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Effect of speed based training on speed and agility of inter collegiate men football players

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Abstract

Football is an exceptional avenue for achieving and maintaining physical fitness due to its dynamic and multifaceted nature. The sport's demanding requirements, such as continuous running, sprinting, and quick changes in direction, make it an excellent cardiovascular workout that enhances endurance and heart health. Additionally, football engages various muscle groups contributing to overall strength development in the lower body, core and upper body. The sport's emphasis on speed, agility and reaction time is evident in the sharp turns, rapid accelerations and stretching movements involved. Football also serves as an effective means of speed training with players regularly executing sprints and quick maneuvers during matches. The idea of the study was to find out the enhancing physical fitness components of inter collegiate men football players through speed based training program. To achieve the purpose of the study forty (N=40) inter collegiate men football players were randomly selected from Government Engineering College Thrissur and they were divided into two equal groups (n=15) namely experimental and control group, their age ranged between 18 and 25year. Speed and agility were assessed by standard tests (speed -50m Dash and agility 4*10m shuttle run). Experimental group was undergone speed based training for a period of twelve weeks. The results revealed that there was a significant improvement found on speed and agility of inter collegiate men football players due to systematic speed based training.

Keywords: Speed based training, speed, agility and football players

Introduction

Today, soccer is a highly demanding game in which the participants are subjected to numerous actions that require overall strength and power production, speed, agility, balance, stability, flexibility, and adequate level of endurance thus making the conditioning of players a complex process. One of the goals is to minimize the unknown variables to the least possible number. Recently acceleration, speed and agility have been found to be independent, unrelated qualities that produce a limited transfer to each other. The next step is to investigate methods that produce the integral effects that can be used in the conditioning of soccer players. (Jovanovic Mario¹ and Sporis Goran¹ (2011) ^[8]). Speed-based training for football players focuses on enhancing acceleration, agility and overall sprinting capabilities crucial for on-field performance. Short, explosive sprints of 10 to 40 yards are incorporated, emphasizing both linear and lateral movements. Speed based training is integrated, combining bursts of maximum effort with periods of rest or lower-intensity activity. Agility drills, including ladder exercises and cone drills, help improve quick changes of direction. Strength training, emphasizing lower-body exercises like squats and plyometrics such as box jumps, enhances power. Technique refinement is prioritized, emphasizing proper running mechanics, arm drive, and stride length. Acceleration and deceleration drills simulate game scenarios, focusing on rapid starts and stops. Speed endurance is addressed with longer sprints, while reaction time drills enhance quick decision-making. Adequate rest and recovery, coupled with consistency, form the foundation of an effective speed-based training program tailored to football players' specific positions and requirements. Consulting with a qualified coach or sports trainer ensures a well-rounded approach while minimizing injury risks.

Methodology

The idea of the study was to find out the speed based training program on speed and agility on inter collegiate men football players.

To achieve the purpose of the study forty (N=40) study forty (N=40) inter collegiate men football players were randomly selected from Government Engineering College Thrissur and they were divided into two equal groups (n=15) namely experimental and control group, their age ranged between 18 and 25 year. Speed and agility were assessed for both the groups by standard tests (speed -50m dash and agility 4*10m shuttle run) and the score was recorded as pre -test scores. After pre-test experimental group was treated with sixty minutes speed based training, three alternative days per week in the morning session for a period of twelve weeks. Whereas the control group did not exposed to any specific training. After twelve weeks of speed based training programme both the groups were tested again on selected variable and the readings were recorded as post –test scores. The pre and post-test scores were analysis with appropriate statistical tool and the results were presented in the form of tables and figures.

Criterion Measures

The subjects of Speed based training group and control group were assessed on the selected variables by the standardized test items before and after the training period of six weeks.

Table 1: Shows the Variables, Tests and Unit of measurement

S.no.	Variables	Tests	Unit of measurement
Physical fitness components			
1.	Speed	50 m dash	Seconds
2.	Agility	Shuttle run 4x10mts	Seconds

Statistical techniques

The present study were mainly on testing the significant of mean differences among the groups and secondarily with the increase of means in each group from baseline to post test for various measures. The statistical tool used for the criterion measures were tested for significance by applying paired ‘t’ test. All of the statistical analysis tests were computed at 0.05 level of significance.

Results

Table 2: Significance of mean gains /losses between pre and post test of SBTG and cg of inter collegiate men football players on speed

Variables	Group	Pre test Mean and SD	Post test Mean and SD	Mean Diff.	't'-ratio
SPEED	SBTG	6.96±.41	6.78±.40	0.18	3.42*
	CG	6.97±.41	6.83±.41	0.14	1.26

*Significant at 0.05 level

Table-II reveals that the obtained mean values of pre test and post test scores of speed on Speed Based Training Group were 6.96 and 6.78, Control Group 6.97 and 6.83 respectively; the obtained t ratio was Speed Based Training Group 3.42, and Control Group 1.26. The required table value is 2.09 at 0.05 level of confidence for the degree of freedom 1 and 19. The obtained t ratio was greater than the table value. It is found to be significant changes in Speed of the football players. The mean values on Speed Based Training Group, and control group are graphically represented in figure-1.

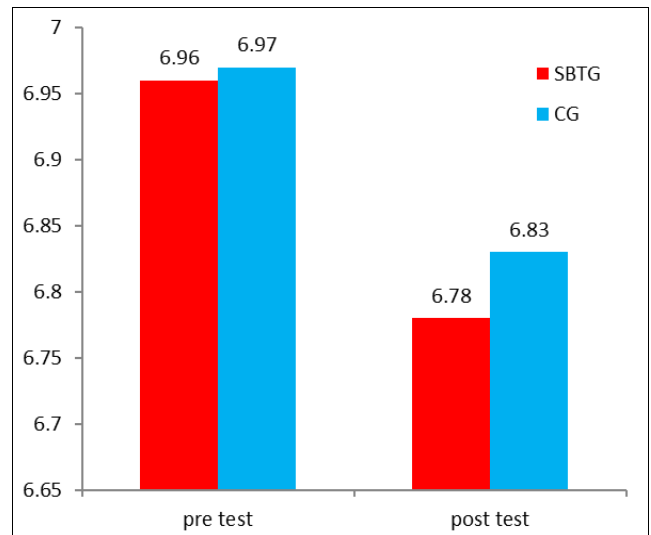


Fig 1: Bar diagram showing the pre-test& post-test sbtg, and cg of inter collegiate men football players on speed

Table 3: Significance of mean gains /losses between pre and post test of SBTG and cg of inter collegiate men football players on agility

Variables	Group	Pre test Mean and SD	Post test Mean and SD	Mean Diff.	't'-ratio
Agility	SBTG	17.63±.92	17.03±.62	0.6	3.24*
	CG	17.42±.61	17.58±.63	0.16	1.81

*Significant at 0.05 level

Table-III reveals that the obtained mean values of pre test and post test scores of Agility on Speed Based Training Group were 17.63 and 17.03, Control Group 17.42 and 17.58 respectively; the obtained t ratio was Speed Based Training Group 3.24, and Control Group 1.81. The required table value is 2.09 at 0.05 level of confidence for the degree of freedom 1 and 19. The obtained t ratio was greater than the table value. It is found to be significant changes in agility of the football players. The mean values on Speed Based Training Group and control group are graphically represented in figure-2.

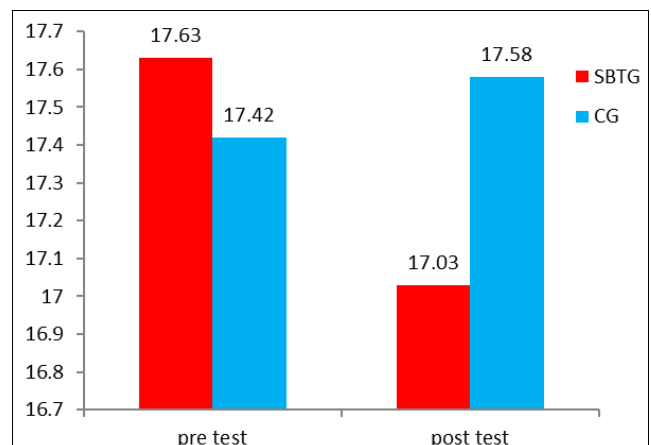


Fig 2: Bar diagram showing the pre-test& post-test sbtg and cg of inter collegiate men football players on agility

Discussion on findings

The analyzed data shows that six-week of speed-based training program significantly improved speed and agility of inter –collegiate men football players. This could be

explained by the development of speed and agility during speed-based training. Regular participation in the speed-based training may have improved one's speed and agility, because the majority of the exercise in the training focused on strengthening the muscles in the legs, arms, and trunk. The findings of the present study were in consonance with the results arrived at by Navneet Singh Mahar (2023) ^[18], Alexander Aaron Francis (2022) ^[19].

Conclusion

Based on the findings and within the limitation of the study it is noticed that practice of speed-based training helped to improve speed and agility of inter-collegiate men football players. It was also seen that there is progressive enhancement in the selected criterion variables of speed based training after six weeks of training programmed.

It was concluded that effects of Speed Based Training Group showed statistically significant improvements over the course of the treatment period on speed and agility of inter-collegiate men football players.

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