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Effect of cricket specific fitness training program on explosive strength and speed among college level men cricketers of J&K state

Zahoor Ahmad Bhat and Dr. K Sreedhar

Abstract

Cricket is now a major international sports enjoyed by millions of spectators worldwide. With the introduction of one day cricket and more recently twenty 20, the game has gone through major changes and the physical demands made on a cricketer's body have also increased dramatically and the cricketers are exposed to more demanding schedules, with longer period of time for training and practicing. The purpose of the present study was to determine the effect of cricket specific fitness training on explosive strength and speed among college level men cricket players. Forty male students ($n = 40$) were randomly selected from kulgam college of J&K state as subjects and the age was ranged between 19 and 23 years. The selected subjects were randomly assigned into two equal groups namely control group (CG) and the experimental group (EG) with equal strengths of twenty ($n= 20$) each. Experimental training group underwent cricket specific fitness training programme for twelve weeks for five days per week and two sessions on each day. The control group did not involve in any special training apart from their regular activities. The explosive strength and speed were taken as a criterion variable for the present study and they were measured by standing broad jump and 50 metres run respectively. Analysis of variance (ANOVA) was used to analyse the collected data. The results revealed that that the cricket specific fitness training was made significant improvement ($p \leq 0.05$) in Explosive strength and Speed of the selected subjects. The level of confidence was fixed at 0.05 in all cases.

Keywords: Fitness training, explosive strength, speed, cricket

Introduction

Cricket is basically a bat and ball game played between two teams of eleven players. Cricket is a popular team game in most commonwealth countries. In past it was played solely in a specific season. But its popularity has gained tremendous momentum since last three decades and now it is played throughout the year. The cricketers are exposed to more demanding schedules, with longer period of time for training and practicing (Davies et al., 2008) ^[6]. Speed is a scalar quantity that refers to the magnitude of its velocity. Speed can be thought of as the rate at which an object covers distance. A fast-moving object has a high speed and covers a relatively large distance in a short amount of time. Speed efficiency covers both the range of motion of the athlete and the deliberateness of the athlete's movement. A flexible athlete will have improved speed efficiency because the body will be able to move through the optimal range of motion with less drag from a tight muscle. Also, by being flexible, an athlete can utilize the optimal movement patterns that will lead to increased stride length. Speed is the capacity of moving a limb or part of the body's lever system or the whole body with the greatest possible velocity (Dick, 1992) ^[4]. Explosive strength is the ability to keep the muscle fibers tuned 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 upon a foundation of strength. Most training cycles should end with explosive strength training. Sports specific training is basically fitness and performance training designed specifically for sports performance enhancement and which include areas such as strength, speed, power, endurance, flexibility, mobility, agility, mental preparedness (including goal setting), sleep, recovery/regeneration techniques and strategies, nutrition, rehabilitation, rehabilitation and injury risk reduction. Even though cricket is the most popular game in India, very few

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scientific research were done on sports training on performance related variables, so thus study was taken to determine the effect of cricket specific fitness training program on explosive strength and speed among college level men cricketers of J&K state.

Materials and Methods

The present study was to determine the effect of cricket specific fitness training on selected explosive strength and speed among college level men cricket players. Forty cricket players (N = 40) were randomly selected as subjects from Government Degree College Kulgam, of Jammu and Kashmir, state. The age was ranged between 19 and 23 years. The selected subjects were randomly assigned into two equal groups namely experimental group (EG) and the control group (CG) for the strengths of twenty (N=20) each. Experimental training group underwent cricket specific fitness

training programme for twelve weeks for five days per week and two sessions on each day. The control group did not involve in any special training apart from their regular activities. The explosive strength and speed were taken as a criterion variable for the present study and they were measured by standing broad jump and 50 metres run. The training programme consisted of two training duration (4 weeks of early pre season followed by 8 weeks of late pre season). In the early pre season 60% of training duration was dedicated to fitness development (36 hours) and 40% of training duration for basic skills (24 hours). In the late pre season 40% of training duration was dedicated to fitness development (48hours) and 60% of training duration for advance skills. The collected data were statistically examined by analysis of variance (ANOVA). The confidence level was fixed at 0.05 levels, which is appropriate to the present study.

Table 1: Baseline Characteristics of the Subjects

	Experimental Group		Control Group		Total	
	Mean	SD	Mean	SD	Mean	SD
Age	21.65	1.18	21.10	1.17	21.38	1.18
Height	1.69	0.04	1.68	0.06	1.69	0.05
Weight	67.60	4.27	67.05	4.76	67.33	4.52
BMI	23.54	0.86	23.45	1.60	23.50	1.23

Results and Discussion

The Table value for 0.05 of confidence with degrees of freedom 1&38 and 1 &37 is 3.91

Table II shows that the pre test means for explosive strength among control group mean, SD were 1.31 ± 0.12 respectively and experimental group mean, SD were 1.31 ± 0.12 respectively resulted in F- Ratio of 0.001 which indicates no significant difference between pre test means at .05 level of confidence. The post test means for explosive strength among control group mean, SD were 1.33 ± 0.12 respectively and experimental group mean, SD, were 1.62 ± 0.14 respectively resulted in a F-ratio of 50.43 which is significant at .05 level of confidence, whereas the adjusted post is means of control group and experimental group were 1.33, 1.62 respectively and resulted in a F-ratio of 205.38 which was significant at .05 level of confidence (Fig.1). This indicates that there is a significant change in explosive strength among experimental group when compared with the control group. After going through the results, it was conducted that the cricket specific fitness training program has resulted in a significant change in

explosive strength among the experimental group when compared with the control group.

The pre test means for speed among control group mean, SD were 9.73 ± 1.07 respectively and experimental group mean, SD were 9.67 ± 1.10 respectively resulted in F- ratio of 0.02 which indicates no significant difference between pre test means at .05 level of confidence. The post test means for speed among control group mean, SD were 9.67 ± 1.08 respectively and experimental group mean, SD, were 8.44 ± 1.11 respectively resulted in a F-ratio of 12.67 which is significant at .05 level of confidence, whereas the adjusted post is means of control group and experimental group were 9.64, 8.46 respectively and resulted in a F-ratio of 232.64 which was significant at .05 level of confidence (Fig.2). This indicates that there is a significant change in Speed among experimental group when compared with the control group. After going through the results, it was conducted that the specific training program has resulted in a significant change in Speed among the experimental group when compared with the control group.

Table 2: analysis of covariance for explosive strength and speed among experimental & control groups.

		Experimental group	Control group	F-ratio
		Explosive Strength	Pre test	1.31 ± 0.12
	Post test	1.62 ± 0.14	1.33 ± 0.12	50.43*
	Ad po test	1.62	1.33	205.38*
Speed	Pre test	9.67 ± 1.10	9.73 ± 1.07	0.02
	Post test	8.44 ± 1.11	9.67 ± 1.08	12.67*
	Ad po test	8.46	9.64	232.64*

Table 3: The pre and post test means of specific training (exp) and control (con) groups with percentage of gain

		Pre Test	Post Test	Gain	Percentage of Gain
		Explosive Strength	Experimental	1.31	1.62
	Control	1.31	1.33	0.02	1.53% ↑
Speed	Experimental	9.67	8.44	1.23	12.72% ↑
	Control	9.73	9.67	0.06	0.62% ↑

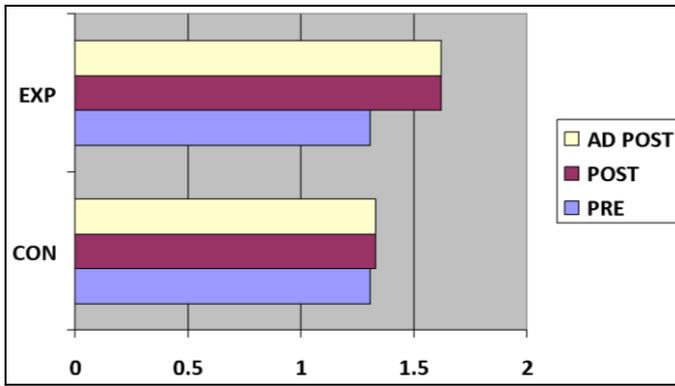


Fig 1: Bar Diagram showing the Pre, Post and Adjusted Post test means of Experimental and Control groups on Explosive strength

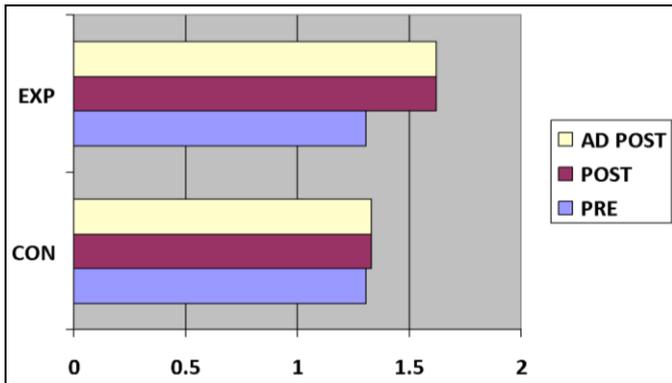


Fig 2: Bar Diagram showing the Pre, Post and Adjusted Post test means of Experimental and Control groups on Speed

Discussion

The result of the present study pointed out that there were a significant difference in explosive strength and speed due to twelve weeks of cricket specific training. The current study utilized twelve weeks programme duration with ten sessions per week and found that explosive strength and speed increases due to cricket specific training. The findings are also in agreement with the findings of Sivaraman, *et al.* (2012) [3], that resistance training increases speed, explosive strength, muscular endurance and shoulder strength. The result also shows that functional and plyometric training positively influences the explosive power and speed Murugan and Nageswaran (2014) [1], also findings that there was a significant improvement on speed, strength and endurance due to parcourse training. From the results of the present study and literature, it is concluded that dependent variables namely explosive strength and speed were significantly increased due to cricket specific training.

Conclusion

The result of the study revealed that the training group has significant improvement in explosive strength and speed among college level men cricket players after the cricket specific fitness training protocol. It was also concluded that this cricket specific fitness training is one of the best training methods for increasing the explosive strength, speed and as well as the physical fitness of cricket players.

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