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EFFECT OF RESISTANCE TRAINING ON SELECTED PHYSICAL FITNESS VARIABLES AMONG COLLEGE LEVEL CRICKETERS

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ABSTRACT
The present study aims to assess the of resistance training on selected physical fitness variables among college-level cricketers.. To achieve the purpose of the study thirty intercollegiate male cricketers were selected from colleges affiliated with Bharathiar University, Coimbatore TamilNadu. The age of the subjects was ranged from 18 to 25years. The subjects were further classified at random into two equal groups of 15 subjects, Group- I underwent resistance training and group-II acted Control Group (CG).Training period limited with three days in a week for six weeks of training. The selected criterion variables muscular strength, muscular endurance and speed were assessed by push up test, sit-ups test and 50m dash before and after the training period. The collected data were statistically analyzed by using dependent't' test. From the results of the study, it was found that there was a significant enhancement on muscular strength, muscular endurance and speed among college-level cricketers

KEYWORDS: *Resistance Training, Cricketers, Muscular Strength, Muscular Endurance and Speed*

INTRODUCTION

Resistance training has become an integral component of modern sports conditioning due to its proven ability to enhance overall physical fitness and athletic performance. In competitive sports like cricket, where players are required to perform a wide range of physical tasks such as sprinting, jumping, throwing, batting, and prolonged fielding, a well-developed fitness profile is essential. Cricket, though often perceived as a skill-dominant game, demands a high level of strength, muscular endurance, agility, flexibility, and power. Therefore, incorporating structured resistance training programs can significantly contribute to improving these physical fitness variables among college-level cricketers. Resistance training refers to any form of exercise that causes the muscles to contract against an external resistance, such as free weights, resistance bands, or body weight, with the objective of increasing muscular strength, endurance, and hypertrophy. Over the years, resistance training has evolved from traditional weightlifting methods to more sport-specific and scientifically designed training protocols. These methods not only enhance muscular fitness but also improve neuromuscular coordination, bone density, and metabolic efficiency, which are crucial for athletic performance.

In cricket, different playing roles require distinct physical attributes. Batsmen need explosive power and hand-eye coordination to execute strokes effectively, bowlers require strong lower and upper body muscles to generate speed and maintain consistency, while fielders depend heavily on agility, speed, and muscular endurance to perform quick movements and sustain performance throughout the game. Resistance training plays a vital role in developing these sport-specific fitness components, thereby enabling players to perform at their optimal level. At the collegiate level, athletes are in a crucial stage of physical and performance development. Structured training interventions during this period can lead to significant improvements in fitness and long-term athletic potential. However, many college-level cricketers often lack access to scientifically designed resistance training programs, relying instead on general fitness routines that may not adequately target key performance variables. This highlights the need for systematic investigation into the effectiveness of resistance training on selected physical fitness variables among this population.

This research has indicated that resistance training can lead to improvements in muscular strength, explosive power, speed, and endurance. Additionally, it has been shown to reduce the risk of injuries by strengthening muscles, tendons, and ligaments, which is particularly important in a sport like cricket that involves repetitive movements and physical stress. Despite these benefits, there is limited research focusing specifically on college-level cricketers, especially within the Indian context. The present study aims to examine the effect of resistance training on selected physical fitness variables among college-level cricketers. The findings of this study are expected to provide valuable insights for coaches, trainers, and physical education professionals in designing effective training programs. Ultimately, this research will contribute to the development of scientifically based training strategies that can enhance the performance and overall fitness of college-level cricket players.

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STATEMENT OF THE PROBLEM

The purpose of this study was to examine the effects of resistance training on selected physical fitness variables among collegiate cricketers.

CRITERION MEASURES ON SELECTED VARIABLES

S. No	VARIABLES	TEST ITEMS	UNIT OF MEASURES
1.	Muscular strength	Push-up test	Counts
2.	Muscular endurance	Sit up test	Seconds
3.	Speed	50m Dash	Seconds

METHODS

EXPERIMENTAL DESIGN

The study was formulated as pre-test and post-test randomized groups design from the players initially for the study, based on the voluntary response to participate in thirty intercollegiate men cricketers were selected from Bharathiar University affiliated colleges further process in which thirty cricketers were randomly selected. The age ranged from 18 to 25 years, and they were divided into two group's namely resistance training group and control group. The selected subject (N=30) was divided into two groups (N=15) which group 1 underwent resistance training and group II was consider as control group (CG). The resistance training group underwent the specific training in the evening session for a period of Eight weeks. Group II was not treated with any resistance training had they were doing their regular activity.

TRAINING PROGRAM

The total duration of resistance training was 60 minutes. The load was increased one in two physical fitness training progress and lasted for 60 minutes. During the training period the subject were treated with resistance training for three alterative days (Monday Wednesday Friday) per week

PHASE I

During the 1 to 2 weeks of resistance training, the subjects were treated with stretching for 5 minutes. Followed by resistance training namely Bench Press, Shoulder Press, 50m Sprint, Squats, Deadlifts, Box Jumps, Plank, Shuttle Run practice followed by underwent different repetitions with different set. Further the session ended with warm down.

PHASE II

During the 3 to 4 weeks, resistance training, the subjects were treated with stretching for 5 minutes. Followed by resistance training namely Bench Press, Shoulder Press, 50m Sprint, Squats, Deadlifts, Box Jumps, Plank, Shuttle Run practice followed by underwent different repetitions with different set. Further the session ended with warm down.

PHASE III

During the 5 to 6 weeks, resistance training, the subjects were treated with stretching for 5 minutes. Followed by resistance training namely Bench Press, Shoulder Press, 50m Sprint, Squats, Deadlifts, Box Jumps, Plank, Shuttle Run practice followed by underwent different repetitions with different set. Further the session ended with warm down.

STATISTICAL ANALYSIS

The collected data were systematically processed, assemble around subject to tabulation on completion of analysis results derived from dependent ‘t’ test was used to find out the effects of resistance training on muscular strength , muscular endurance and speed variables. In all cases the criterion for statistical significance was set at 0.05 level of confidents ($P<0.05$).

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RESULT

Table: 1

Computation of 'T' Ratio between Pre and Post Means of Experimental Group on Selected Physical Fitness Variables

Variables	Group	Mean	Standard deviation	Standard error mean	't'-ratio
Muscular Strength	Pre-test	21.13	0.91	0.38	11.85*
	Post-test	25.73	1.86		
Muscular Endurance	Pre-test	35.2	3.27	0.28	13.14*
	Post-test	38.93	3.26		
Speed	Pre-test	7.9	0.32	0.11	7.16*
	Post-test	7.07	0.53		

*Significant at 0.05 level of confidence (2.145), 1 & 14.

Table 1 reveals that the Computation of 't' ratio between pre and post-test means of experimental group on selected physical fitness variables. The 't' ratio on muscular strength, muscular endurance and speed are 11.85,13.14 and 7.16 respectively. The required table value was 2.14 for the degrees of freedom 14 at 0.05 level of significance. Since the obtained 't' ratio values were greater than the table value, it was found statistically significant.

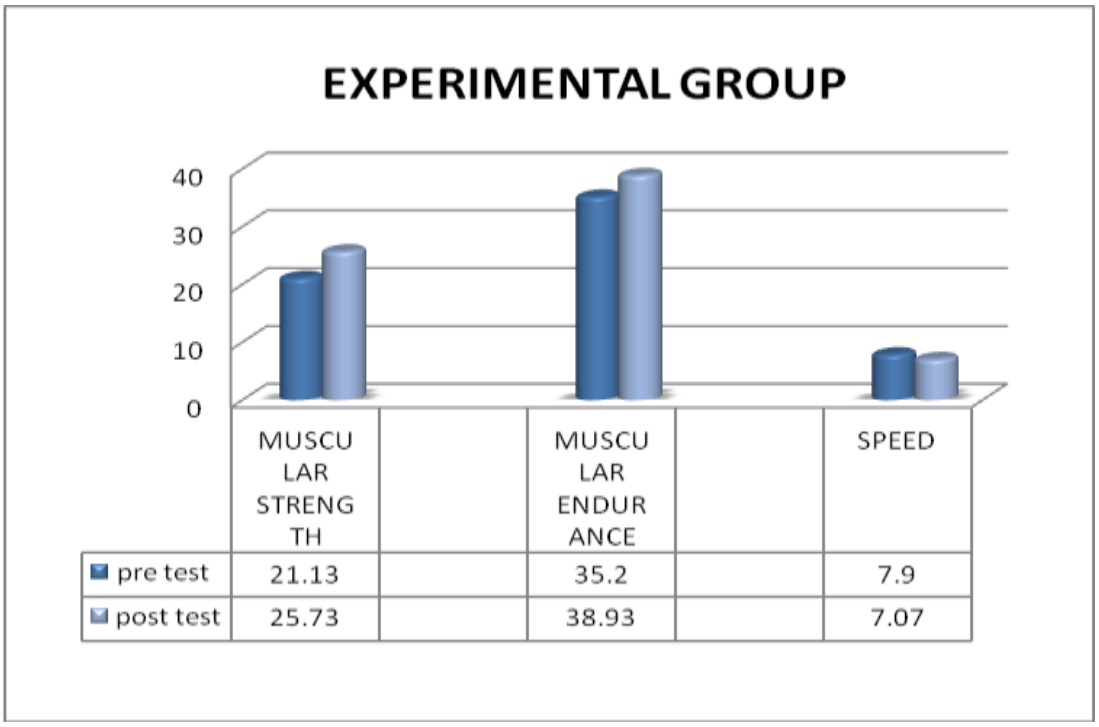

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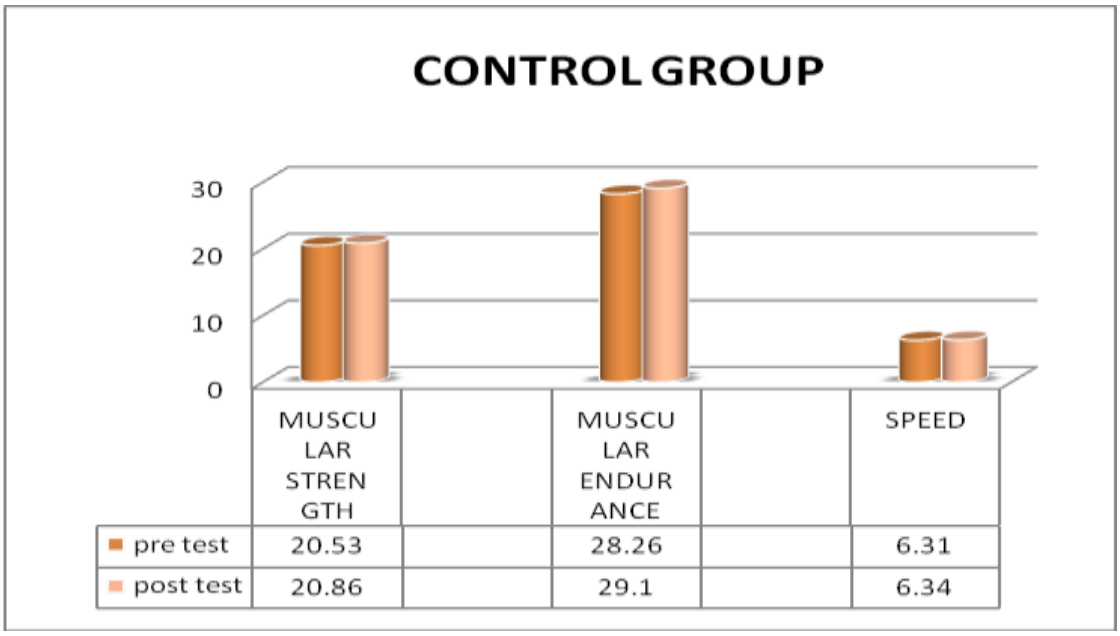
Table: 2
Computation of 'T' Ratio between Pre and Post Means of Control Group on Selected Physical Fitness Variables

Variables	Group	Mean	Standard Deviation	Standard Error Mean	't'-Ratio
Muscular strength	Pre-test	20.53	2.32	0.21	1.58
	Post- test	20.86	2.06		
Muscular endurance	Pre-test	28.26	1.92	0.13	1.7
	Post- test	29.1	1.8		
Speed	Pre-test	6.31	0.85	0.02	1.23
	Post- test	6.34	0.86		

Significant at 0.05 level of confidence (2.145), 1 & 14.

Table 2 reveals that the Computation of 't' ratio between pre and post-test means of Control group on selected physical fitness variables. The 't' ratio on muscular strength, muscular endurance and speed are 1.58,1.7 and 1.23 respectively. The required table value was 2.14 for the degrees of freedoms 14 at 0.05 level of significance. Since the obtained 't' ratio values were lower than the table value. It was found statistically insignificant.



DISCUSSION ON FINDINGS

The purpose of the present study was to examine the effect of resistance training on selected physical fitness variables, namely muscular strength, muscular endurance, and speed among collegiate cricketers. The findings of the study revealed a significant improvement in all the selected variables in the experimental group, whereas the control group did not show any notable changes.

The results indicated a marked improvement in muscular strength following the resistance training program. This enhancement can be attributed to progressive overload and increased neuromuscular adaptations, which are fundamental principles of resistance training. Regular resistance exercises stimulate muscle fiber recruitment and hypertrophy, leading to improved force production. These findings are consistent with the work of Steven J. Fleck and William J. Kraemer (2004), who reported that structured resistance training significantly enhances muscular strength through neural and muscular adaptations.

The study also demonstrated a significant improvement in muscular endurance among the experimental group. Resistance training, particularly when performed with moderate loads and higher repetitions, improves the muscles' ability to sustain repeated contractions over time. This adaptation is especially beneficial for cricketers, who require prolonged physical effort during matches. These results are supported by Gregory G. Haff and N. Travis Triplett (2016), who emphasized that resistance training enhances muscular endurance by improving metabolic efficiency and fatigue resistance.

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Furthermore, a notable improvement in speed was observed in the experimental group after the training period. The increase in speed may be due to enhanced muscular power and improved coordination resulting from resistance training. Stronger muscles can generate force more rapidly, contributing to better sprint performance, which is crucial in cricket for running between wickets and fielding. This finding aligns with the research of Tudor O. Bompa and Carlo Buzzichelli (2015), who highlighted that resistance training contributes to speed development by increasing power output and neuromuscular efficiency.

In contrast, the control group did not exhibit any significant improvement in muscular strength, muscular endurance, or speed. This indicates that without a structured resistance training program, improvements in these physical fitness components are minimal or absent. This observation is in agreement with earlier studies which stress the necessity of systematic and progressive training stimuli for performance enhancement.

The findings of the present study clearly demonstrate that resistance training is highly effective in improving muscular strength, muscular endurance, and speed among collegiate cricketers. These results strongly support the inclusion of a well-designed resistance training program as an integral part of cricket training to enhance overall physical fitness and athletic performance.

CONCLUSION

1. Based on the findings and within the limitations of the study, the following conclusions were drawn:
2. Resistance training produced a statistically significant improvement in muscular strength among collegiate cricketers in the experimental group.
3. Resistance training resulted in a statistically significant improvement in muscular endurance among collegiate cricketers.
4. Resistance training led to a significant improvement in speed among collegiate cricketers.
5. The control group did not show any significant improvement in muscular strength, muscular endurance, or speed during the study period.
6. The results indicate that resistance training is more effective than no training intervention in improving selected physical fitness variables.
7. It is concluded that systematic resistance training can be effectively incorporated into regular cricket training programs to enhance overall physical fitness and performance.

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