

Effect Of 3 Weeks Circuit Training On Speed And Strength Among Students

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DOI: <https://doi.org/10.55968/ijems.v13i03.313>


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The aim of the study was to find out the effect of circuit training among students of master of physical education, Punjabi University, Patiala. The study was conducted on 15 students, male players only. Random sampling technique was used to select the data, for the purpose of assessment of their strength and speed, three weeks training program was designed. Pre-test post-test experimental group design was used for the investigation purpose. Mean, standard deviation, standard mean error, and t-test was used to find out the differences between pre and post test of M.PEd Students for their speed and strength variable. The results show significant difference for both the variables among Mped students.

Keywords: Circuit Training, Strength, Speed, Physical Fitness

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Nisha Saini, Student, Department of Physical Education, Punjabi University, Patiala, Punjab, India. Email: nisha.phyedu@gmail.com	Singh B, Saini G, Saini N. Effect Of 3 Weeks Circuit Training On Speed And Strength Among Students. IJEMS. 2024;13(03):41-45. Available From https://ijems.net/index.php/ijem/article/view/313	

Manuscript Received 09-12-2023	Review Round 1 12-12-2023	Review Round 2 07-01-2024	Review Round 3 02-02-2024	Accepted 01-03-2024
Conflict of Interest Nil	Funding Nil	Ethical Approval Yes	Plagiarism X-checker 15	Note Nil
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Introduction

Sport is a field where fitness and health both play a major role to bring achievements. The body of human being is so optimizing that it adapts and heals quickly even the given movement challenge by improving the efficiency with which the movement is performed. Its nature is very challenging, that if it decides something, they achieve it with full of dedication and that much spirit. Talking about physique and muscularity of an athlete, it's so hard to maintain it. They have to be fit always. Sport can bring money, glory, status and good will. Sport can also bring tragedy, grief and even death. A sport has an unclear role in society. To train an athlete with perfect schedule is very challenging task, if we talks about training and management even schedule of players; it depends upon the level of competition and several factors affecting like age, experience, motor abilities and learning. High levels of physical fitness maintain through heavy daily exercise. As global warming affect the environment, same as health affects individual performance. We have to protect it from several global disease that walks around, it can be psychological, physiological, spiritual or else. Once the lifestyle may change the body becomes habitual of it. The term physical fitness is an essential component in the concept of wellness, which defines as the ability to perform daily task vigorously and alertly without any fatigue.. Our ability to carry out daily tasks and routine physical activities without undue fatigue is called physical fitness. While too much reliance on technology could make us less fit, we see that we can improve physical fitness through the performance of different exercises (**Rebecca Gillaspay, 2022**)

Physical activity is crucial for all age, promotes growth of children, maintain health status of adults, along with prevention of aging, prevention of disease along with longevity of life. Every stage of life needs physical fitness, so that individual can perform well. Training is a complex behavior, because it framed under ranges from single day to many years, even though it's a journey of whole life. The time when sports were nothing more than an enjoyable recreation for Individual is irrevocably past. (**Ajmer Singh, 2016**)

Circuit training (CT) is a popular methodology in fitness and wellness programs, as well as in sports, because its modulation induces physiological

Benefits, such as strength, power, and cardio-vascular-respiratory adaptations. Although the current literature explained conflicting results of the addition of exercises to general and specific training in all levels of players as well as students, we hypothesize that proper CT including exercises could report positive effects on balance, strength, and power. So, this study aims to analyze the effects of a specific CT protocol, performed during the season time, strength and speed in students. The increase in sprint performance is thought to be related to the development of muscle mass, as well as the maturation of the nervous system and improved muscular nerve coordination. A circuit includes a variable number of exercises that come in succession with a specific time related to the adaptation to the relevant exercises. Each exercise should be general and/or sport-related and can involve the whole body or just a specific body compartment. A circuit may consist of a number of different exercises with or without apparatus. The circuit training format utilizes a group of 6 to 10 exercises that are completed one exercise after another. The total number of circuits performed during a training session varies from two to six depending on the training level like beginner, intermediate, or advanced, period of training like preparation or competition and training objective. Exercises are simple enough to make each athlete feel a sense of achievement, training induces greater cardio-respiratory and metabolic responses in soccer players and thus may be a time-effective training strategy.

Objectives of the study

- To evaluate the pre and post effect of circuit training on strength and speed on students.

Methodology

The study was conducted on male M.P.Ed students, Punjabi University, Patiala only, pre-test post-test experimental group design was used for the study to check 21 days of adaptation along with given training sessions, the age of the students fall in between 21 to 25 years where neither nutritional information was collected nor history of injury.

Selection of variables

The following components of physical fitness were selected for the present study.

01. Speed Strength

Procedure:

Firstly pre-test had been conducted to analyze pre report of fitness regarding their strength and speed, for that purpose two test batteries had been applied; standing broad jump ;50 meter sprint.

Then after schedule of 3 weeks of training had been setup, like in a week out of 6 days of training 3 alternate days (Monday, Wednesday, Friday) circuit training was given, and 3 days (Tuesday, Thursday, Saturday) were game specific.

After 3-weeks of training again two test batteries had been applied; standing broad jump to check their strength and 50-meter sprint for speed for which post-test had been conducted with a planned setup, the data had been collected and analyzed through statistical method successfully completing the exercise. Horizontal jump tests measured the explosive strength and power in the lower limb. These aspects are fundamental to the usual movements of soccer players, such as sprinting, jumping, and kicking a ball. For the SBJ, all subjects received standardized instructions that allowed them to begin the jump with bent knees and to swing their arms to assist in the jump. The role of the core musculature can optimize the performance during this test A line drawn on a hard surface served as the starting line. The length of the jump was determined using a tape measure. The distance of the best jump was measured, to the nearest 1 cm, from the line to the point where the heel closest to the starting line landed. If the subject fell backwards, the distance where the body part closest to the starting line touched the ground was measured as the jump’s length. **(Chu, 1992)**

Statistical Analysis

After the collection of relevant data, it was processed and analyzed with descriptive statistics. To compare the pre and post effect on selected physical fitness components with respect to Mean, Standard Deviation and t-test of the subjects. Results of the study are summed up in following tables and figures discussed as required.

Results:

Table.1 SHOWING MEAN AND S.D OF PRE AND POST STRENGTH AMONG STUDENTS OF M.P.Ed

Group	N	Mean	Standard deviation	Standard error of mean	t-value
Pre	15	2.2593	0.1896	0.0490	8.0233
Post	15	2.3420	0.2086	0.0539	

DF = 14 t=8,0233 N=15 p < 0,05

Table: 2 SHOWING MEAN AND S.D OF PRE AND POST SPEED AMONG STUDENTS OF M.P.Ed

Group	N	Mean	Standard deviation	Standard error of mean	t-value
Pre	15	6.6467	0.4465	0.1153	2.6706
Post	15	6.6347	0.4516	0.1166	

DF=14 t= 2.6706 N=15 P<0.05

FIG - 1 GRAPHICAL REPRESENTATION OF PRE AND POST STRENGTH – MEAN, STANDARD DEVIATION AMONG M.P.ED STUDENTS: SIGNIFICANT DIFFERENCE IN STATISTICAL VALUE <0.05

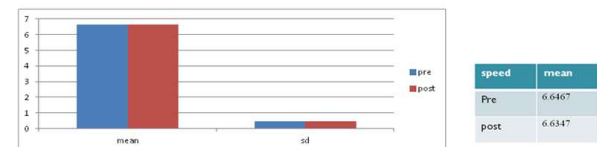
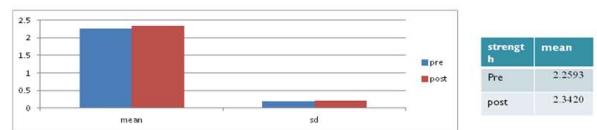


FIG - 2 GRAPHICAL REPRESENTATION OF PRE AND POST SPEED – MEAN, STANDARD DEVIATION AMONG M.P.ED STUDENTS: SIGNIFICANT DIFFERENCE IN STATISTICAL VALUE <0.05

Discussions and Findings:

Table 1 and **Table 2** shows the means, standard deviations, and differences within and between the groups in pre- and post-evaluation. The result of above study reveals that there is significant difference among pre and post effect of circuit training on speed and strength. Figure1 and figure 2 shows graphical presentation of group in pre and post evaluation of speed and strength. On the basis of analysis of the data, it is found that the earlier study of Patnaik, Tushar Ranjan supported the present study.

Conclusions

It is concluded that there is a significant different between pre and post speed and strength in above experimental group after training. Despite study limitations, our positive results showed that circuit training with exercises appears to be a good strategy for improving the performance of students during training period. To provide more evidence, it is important to continue investigating this kind of exercise program’s effects.

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