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EFFECT OF EXPLOSIVE STRENGTH TRAINING ON SELECTED PHYSICAL FITNESS VARIABLES OF INTERCOLLEGIATE MALE CRICKET BOWLERS

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ABSTRACT

The purpose of this study was to evaluate the effect of explosive strength training on selected physical fitness variables of intercollegiate male cricket bowlers. To achieve this, forty male cricket players from Coimbatore district, aged between 18 and 25 years, were randomly selected as subjects. The participants were divided into two groups: an experimental group (n=15) and a control group (n=15). The study followed a true purposive random group design, incorporating both pre-test and post-test assessments. The selected physical fitness namely shoulder explosive power, Leg explosive power and speed rate are evaluated with standardize test. Before the intervention, all participants underwent a pre-test to establish baseline measurements. The experimental group then participated in a six-week explosive strength training program, conducted five days in a week for 60 minutes per session, while the control group did not receive any specific training. After the completion of the training period, a post-test was administered, and the results were recorded. To analyze the effectiveness of the training, a paired sample t-test was conducted to compare pre-test and post-test scores within and between groups. The significance level was set at 0.05 to determine whether the observed differences were statistically significant.

EXPLOSIVE STRENGTH TRAINING

Explosive strength is a fundamental component of physical fitness that plays a crucial role in sports performance, particularly in activities requiring rapid force production such as sprinting, jumping, and throwing. It is defined as the ability of a muscle or group of muscles to exert maximal force in the shortest possible time. This quality is especially important in sports like cricket, where fast bowlers rely heavily on explosive movements to generate bowling speed and effectiveness.

Explosive strength training involves exercises that are designed to improve the rate of force development (RFD). These exercises typically include plyometric training, resistance training, Olympic lifts, and ballistic movements. Such training enhances neuromuscular coordination, muscle fiber recruitment, and the efficiency of the stretch-shortening cycle, all of which contribute to improved athletic performance.

SELECTION OF SUBJECTS

The purpose of this study was to determine the effect of explosive strength training on selected physical fitness variables of intercollegiate male cricket bowlers. To achieve the purpose of the study, 30 male intercollegiate Cricket players are studying in and around Coimbatore district college level men cricketers were randomly selected as subjects. Their age as range from 18 to 25 years respectively.

SELECTION OF VARIABLES

The research scholar reviewed the available literature pertaining to the explosive strength training practices from books, journals, periodicals, magazines and research papers. Taking into consideration feasibility criteria, availability of instrument and the relevance of the variables of the present study, the following variables will be selected. By considering the feasibility the following physical fitness variables are selected for this study.

- **PHYSICAL FITNESS VARIABLES**
  - Shoulder Explosive
  - Leg explosive
  - Speed

CRITERION MEASURES

As per the available literature and consultation with experts the following standardized tests was used to collected data on selected physical fitnes variables . The selected criterion variables were measured using standardized test and equipment's. The criterion variables selected, test item used and the units of measurement were presented in Table-I

TABLE-I
LIST OF CRITERION VARIABLES AND TEST ITEMS

S.No	Variables	Test/Equipment used	Measuring unit
Physical variables			
1	Shoulder explosive Power	Softball Ball Throw	In Meters
2	Leg Explosive Power	Standing broad jump	In Meters
3	Speed	50yard dash	In Meter

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TRAINING PROGRAMME

The training group, namely the explosive strength training group, underwent their training program for six weeks. They trained five days a week, with each session lasting 60 minutes, including warm-up and cool-down exercises. The control group did not participate in any specific training; however, they continued with their regular physical education curriculum. All the subjects who participated in the training program were monitored throughout the training period. None of them reported any injuries. However, muscle soreness was reported during the early weeks but subsided later. Attendance was recorded before the commencement of each training session, and all subjects attended more than 90% of the total training sessions.

EXPERIMENTAL DESIGN

This study was conducted to determine the possible causes and effect of explosive strength training on selected physical fitness variables of intercollegiate male cricket bowlers. The study was formulated as a true random group design, consisting of a pre-test and post-test. The subjects (N=30) were randomly assigned to two groups, namely Group-I experimental group (N=15) and Group-II control group (N=15), with fifteen subjects in each group. All the participants were tested before and after the experimentation on physical fitness variables, namely shoulder explosive power, leg explosive power and speed were using standardized tests. After the pre-test, the experimental group underwent six weeks of explosive strength training for five days per week for 60 minutes per day, while the control group was not given any specific training. After six weeks of training, the post-test was conducted, and the readings were carefully recorded as post-test scores.

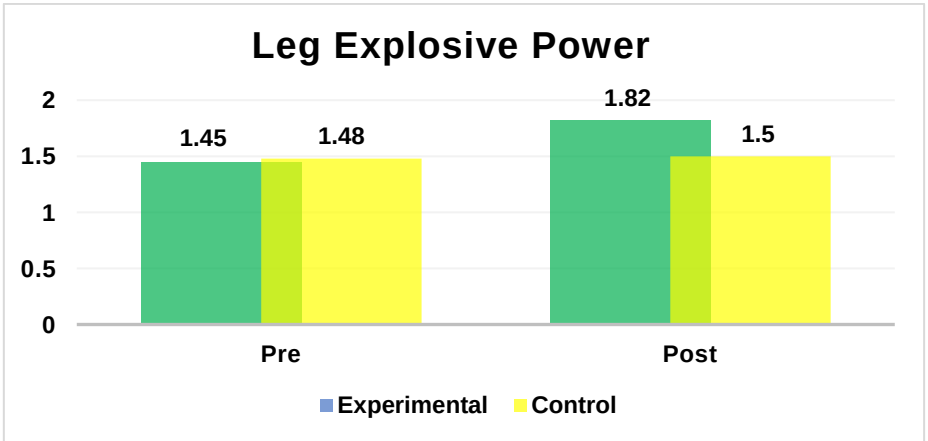
TABLE – II
THE SUMMARY OF MEAN AND DEPENDENT 't' TEST FOR THE PRE AND POST TESTS ON LEG EXPLOSIVE POWER OF EXPERIMENTAL AND CONTROL GROUPS

Groups	Pre test mean ±SD	Post test mean ± SD	M. D	SEM	P Value	't'-ratio
Experimental	1.45 ±0.30	1.82 ±0.23	0.37	0.06	0.00	5.78
Control	1.48 ±0.20	1.50 ±0.21	0.02	0.05	0.07	0.36

**** Significant at 0.05 level.***

Table – II Indicates the paired sample 't' was computed on selected dependent variables. The 't' test value of Explosive strength training group and control group are 5.78 and 0.36 for leg explosive power performance. The experimental 't' value is 5.78 significantly higher than the required table value of 2.14 with degrees of freedom 14 at 0.05 level of confidence. The 't' test value of control group is 0.36 which is less than the required table value, it indicates that there was not significant improvement on leg explosive power performance due to they were not subjected to any specific training. The result of the study shows that explosive strength training group has significantly improved the performance of leg explosive power. The Graphical Representation of the Pre and Post Test Mean Value of explosive strength training Group and control Group on leg explosive power presented in Figure-1

FIGURE – I
THE GRAPHICAL REPRESENTATION OF THE PRE AND POST-TEST MEANS VALUES OF EXPLOSIVE STRENGTH TRAINING GROUP AND CONTROL GROUP ON LEG EXPLOSIVE POWER



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TABLE – III
THE SUMMARY OF MEAN AND DEPENDENT 't' TEST FOR THE PRE AND POST TESTS ON SHOULDER EXPLOSIVE POWER OF EXPERIMENTAL AND CONTROL GROUPS

Groups	Pre test mean ±SD	Post test mean ± SD	M. D	SEM	P Value	't'-ratio
Experimental	39.15 ±4.81	43.52 ±5.20	4.37	1.83	0.02	2.39
Control	38.96 ±4.48	38.54 ±4.36	0.42	1.61	0.79	0.26

**** Significant at 0.05 level.***

Table – III Indicates the paired sample 't' was computed on selected dependent variables. The 't' test value of explosive strength training group and control group are 2.39 and 0.26 for shoulder explosive power performance. The experimental 't' value is 2.39 significantly higher than the required table value of 2.14 with degrees of freedom 14 at 0.05 level of confidence. The 't' test value of control group is 0.26 which is less than the required table value, it indicates that there was not significant improvement on shoulder explosive power performance due to they were not subjected to any specific training. The result of the study shows that explosive strength training group has significantly improved the performance of shoulder explosive power. The Graphical Representation of the Pre and Post Test Mean Value of explosive strength training Group and control Group on shoulder explosive power presented in Figure-II

FIGURE – II
THE GRAPHICAL REPRESENTATION OF THE PRE AND POST-TEST MEANS VALUES OF SHOULDER EXPLOSIVE STRENGTH TRAINING GROUP AND CONTROL GROUP ON BALANCE

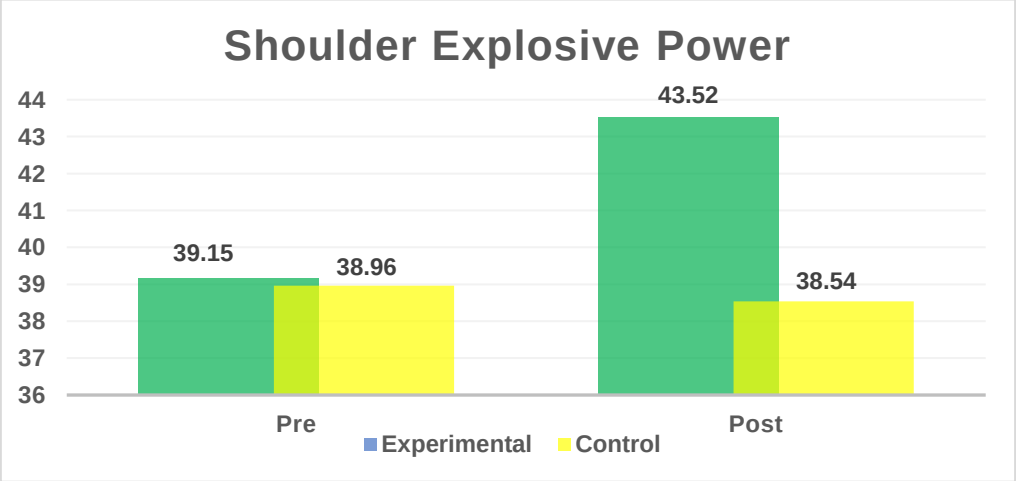


TABLE – IV
THE SUMMARY OF MEAN AND DEPENDENT 't' TEST FOR THE PRE AND POST TESTS ON BREATH HOLDING TIME OF EXPERIMENTAL AND CONTROL GROUPS

Groups	Pre test mean ±SD	Post test mean ± SD	M. D	SEM	P Value	't'-ratio
Experimental	20.14 ±0.21	23.86 ±1.28	3.72	0.37	0.00	9.95*
Control	20.54 ±0.38	20.95 ±1.08	0.41	0.33	0.24	1.24

**** Significant at 0.05 level.***

Table – IV Indicates the paired sample 't' was computed on selected dependent variables. The 't' test value of explosive strength training group and control group are 7.68 and 0.19 for speed performance. The experimental 't' value is 7.68 are significantly higher than the required table value of 2.14 with degrees of freedom 14 at 0.05 level of confidence. The 't' test value of control group 0.19 which is less than the required table value, it indicates that there was not significant improvement on speed performance due to they were not subjected to any specific training. The result of the study shows that explosive strength training group has significantly improved the performance of speed. The Graphical Representation of the Pre and Post Test Mean Value of explosive strength training Group and control Group on speed presented in Figure-III

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FIGURE – III
THE GRAPHICAL REPRESENTATION OF THE PRE AND POST-TEST MEANS VALUES OF EXPLOSIVE STRENGTH TRAINING GROUP AND CONTROL GROUP ON SPEED



DISCUSSION OF FINDINGS

The results of the study indicate that the experimental group that underwent explosive strength training showed significant improvement in the selected physical fitness variables, namely shoulder explosive power, leg explosive power and speed compared to the control group. The findings further suggest that explosive strength training had a greater impact on shoulder strength, leg strength, and speed.

These results align with previous research, such as Caspersen **Paulo M. Azevedo et al. (2013)** Effects of explosive strength training on performance." Journal of Strength and Conditioning Research, and Markovic Goran (2007) Does plyometric training improve vertical jump height?, such as this study found that the training group demonstrated significant improvements in shoulder explosive power leg explosive power and speed compared to the control group. Similarly, the present study confirms that explosive strength training can be an effective method for improving key physical fitness variables of cricket bowlers.

CONCLUSION

The findings of this study demonstrate that explosive strength training significantly improved physical fitness variables, namely shoulder explosive power, leg explosive power and speed of intercollegiate-level cricketers compared to the control group. The results suggest that incorporating explosive strength training as part of a structured cricket training program can have a greater impact on enhancing these physical fitness variables than the absence of specialized training. Therefore, explosive strength training can be considered an effective method for improving key physical attributes essential for cricket performance.

REFERENCE

1. *Wilmore, L. J., & Costill, D. L. (2004). Physiology of sports and Exercise. (2nd ed.). champaign, IL: human kinetics.*
2. *Paulo M. Azevedo et al. (2013). "Effects of explosive strength training on performance." Journal of Strength and Conditioning Research.*
3. *International Cricket Council (ICC). (2018). ICC Cricket Guidelines and Development Report.*
4. *Markovic Goran (2007). "Does plyometric training improve vertical jump height?" British Journal of Sports Medicine.*