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Effect of game specific skill training on selected physical variables among basketball players

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Abstract

Objective: The objective of this study was to determine the effect of game specific skill training on selected physical variables among basketball players.

Methods: Forty two men basketball players (N=40) were randomly selected as a participant from Chennai district, Tamil Nadu. The participants were aged between 17 to 25 years. The selected participants were randomly assigned into two equal groups of 21 each, such as game specific skill training group and control group. The game specific skill training group underwent their training programme for three days a week for six weeks of training, each session lasted 60min. The control group did not participate in any kind of special training programme apart from the daily physical activities. The speed and agility were measured by 100m sprint and shuttle run. The subjects of the two groups were tested on selected physical variables prior to and immediately after the experimental period.

Statistical Procedure: The collected data were analyzed statistically through analysis of covariance (ANCOVA) to find the significant difference. The 0.05 level of confidence was fixed to test the level of significance difference.

Conclusions: The results indicated that the basketball players receiving the game specific skill training and reported speed and agility was improved compared to the control group. These findings seem to suggest that specific skill training programs may be a promising approach to promoting speed and agility among basketball players.

Keywords: game specific, physical, basketball, players

Introduction

Performance in high-level basketball is a very complex process to understand, mainly due to its dependency on a substantial number of dynamical interactions between technical, tactical, fitness and anthropometric characteristics of players Sampaio (2018) [9]. Basketball is an international sport played by two teams each with five players on the court at one time. It is based on catching throwing, dribbling, and shooting. Teams can have up to five more players as a substitute and there is no limit on the number of times they can make a substitution (Robey, 2007) [10]. A successful game of basketball needs good physical fitness, a skill like dribbling, passing, and shooting is the core for a player at any level of play. So that developing good conditioning programs based on the specific physiological demands and level of performance of each sport is considered as the key factor for progress (Taylor, 2003) [11].

Methods

Research Design

The method that had been adopted in the study was the random sampling design the study itself was the research that strived to find out the changes on selected skill variables due to game specific skill training among basketball players.

Participants

To achieve the purpose of the study forty men basketball players (N=40) were randomly selected as a participant from Chennai district, Tamil Nadu. The participants were aged between 17 to 25 years. The selected participants were randomly assigned into two equal groups of 20 each, such as game specific skill training group and control group.

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The game specific skill training group underwent their training programme for three days a week for six weeks of training, each section lasted 60min. The control group did not participate in any kind of special training programme apart from the daily physical activities.

Instrument and Procedure: The speed and agility were measured by 100m sprint and shuttle run.

Data Analysis

The subjects of the two groups were tested on selected variables prior to and immediately after the training period. The collected data were analyzed statistically through analysis of covariance (ANCOVA) to find the significant difference. The 0.05 level of confidence was fixed to test the level of significant difference.

Table 1: Analysis of covariance for pre and post data on speed (Scores in seconds)

Test	ST	CG	Source of variance	Sum of Squares	df	Mean Square	F
Pre-test mean	11.78	11.66	Between	0.11	1	0.12	0.54
			Within	6.06	28	0.22	
Post-test mean	11.30	11.64	Between	0.85	1	0.85	6.01*
			Within	3.98	28	0.14	
Adjusted mean	11.26	11.69	Between	1.317	1	1.317	31.2*
			Within	1.140	27	0.04	

*significant at 0.05 level.

The obtained F value on the pre-test means a score of 0.54 was lesser than the required F value of 4.20 to be significant at 0.05 levels. This proved that there was no significant difference between the groups at the initial stage and the randomization at the initial stage was equal. The post-test scores analysis proved that there was a significant difference between the groups as the obtained F value at 6.01 was greater than the required F value at 4.20. This proved that the differences between the post-test mean of the participants were significant. Taking into consideration the pre and post-test scores among the groups, adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value at 31.2 was greater than the required F value at 4.21 to be significant at 0.05 levels, hence it was accepted that there was a significant difference among the adjusted post-test means on the speed of the participants.

The pre, post, and adjusted means on speed were presented through a bar diagram for a better understanding of the results of this study in Figure-1.

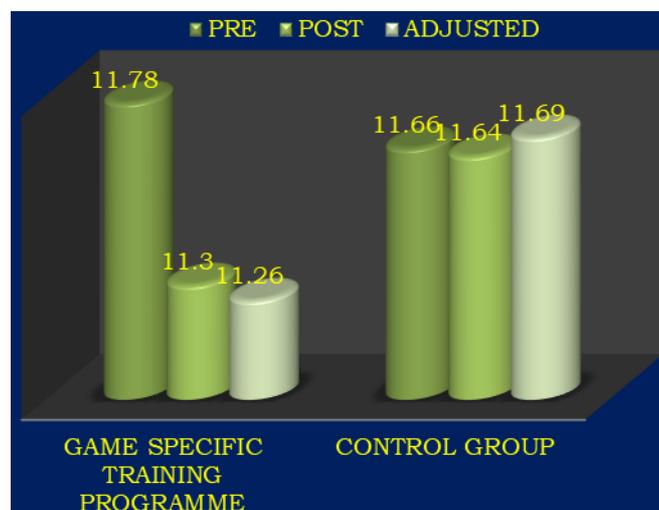


Fig 1: Pre, post and adjusted post test differences of the game specific skill training and control groups on speed

Table 2: Analysis of covariance for pre and post data on agility (Scores in Seconds)

Test	ST	CG	Source of variance	Sum of Squares	df	Mean square	F
Pre-test mean	16.76	16.86	Between	0.06	1	0.065	0.39
			Within	4.60	28	0.165	
Post-test mean	15.92	16.85	Between	6.53	1	6.53	21.36*
			Within	8.56	28	0.30	
Adjusted mean	15.97	16.80	Between	5.07	1	5.07	49.70*
			Within	2.75	27	0.10	

*significant at 0.05 level.

The obtained F value on the pre-test means a score of 0.39 was lesser than the required F value of 4.20 to be significant at 0.05 levels. This proved that there was no significant difference between the groups at the initial stage and the randomization at the initial stage was equal. The post-test scores analysis proved that there was a significant difference between the groups as the obtained F value at 21.36 was greater than the required F value at 4.20. This proved that the differences between the post-test mean of the participants were significant. Taking into consideration the pre and post-test scores among the groups, adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value at 49.70 was greater than the required F value at 4.21 to be significant at 0.05 levels, hence it was accepted that there was a significant difference among the adjusted post-test means on the agility of the participants.

The pre, post, and adjusted means on agility were presented through a bar diagram for a better understanding of the results of this study in Figure-2.

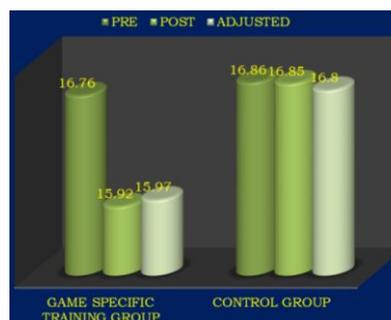


Fig 2: Pre, post and adjusted post test differences of the game specific skill training and control groups on agility

Conversation on Findings

The present study proved a statistically significant result ($p < 0.05$) in the value of speed and agility among basketball players due to game specific training programme. The results of the study also supported that Velickovic (2018) [7] programmed training had positive effects on the changes in the explosive strength of young female volleyball players. Sujatha, & Sutharsingh, (2018) [8] found functional and situational training improves physiological variables such as vital capacity and anaerobic power. Tumer (2015) found that athletes preferred training and instruction and situational consideration coaching styles. Mahadevan, (2018) [12] proved that volleyball players psychologically improved due to battle rope training. Parasuraman (2020) [13] revealed that volleyball players performance improved due to circuit training using Kettlebell.

Conclusion

The results indicated that the basketball players receiving the game specific skill training reported that selected physical variables (speed and agility) were improved compared to the control group. These findings seem to suggest that specific skill training programs may be a promising approach to promoting speed and agility among basketball players.

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