Publisher
www.theuniversityacademics.com

E-ISSN:2319-3050

International Journal of Research Padagogy and Technology in Education and Movement Sciences

2023 Volume 12 Number 03 JUL-SEP

Research Article

Sports Training

EFFECTS OF CROSS FIT TRAINING AND CIRCUIT TRAINING ON CRICKETERS

Kaur H.[1*], Singh S.[2]

DOI: https://doi.org/10.55968/ijems.v12i03.412

[1*] Hardeep Kaur, Assistant professor, , Govt. (State) College of Education, Patiala, Punjab, India.

[2] Sukhjivan Singh, Research Scholar, , Punjab University, , Chandigarh, India.

Training contributes tremendously towards the achievement of such aims of this area in sports. Sports and games are new trend in India. Explosive strength training is a part of every game for example cricket, tennis, basketball, boxing, volleyball, athletics, soccer rugby kabaddi wrestling etc. some of games are 80% to 90% dependent on explosive strength training and some are 30% to 50%.The traditional training name to improve explosive strength was plyometrics but now in current era cross fit has taken its place. Cross fit is combination of effective way to get fit. It is a fitness program that combines a wide variety of functional movements into a timed or scored workout. This research study has been conducted on male cricketers of age group from 19 to 25. The data was collected with the help of different tests-body fat percentage, dynamic strength index and vo2max under the 12 week training program of cross fit training and circuit training with different groups. The statistical analysis has been done through SPSS. The significance level was determined at p>0.05.

Keywords: Training, Cross fit training, Circuit training, Body fat percentage, Dynamic strength index, VO2Max.

Corresponding Author

Hardeep Kaur, Assistant professor, , Govt. (State) College of Education, Patiala, Punjab, India.

Email: hardeep.saini20@gmail.com

How to Cite this Article

Hardeep Kaur, Sukhjivan Singh, EFFECTS OF CROSS FIT TRAINING AND CIRCUIT TRAINING ON CRICKETERS. IJEMS. 2023;12(03):109-115.

Available From

https://ijems.net/index.php/ijem/article/view/412

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Conflict of Interest	Funding	Ethical Approval	Plagiarism X-checker	Note
NIL	NO	YES	13	

Introduction

The player's performance depends on various factors, but the main factor of players' performance is physical training. The word 'Training' denotes the process of preparation for some task. There is no doubt that, for players, "process" in physical training is quite as valuable as "product". Training contributes tremendously towards the achievement of such aims of this area in sports. Sports and games are new trend in India. So every athlete wants to become professional athlete and get excited for the professional level for his/her bright carrier. They try their best to get enrolled under the elite coaches as well as elite training programmer. Explosive strength training is a part of every game for example cricket, tennis, basketball, boxing, volleyball, athletics, soccer rugby kabaddi wrestling etc. The traditional training name to improve explosive strength was plyometrics but now in current era cross fit has taken its place. Cross fit is combination of effective way to get fit. It is a fitness program that combines a wide variety of functional movements into a timed or scored workout. We do pull-ups, squats, pushups, weightlifting, gymnastics, running, rowing, and a host of other movements. Through cross fit we can not only improve explosive strength rather we can improve explosive strength, endurance, speed, coordination, VO_2 max side by side set optimum body fat percentage.

According to (Glassman & Staff, 2010) Cross fit is a branded fitness regimen created by Greg Glassman. It is a registered trademark for it. Which founded by Glassman and Lauren Jenai in 2000. Cross fit is promoted as both a physical exercise philosophy and a competitive fitness sport, incorporating elements from high intensity interval training, Olympic weight lifting, plyometrics, power lifting, gymnastics, girevoy sport, calisthenics, strongman and other exercises. It is practiced by members of over 13000 affiliated gyms, roughly half of which are located in the United States and by individuals who complete daily workouts. Greg Glassman and Lauren Jenai founded cross fit in 2000. The company was conceived a few years earlier in 1996 as cross fit. The original cross fit gym is in Santa Cruz California and the first affiliated gym was cross fit north in Seattle Washington there were 13 by 2005 and today there are more than 13000. Coaches associated with cross fit include Louie Simmons, John Welbourn, Bob Harperand Mike Burgener. Glassman obtained complete control over the company after a divorce with Lauren. Lauren tried to sell her share in the company to an outside party after the divorce settlement. But Glassman bought it with a million loan from summit partners. Cross fit is one of the biggest booming fitness trends of recent years. It is something of a phenomenal success in terms of how it has promoted the idea of whole body functional fitness. The basic idea rather than specialise and focus in on one fitness area such as running or weight lifting cross fit is about creating a universally athletic all rounder.

By (R. E. Morgan et. all, 2021) Circuit training is a form of body conditioning that involves endurance training, resistance training, high-intensity aerobics, and exercises performed in a circuit, similar to high-intensity interval training. It targets strength building and muscular endurance. An exercise circuit is one completion of all set exercises in the program. When one circuit is completed, one begins the first exercise again for the next circuit. Traditionally, the time between exercises in circuit training is short and often with rapid movement to the next exercise. The program was developed by R.E. Morgan and G.T. Anderson in 1953 at the University of Leeds in England.

Explain in (Bayati, 2011) Body fat measurements and the measuring tape are recognised as superior methods for measuring weight loss. When one declares that they want to lose weight, what they often mean is that they want to lose fat. So now that you have had your body fat percentage measured, what does the number really mean, your body fat percentage is simply the percentage of fat the body contains? If you are 150 pounds and 10% fat it means that your body consists of 15 pounds fat and 135 pounds lean body mass (bone, muscle, organ tissue, blood and everything else). A certain amount of fat is essential to bodily functions. Fat regulates body temperature, cushions and insulates organs and tissues and is the main form of the body's energy storage. Knowing your body fat percentage can also help you determine if your weight loss goals are realistic. Remember weight loss doesn't always mean fat loss.

The dynamic strength index (DSI) is defined as the ratio between peak forces produced during dynamic and isometric tasks. The DSI is often used to assess

The current training status and to identify performance deficits of athletes. With respect to lower-body assessments, DSI testing typically involves the countermovement jump (CMJ) and isometric mid thigh pull (IMTP)—the resulting DSI is extremely reliable and has low variability. Researchers and practitioners have proposed DSI thresholds to inform training foci. Specifically, it has been suggested that athletes with a DSI below 0.60 should focus on training the athlete's capacity to express their strength during dynamic tasks, whereas athletes with a ratio above 0.80 should focus on training maximal force production. Research suggests that DSI is related to CMJ curves using temporal phase analysis and that DSI can be modified with training (e.g., a decrease in DSI is achieved with a focus on training maximal strength. Dynamic strength index therefore seems to be a useful variable, which can help assess and track an athlete's capacity to express force during dynamic tasks.

Explain by (Shete et al., 2014) Aerobic capacity of athletes is an important element of success in sports achievements. VO_2 max refers to the intensity of aerobic process and actually denotes the maximum capacity to transport and utilise oxygen during exercise done at increasing intensity. VO_2 max is the highest rate of oxygen consumption attainable during maximal exercise. It reflects physical fitness of an individual having athletic capacity. Maximal oxygen uptake as a measure of aerobic capacity has been determined as the international standard of physical activity. The basic unit of measuring the maximal oxygen uptake is its absolute value expressed in liters or milliliters per minutes. However, the absolute value is highly affected by body weight; so, it is often expressed as milliliter /kg/minutes. The reduction in the physical activity affects body composition factors like body fat percentage, body mass index and body muscle mass. There are close relationships between the body composition factors and aerobic, cardiovascular fitness. With decrease in body fatness, there is increase in aerobic fitness. Recent studies suggest that even in young, physically, highly active men with an obviously optimal lifestyle; a lower BMI is associated with more risk profile for vascular disease. For young, active sportspersons all these factors are concerned for their cardiovascular risk profile.

Significance of The Study

The significant of the study will contribute towards the cross fit training and circuit training effects on college cricketers on body fat percentage, dynamic strength index and VO_2 Max. The finding of the study may provide the criteria of selecting potential in sports and games. It may help physical education teachers, personal trainers and cross fit coaches to develop sound training besides devising remedial training programs. The study may help the trainers and coaches by way of informing them about the physical fitness components like body fat percentage. The present study will be very significant in the process of the activities and performer. The study may help in further research and investigation regarding factors which affects the physical performance of college level athletes.

Objectives of The Study

01. To assess the effect of cross fit training and circuit training on body fat percentage of cricketers.
02. To assess the effect of cross fit training and circuit training on dynamic strength index of cricketers.
03. To assess the effect of cross fit training and circuit training on vo2max of cricketers.

Hypotheses of the Study

01. It is hypothesized that there is no significant difference between cross fit training and circuit training on body fat percentage of cricketers.
02. It is hypothesized that there is no significant difference between cross fit training and circuit training on dynamic strength index of cricketers.
03. It is hypothesized that there is no significant difference between cross fit training and circuit training on vo2max of cricketers.

Delimitation of The Study

01. The study will be delimited with athletes of Lovely Professional University, Phagwara Punjab.
02. Study is delimited to 12 male cricketers.
03. The study will be delimited to male 19 to 25 year of age.

Methodology

Researcher was used simple

Random sampling technique for the selection of the sampling and 12 (twelve) cricketers were selected from lovely professional university, Phagwara, Punjab. These athletes were divided into two (cross fit training and circuit training) groups and three dependant variables (body fat percentage, dynamic strength index, Vo2max) were used to collect date of the cricketers. There was a training program of twelve weeks, group A undergo the training of cross fit and group B for circuit training. After the twelve weeks of training, the data was collected and statistically analyses for the results. The researcher differentiated between the training programs and came to known that which training was much better.

Data Collection

After 12 weeks of different trainings, researcher took the data. The data of the individuals were classified, tabulated and statistically analyzed to test the hypotheses through SPSS(Statistical Package for the Social Sciences).

Results and Discussion

Researcher took data of post test after training program of 12 week on basis cross fit training and circuit training. The statistical analysis was done by the investigators through SPSS and the conclusions are as below:

HYPOTHESIS-1: It is hypothesized that there is no significant difference between cross fit training and circuit training on body fat percentage of cricketers.

Table-1 Effect of Cross Fit Training and Circuit Training on Body Fat Percentage of cricketersTable-1: shows descriptive statistics for the two datasets. The sample mean and sample standard deviation obtained from the dataset for cross fit training are 21.5333 and .28048 respectively. The standard error that is used in calculating the test statistic for the test is found to be .11450. The sample mean and sample standard deviation obtained from the dataset for circuit training are 22.9833 and .44907 respectively. The standard error from this dataset is .18333. (Enclosed as Annexure 01)

Table-2 Independent Samples Test (Body Fat Percentage)

An independence sample t-test was conducted to compare body fat percentage for cross fit training and circuit training. There were significant difference [t (10) = -6.708, p= .001) in the scores

With mean score for cross fit training (Mean= 21.5333, SD= .28048 was lower than and circuit training (Mean=22.9833, SD= .44907). The magnitude of the differences in the mean (mean difference = -1.45000 at 95% Confidence Interval of the Difference -1.93162 to -.96838 was significant. (Enclosed as Annexure 02)

Hence the hypothesis "*There is no significant difference between cross fit training and circuit training on body fat percentage of cricketers*" is rejected.

HYPOTHESIS-2: It is hypothesized that there is no significant difference between cross fit training and circuit training on dynamic strength index of cricketers.

Table-3 Effect of Cross Fit Training and Circuit Training on Dynamic Strength Index of cricketers

Table- 3: Group statistics, shows descriptive statistics for the two datasets. The sample mean and sample standard deviation obtained from the dataset for cross fit training are .5967 and .05046 respectively. The standard error that is used in calculating the test statistic for the test is found to be .02060. The sample mean and sample standard deviation obtained from the dataset for circuit training are .5052 and .06876 respectively. The standard error from this dataset is .02807. (Enclosed as Annexure 03)

Table-4: An independence sample t-test was conducted to compare the dynamic strength index for cross fit training and circuit training. There were significant difference [t (10) = 2.628, p= .025) in the scores with mean score for cross fit training (Mean= .5967, SD= .05046 was higher than and circuit training (Mean=.5052, SD= .06876). The magnitude of the differences in the mean (mean difference = .09150 at 95% Confidence Interval of the Difference .01391 to .16909 was significant. (Enclosed as Annexure 04)

Hence the hypothesis "*There is no significant difference between cross fit training and circuit training on dynamic strength index of cricketers*" is rejected.

HYPOTHESIS-3: It is hypothesized that there is no significant difference between cross fit training and circuit training on vo2max of cricketers.

Table-5 Effect of Cross Fit Training and Circuit Training on VO2Max of cricketers

Table- 5: Group statistics, shows descriptive statistics for the two datasets. The sample mean and sample standard deviation obtained from the dataset for cross fit training are 30.9223 and 2.55402 respectively. The standard error that is used in calculating the test statistic for the test is found to be 1.04267. The sample mean and sample standard deviation obtained from the dataset for circuit training are 45.6005 and 2.83256 respectively. The standard error from this dataset is 1.15639. (Enclosed as Annexure 05)

Table-6: An independence sample t-test was conducted to compare the vo2max for cross fit training and circuit training. There were significant difference [t (10) = -9.427, p= .001) in the scores with mean score for cross fit training (Mean= 30.9223, SD= 2.55402 was lower than and circuit training (Mean=45.6005, SD= 2.83256). The magnitude of the differences in the mean (mean difference = -14.67817 at 95% Confidence Interval of the Difference -18.14749 to -11.20884 was significant. (Enclosed as Annexure 06)

Hence the hypothesis "*There is no significant difference between cross fit training and circuit training on vo2max of cricketers*" is rejected.

Conclusion

The study in hand was carried out by the investigators that 12 week of Cross fit training has positive effect on body fat percentage and dynamic strength index, where as circuit training has shown very positive result on vo2max

Annexure

Annexure 01

Table-1

Effect of Cross Fit Training and Circuit Training on Body Fat Percentage of cricketers

Group Statistics

	Group	N	Mean	Std. Deviation	Std. Error Mean
Score	Cross fit Training	6	21.5333	.28048	.11450
	Circuit Training	6	22.9833	.44907	.18333

Annexure 02

Table-2

Independent Samples Test (Body Fat Percentage)

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Score	Equal variances assumed	1.721	.219	-6.708	10	.001	-1.45000	.21615	-1.93162	-.96838
	Equal variances not assumed			-6.708	8.386	.001	-1.45000	.21615	-1.94449	-.95551

Annexure 03

Table-3

Effect of Cross Fit Training and Circuit Training on Dynamic Strength Index of cricketers

Group Statistics

	Group	N	Mean	Std. Deviation	Std. Error Mean
Score	Cross fit Training	6	.5967	.05046	.02060
	Circuit Training	6	.5052	.06876	.02807

Annexure 04

Table-4

Independent Samples Test (Dynamic Strength Index)

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Score	Equal variances assumed	.365	.559	2.628	10	.025	.09150	.03482	.01391	.16909
	Equal variances not assumed			2.628	9.175	.027	.09150	.03482	.01296	.17004

Annexure 05

Table-5

Effect of Cross Fit Training and Circuit Training on VO_2Max of cricketers

Group Statistics

	Group	N	Mean	Std. Deviation	Std. Error Mean
Score	Cross fit Training	6	30.9223	2.55402	1.04267
	Circuit Training	6	45.6005	2.83256	1.15639

Annexure 06

Table-6

Independent Samples Test (VO_2Max)

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Score	Equal variances assumed	.066	.803	-9.427	10	.001	-14.67817	1.55705	-18.14749	-11.20884
	Equal variances not assumed			-9.427	9.895	.001	-14.67817	1.55705	-18.15250	-11.20083

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