

“EFFECT OF CIRCUIT TRAINING ON ABDOMINAL MUSCULAR ENDURANCE AND LEG EXPLOSIVE POWER AMONG VOLLEYBALL PLAYER”

Dr. Jogendra Singh¹, Mr. Sanjay A Patel²

¹Research Guide Pacific Academy of Higher Education and Research University, Udaipur

²Research Scholar Pacific Academy of Higher Education and Research University, Udaipur

Abstract

The Circuit training may have significant development on physical fitness of human beings. So the researcher purposes to study the Effect of Circuit Training on Abdominal Muscular Strength and Leg Explosive Power among Volleyball players. For this purpose, 30 men players from different Colleges Affiliated to Veer Narmad South Gujarat University, Surat. For this purpose, 30 men players age group of 18 to 25 years were selected at random. They were distributed into two groups, group I was treated as, experimental group and group II was treated as control group. Experimental group was given six weeks Circuit Training and the control group was not given any treatment. Physical Fitness variables on Muscular Strength and leg explosive power it was assessed through Sit-ups, Vertical jump test. The data were collected before and after the training period and collected data was computed by dependent's T test in all cases level of significance was fixed at 0.05 level. The result concluded that there was significant development on Muscular Strength and leg explosive power level due to the influence of Circuit Training than the control group among volleyball player.

Keywords: Circuit training, Abdominal Muscular Strength and leg explosive power

Introduction:

Physical Education is an education of and through human movement where many of educational objectives are achieved by means of big muscle activities involving sports, games, gymnastic, Dance and Exercise.

Circuit Training

Circuit training is a grouping of strength training and endurance training. In a circuit-training workout you complete a group, or circuit, of exercises with little or no rest in-between. Usually, one circuit consists of 6 to 10 exercises. Each exercise is achieved for a set number of repetitions or period of time before moving to the next exercise. For example, you might do squats for 15 seconds, rest 15 seconds, and then do bench presses for another 15seconds followed by a sequence of additional exercises. Depending on your fitness level, you might complete one circuit or several circuits during each workout. You can exercise different muscle

groups to get a total-body workout. You can build strength and aerobic endurance. You can burn calories and lose weight. It is decent for people who have little time to exercise. Workouts can be finished in as little as 10 minutes. You can do circuit training at home or at a gym. You are less probable to become bored with your workout routine since you are doing a variety of exercises. You can make your workouts as hard or as easy as you like by modifying the amount of resistance and the length of the rest Interval.

The Benefits Of Circuit Training:

The demands of circuit training tend to prepare the body in the very even, all-round manner. Circuit training is an exceptional forum of exercise which aid in the prevention of injury. Circuit training is the best method to condition all body. Large number of players can be trained at same time. Circuit training can be totally personalized. Whether a person is a beginner, or an elite athlete, training can be modified as per his/her fitness level. Circuit training is time efficient. No wasted time between sets. It gives maximum results in minimum time. Circuit training doesn't need expensive equipment.

Methodology:

To find out the Effect of Circuit Training on Abdominal Muscular Strength and Leg Explosive Power among volleyball players, 30 men players from different Colleges Affiliated in Veer Narmad South Gujarat University, Surat in the age group of 18 to 25 year were selected at random. They were distributed into two groups, group I was treated as, experimental group and group II was treated as control group. Experimental group was given six weeks Circuit Training and the control group was not given any treatment. The following physical fitness was administered during the training period push-up, High knee action, squad jump, Bent Knee Sit-up, Burpees, Plank. Physical Fitness was selected as variable and it was assessed through Sit-ups, Vertical jump test. The data were collected before and after the training period and collected data was computed by dependent 't' test in all cases level of significance was fixed at 0.05 level.

“Table – 1.1”

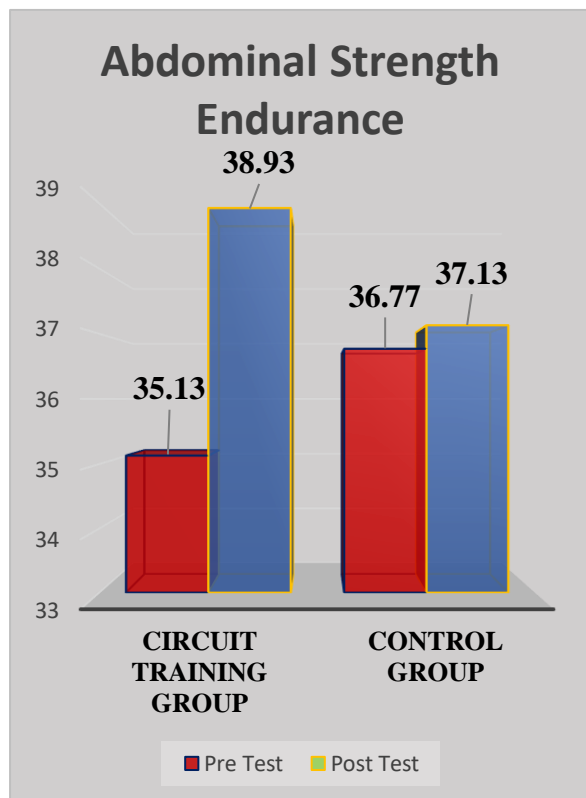
“Means, Stander Deviation and Dependent ‘T’ Test Values on Abdominal Strength Endurance of Circuit training and Control Groups”

| Group | Pre Test | | Post Test | | 't' test value | Sig. (2-tailed) |
|------------------------|----------|------|-----------|------|----------------|-----------------|
| | Mean | SD | Mean | SD | | |
| Circuit Training Group | 35.13 | 5.54 | 38.93 | 5.82 | 12.47* | 0.00 |
| Control Group | 36.77 | 5.49 | 37.13 | 5.82 | 1.65 | 0.11 |

*Significant at 0.05 level of Significance if p-value is < 0.05

“Table 1.1 presents the result of circuit training group and control group with regard to the physical fitness variable abdominal strength endurance. The descriptive statistics shows the Mean and SD value of abdominal strength endurance of pre-test and post-test of circuit training group was 35.13 ± 5.54 and 38.93 ± 5.82 respectively, whereas control group's was 36.77 ± 5.49 and 37.13 ± 5.73 .” “The obtain 't' value between the pre and post-test of circuit training and control group were 12.47 and 1.65 respectively, which's the obtained 'p

value’ of circuit training group (0.000.05) has no significant development in the performance of abdominal strength endurance because they have not received any specific training beyond their regular routine.” “The pre-test and post-test mean values of circuit training group and control groups on abdominal strength endurance are graphically represented in the figure 1. 1.



“Table – 1.2”

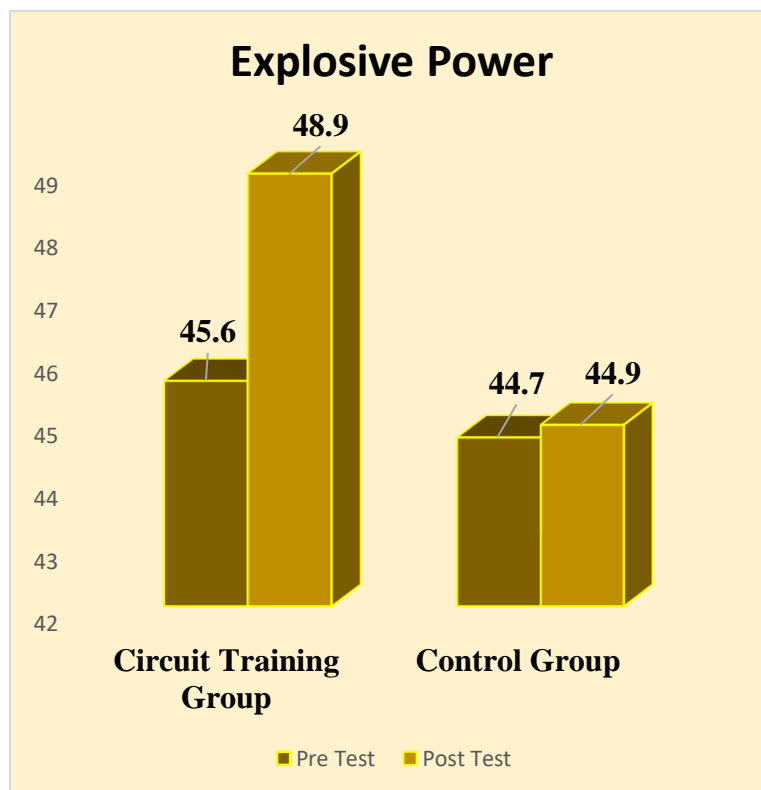
“Means, Stander Deviation and Dependent ‘T’ Test Values on Explosive Power of Circuit training and Control Groups”

| Group | Pre Test | | Post Test | | ‘t’ test value | Sig. (2-tailed) |
|------------------------|----------|------|-----------|------|----------------|-----------------|
| | Mean | SD | Mean | SD | | |
| Circuit Training Group | 45.60 | 9.35 | 48.90 | 9.86 | 10.13* | 0.00 |
| Control Group | 44.70 | 9.85 | 44.90 | 9.39 | 1.19 | 0.25 |

*Significant at 0.05 level of Significance if p-value is < 0.05

“Table 1.2, presents the result of circuit training group and control group with regard to the physical fitness variable explosive power. The descriptive statistics shows the Mean and SD value of explosive power of pre-test and post-test of circuit training group was 45.60±9.35 and 48.90±9.86 respectively, whereas control group’s was 44.70±9.85 and 44.90±9.39.” “The obtain ‘t’ value between the pre and post-test of circuit

training and control group were 10.13 and 1.19 respectively, which's the obtained 'p value' of circuit training group (0.000.05) has no significant development in the performance of explosive power because they have not received any specific training beyond their regular routine." "The pre-test and post-test mean values of circuit training group and control groups on explosive power are graphically represented in the figure1.2.



Conclusions

It was concluded that there was significant development in selected physical fitness components Abdominal Strength Endurance and Explosive Power due to circuit training among volleyball players.

REFERENCE

1. Morgan, R.E. and Adamson G.T. **Circuit Training**, (London: C. Bell and sons Ltd., 1972).
2. Dabir Qureshi R. Science of Sports Training, Sports Publication, 2009.
3. Sarkar, S. (2013). Effect of Circuit Training Program on Explosive Strength and Strength Endurance of School Going Students. Indian Journal of Research: vol. 2: 21-23.
4. Dhanaraj, S. (2014), An Impact of Circuit Training on Selected Physical Fitness Variables among College Hockey Players, *Global Research Analysis*, 3(4).

5. Kaliraj, T. (2019), Effect of Circuit Training on Selected Physical Fitness Variables among Athletes, *Bharathiar National Journal of Physical education and Exercise Science*, 10(3): 39-42.