropriate. All statistical function was performance with the help of SPSS v.20.0 software.

Result and Discussion of the study

Table 1: Mean Standard Deviation and 'F' Ratio of Circuit Resistance Training, Plyometric Training and Control Group on explosive strength.

Groups		Circuit Training	Plyometric Training	Control Group	F ratio
Pre-test	Mean	1.85	1.69	1.65	2.01
	S.D.	0.10	0.12	0.04	
Post-test	Mean	1.88	1.89	1.68	12.41*
	S.D.	0.11	0.12	0.05	

*significant at 0.05 level.

Table shows the analysed data of explosive strength pre-test means were 1.85 for the circuit resistance training group, 1.69 for plyometric training group and 1.65 for the control group. The resultant 'F' ratio is 2.01 was not significant at .05 levels indicating that the three groups were no significant variation. The post-test means were 1.88 for the circuit resistance training group, 1.89 for plyometric training group and 1.68 for the control group. The resultant 'F' ratio of 12.41 at .05 level indicating that was a significant variation. The results of the study indicate that there is a significant difference among circuit resistance training, plyometric training and control groups on the explosive strength. To determine which of the paired means had a significant difference.

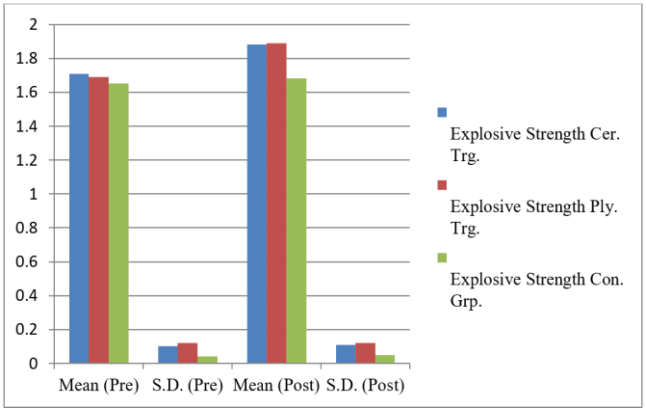

Fig 1: Graphical Representation of Circuit Resistance Training, Plyometric Training and Control Group on explosive strength

Conclusion and Finding

The results of the study showed that circuit resistance training and plyometric training groups have significantly differed on explosive strength when compared to control group, and between the training groups also significant difference was found. Hence it was concluded that both circuit resistance training and plyometric training was better method to increase the explosive strength but plyometric training is highly significance comparison than the circuit resistance training on explosive strength. Plyometric training is a specific work for the enhancement of explosive power. It improves the relationship between power and strength

References

1. Arnheim DD. Modern Principle of Athletic Training, St. Louis: The Mosby College Publishers, 1985.
2. Chu DA. Jumping into Plyometrics, Champaign, Illinois: Human Kinetics Publishers. 1992, 15-16.
3. Flack ST. Designing Resistance Training Programs Champaign, Illinois: The Human Kinetics Publisher. 1997, 87.
4. Kasturi S, Bhaskar PV. Effect of circuit resistance training and plyometric training on explosive strength among AP tribal school boys, International Journal of Physical Education, Sports and Health. 2018;5(1):63-64.
5. Singh A. *et al*., Essentials of Physical Education, New Delhi: Kalyani Publishers. 2003, 275-277.
6. Singh H. Science of Sports Training, New Delhi: D.V.S. Publication, 1991, 48.
7. Yadav SKS. A comparative study of speed and explosive strength of 14 to 20 years football players of rural and urban area of Bilaspur, International Journal of Physical Education, Sports and Health. 2016;3(5):323-325.