



Efficacy of Specific Physical Fitness Program on Agility of Male Cricketers

Shakti Shrivastava

Devi Ahilya University, Indore MP, INDIA

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Abstract

The study was planned to investigate the impact of selected fitness training program of agility on male cricket players. To conduct the study, 40 male cricket players (Ave. age 18.03 yrs) from Christian Eminent Cricket Academy in Indore (M.P) were selected as sample. Selected subjects were then divided into two groups i.e. experiment and control group with equal number of subjects assigned randomly in each group. The subjects of experimental group received three weeks specific physical fitness training program while subjects grouped into control group did not receive such programme apart from their routine exercise. To assess agility of selected male cricket players "Run a Three" protocol of Bourdon et al. (2000) was chosen. The scores on test protocol were assessed before and after the completion of study period for both the groups i.e. experimental and control group. Gain score (post-pre test) indicate that agility of male cricket players belonging to experimental group has improved significantly as compared to their counterparts belonging to control group. Therefore it may be concluded that specific physical fitness training is beneficial for improving the agility of male cricket players.

Keywords: Fitness training, agility, cricket.

Introduction

In modern cricket the ability to change direction quickly, running between the wickets, catching and chasing ball need agility. Hence in modern cricket agility plays an important role as far as performance is concerned.

Baley¹ defined it is the ability to change direction quickly and effectively while moving as nearly as possible as full speed while Johnson and Nelson² defined it is the physical ability that enables rapid and precise change of body position and direction. Examine at the definitions of agility it is evident that a modern cricketer needs to be agile to perform at highest level. Even from naked eye one can observe that agile cricketers excel while fielding or taking a run.

It is also very well documented fact that fitness program can improve certain physical and motor fitness aspects of sportspersons³. But despite this no scientific study has been conducted so far in which efficacy of specific fitness program on agility of cricket players is being observed.

It is more surprising because researchers like Thompson et al.⁴, Noakes and Durandt⁵, Soni and Sharma⁶, Kanaujia et al.⁷, Partibhan⁸, Kour and Singh⁹ have conducted studies with cricketers being central theme, but none focused attention on effect of specific fitness training program on agility of the cricket players. Hence, the present study was planned.

Hypotheses: In was hypothesized that three weeks specific physical fitness programme will make selected male cricket players much more agile.

Methodology

Sample: To conduct the study, 40 male cricket players (Ave. age 18.03 yrs) from Christian Eminent Cricket Academy in Indore (M.P) were selected as sample. These were selected subjects then divided into two groups i.e. experiment and control group with equal number of subjects assigned randomly in each group. The subjects of experimental group received three weeks specific training program while subjects grouped into control group did not receive such programme apart from their routine exercise.

Tools: To assess agility, "Run a three" protocol of Bourdon et al.¹⁰ was chosen. The subject was asked to warm up sufficiently prior to the test and allowed at least two trials at sub maximal pace. The test was performed on a cricket wicket which is preferably within an indoor environment. Subject was instructed to presume the starting position, with one foot behind the popping crease line and cricket bat in hand, and physically and mentally ready for taken run. The timing begins when the subject's rare foot leaves the ground and finish as the bat crosses the popping crease line at the end of the third run. Subject was given three trials with the fastest average time recorded as the best score. A rest interval of ≥ 5 minutes is given between trials. The average time from the two stopwatches was recorded to the nearest 0.1 second.

Collection of Data: Run a three test protocol was performed by each subject from experimental and control group before the start of study period. Then male cricketers belonging to experimental group were subjected to 03 weeks physical fitness program which includes conditioning, strength, aerobic exercises of 40 minutes with desired repetition and rest in

between. The intensity of exercises was 60-70%. The subjects performed these exercise one by one in each day of week under the supervision of fitness expert. Male cricketers belonging to control group were not subjected to any other program apart from their usual exercise routine. After study period subjects from both groups once again were made to perform on "Run a Three" test protocol. Gain score (Post-pre test) was computed for experimental as well as control group to find out the changes in scores on Run a Three performance during study period. The obtained gain scores for both the groups were then compared with the help of paired sample 't' test. The results were presented in table no. 1 and 2 respectively.

Analysis of Data: Statistical entries depicted in table-1 indicate significant change in "run a three" test scores of male cricket players belonging to experimental group during study period ($t=2.22$, $p<.01$) but no significant change was observed in "run a three" test score male cricket players belonging to control group ($t=1.67$, $p>.01$). It shows that agility of male cricket players belonging to experimental group has increased significantly during study period as compared to male cricket players of control group.

The changes in run a three test scores of male cricket players belonging to experimental and control group during study period was tested with the help of gain score (Posttest-pretest). The statistical calculation is presented in table-2.

A perusal of entries reported in table-2 indicate that agility of male cricket players belonging to experimental group has improved significantly during study period ($M=-0.10$) as compared to agility of male cricket player belonging to control group during study period ($M = 0.03$). This inference has been drawn from reduced timings on "run a three" test protocol performance after completion of study period as compared to timings on "run a three" test protocol before the commencement of study period.

In order to verify this result and as a way to exerting statistical control over pre-existing difference, ANCOVA technique was also applied to find out the efficacy of specific physical fitness training program on agility of selected male cricket players belonging to experimental and control group. The ANCOVA results are presented in table- 3 and 4 respectively.

Table-1
Pre and Post-Test Statistics of Run a Three Test Scores (seconds) in Selected Male Cricket Players of Experimental and Control Group

| Groups | Before Study Period Mean \pm S.D. | After Study Period Mean \pm S.D. | Mean Difference | 't' |
|---------------------|--|---------------------------------------|-----------------|----------|
| Experimental (N=20) | 10.23 \pm 0.39 | 10.13 \pm 0.35 | 0.10 | 2.22* |
| Control (N=20) | 10.44 \pm 0.58 | 10.47 \pm 0.56 | 0.03 | 1.67(NS) |

** Significant at .01 level; NS - Not Significant

Table-2
Comparison of Gain Score on run a three test between Experimental and Control Group

| | Experimental Group (N=20) | Control Group (N=20) | 't' | Sig. |
|-------------------|---------------------------|----------------------|------|------|
| Gain Score (sec.) | -0.10 | 0.03 | 2.67 | .01 |

Table-3
Analysis of Co-variance of Subjects Post Test Performance on "Run a Three" Test on the Basis of their Pre-Test Scores

| Source | Df | Sum of Squares | Mean Squares | F | Sig. |
|--------|----------|----------------|--------------|---------|------|
| Pre | 7.531 | 1 | 7.531 | 330.296 | .01 |
| Groups | 0.244 | 1 | 0.244 | 10.72 | .01 |
| Error | 0.844 | 37 | 0.023 | | |
| Total | 4256.266 | 40 | | | |

Table-4

Adjusted Mean Scores of Male Cricket Players on Run A Three Test After Controlling Pre-Test Scores

| Groups | Adjusted Mean |
|--------------------|---------------|
| Experimental Group | 10.22 |
| Control Group | 10.38 |

Co variants appearing in the model are evaluated at the following values Pre test = 10.33 A closer look at entries shown in table-3 and 4 clearly indicate a statistically significant difference in adjusted mean scores in run a test performance between experimental (M=10.22) and control group (M=10.38). This fact is verified by obtained F=10.72 which is statistically significant at .01 level. The results also justify the findings presented in table 2 in the form of gain score.

Results and Discussion

Results: On the basis of statistical analysis it was observed that agility in male cricket players belonging to experimental group in which three weeks of specific fitness program was imparted, have improved significantly as compared to male sportspersons of control group who did only regular routine exercises.

Discussion: The beneficial effect of fitness training program on motor fitness components of sportspersons have been highlighted in their studies by Perez-Gomez (2008)¹¹ also. Hence, the findings of the study are consistent with the previous results in the same area.

Conclusion

It was concluded that specific physical fitness training regime of certain duration is a good tool to enhance agility of male cricket players.

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