Research Paper Sports Science

Effect of SAQ Training and Plyometric Training on Selected Motor Fitness and Physiological Variables Among Junior Basketball Players

RAKESH PRASAD PhD Research Scholar,Department of Pondicherry University and Sports, Pondicherry

Dr. P. K. SUBRAMAINIAM Professor, Department of Pondicherry University and Sports, Pondicherry

ABSTRACT

The purpose of the study was to find out the effect of SAQ training and Plyometric training on selected motor fitness and physiological variable among junior basketball players. For this purpose, 45junior basketball players were randomly selected from Varanasi of Uttar Pradesh. Their age ranged between 13 to 17 years. The selected subjects were divided into three equal groups of 15 each, group I underwent SAQ training group II underwent Plyometric training and group III acted as Control that did not participate in any other training apart from their regular curricular activities. The subjects were tested on selected variables such as speed and breath holding time prior and after the training period. The selected variables speed was measured by 50 yard dash and breath holding time was measured by manually. The analysis of covariance (ANCOVA) was used to analyze the significant difference, if any among the three groups on selected variables. It was concluded from the results of the study that after the training programme there was a significant improvement in the speed and breath holding time for training group when compared with the control group.

KEYWORDS SAQ training, Plyometric training, Speed, Breath Holding Time.

INTRODUCTION

The game basketball extremely popular around the world. It isusually played on an indoor court in which two competing teams of five players. Each attempt to score by throwing an inflated ball so that it descends through one of two baskets suspended. At each end of the court, above their heads. Because of fast continuous action and frequent scoring in basketball a player required to respond quickly according to the situation. The successful performance depends upon the perfection with which different phases of the event are performed and training is generally physical and motor fitness exercises for the improvement of performance.The SAQ means Speed, Agility and Quickness, SAQ is a system of training aimed at the development of motor abilities and the control of body movement. It aims to improve the athlete's ability to perform explosive multi-directional movements by reprogramming the neuromuscular system. Plyometric is a type of exercise originally used and adopted in the Soviet Union due to its high training effect. The goal of these exercises is to better link speed to strength resulting in an increase in power output.

METHODOLOGY

The present study was conducted to find out the effect of SAQ training and Plyometric training on selected motor fitness and physiological variable among junior basketball players. For this purpose, 45junior basketball players were randomly selected from Varanasi of Uttar Pradesh. Their age ranged between 13 to 17 years. The selected subjects were divided into three equal groups of 15 each, group I underwent SAQ training group II underwent Plyometric training and group III acted as Control that did not participate in any other training apart from their regular curricular activities. The duration of training period was delimited to twelve weeks and the number of session per week was confined to three of 45 minutes. The pre and post test were conducted on the selected motor fitness variable, speed and physiological variable, breath holding time. The collected data were statistically analyzed with analysis of co-variance (ANCOVA) applied at 0.05 levels of significance.

DATA ANALYSIS AND RESULTS

Table - I Analysis of Covariance on speed of SAQ Training, Plyometric Training, and Control Groups among junior basketball players

	SAQ training group	Plyometric training group	Control group	SOV	SOS	Df	Mean square	F ratio
Pre	9.13	9.19	8.99	B W	.303 2.839	2 42	.151 .068	2.238
SD	.327	.262	.162					
Post	7.14	7.30	8.87	B W	27.647 5.727	2 42	13.82 .136	101.38*
SD	.415	.394	.283					
adjusted	7.14	7.30	8.87	B W	24.890 5.699	2 41	12.445 .139	89.526*

Significant at 0.05 level

The above table I shows that the pre-test means of speed for SAQ training, Plyometric training group and control group were 9.13, 9.19 and 8.99 respectively. The obtained F ratio is 2.238 for pre-test which is insignificant. Post-test means values for SAQ training, Plyometric training group and control group are7.14, 7.30 and 8.77. The obtained F ratio is 101.38 for post-test which is significant. The adjusted post-test mean values were 7.14, 7.30 and 8.87. The obtained F ratio for adjusted post-test was found to be significant and the value is 89.526. The schefee's test was applied as post hoc test to find out the paired mean difference if any.

Table - II Scheffe's post-hoc Test for mean difference among the groups for speedamong junior basketball players.

SAQ training group	Plyometric training group	Control group	MD	CI
7.14	7.30		0.16	0.34
7.14		8.87	1.73*	
	7.30	8.87	1.57*	

The above table II shows that the mean difference values between SAQ training and Plyometric training group was 0.16 which was lesser than required confidence interval value 0.43 which was insignificant. The mean difference between SAQ training and Plyometric training were found significant when compared to control group. The values were 1.73 and 1.57 respectively.

Table - III Analysis of Covariance on breath hold capacity of SAQ Training, Plyometric Training, and Control Groups among junior basketball players

	SAQ training group	Plyometric training group	Control group	SOV	SOS	Df	Mean square	F ratio
Pre	23.93	23.66	24.20	B W	2.133 58.667	2 42	1.067 1.397	0.764
SD	.798	1.23	1.42					
Post	28.13	27.06	24.13	B W	128.71 78.40	2 42	64.356 1.867	34.476*
SD	1.18	1.43	1.45					
adjusted	28.13	27.29	23.91	B W	146.825 37.362	2 41	73.412 .911	80.56*

Significant at 0.05 level

The above table III shows that the pre-test means of breath holding time for SAQ training, Plyometric training group and control group were 23.93, 23.66 and 24.20 respectively. The obtained F ratio is 0.76 for pre-test which is insignificant. Post-test means values for SAQ training, Plyometric training group and control group are28.13, 27.06 and 24.13. The obtained F ratio is 34.476 for post-test which is significant. The adjusted post-test mean values were 28.13, 27.29 and 23.91. The obtained F ratio for adjusted post-test was found to be significant and the value is 80.56. The schefee's test was applied as post hoc test to find out the paired mean difference if any.

Table - IV Scheffe's post-hoc Test for mean difference among the groups for breath holding timeamong junior basketball players.

SAQ training group	Plyometric training group	Control group	MD	CI
28.13	27.29		0.84	0.88
28.13		23.91	4.22*	
	27.29	23.91	3.38*	

The above table IV shows that the mean difference values between SAQ training and Plyometric training group was 0.84 which was lesser than required confidence interval value 0.88 which was insignificant. The mean difference between SAQ training and Plyometric training were found significant when compared to control group. The values were 4.22 and 3.38 respectively.

DISCUSSION

The results of the study on speed and breath holding time reveal that the experimental groups namely SAQ training group and Plyometric training group had significantly improved after the training, and there was no significant difference was existed between SAQ training group and Plyometric training group on speed and breath holding time.

CONCLUSION

In summary, the results of the study indicate that both the experimental group significantly improved the speed and breath holding time.There was no significant difference was existed between SAQ training group and Plyometric training group on speed and breath holding time.

REFERENCES

1. Disch James G. et. al., "Analysis of Canonical Relationship between a Battery of Motor Performance Tests and a Battery of Volleyball Skill Tests". Abstracts of Research Papers, 1980. | 2.Jaster Sally, "Developing Power Volleyball Power". Athletic Journal, 58, November, 1977. | 3.Lee E. Brown, Vance A. Ferrigno, and Juan Carlos Santana, (1980) "Training for Speed, Agility and Quickness". p.80 | 4. Sheppard, J. & Young, W. (2006) 'Agility literature review: Classifications, training and testing', Journal of Sports Sciences, 24(9), pp. 919-932. |