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Effect of SAQ Training and Small Sided Games on Selected Biomotor Ability among Junior Football Players

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Abstract

The study was designed to investigate the effect of SAQ training and small sided games on selected biomotor ability among junior football players. For this 30 school boys junior football players were selected randomly from noble academy at Chidambaram, Tamilnadu as subjects. Their age ranged from 15 to 17 years. They were divided into three equal groups namely Experimental Group I, Experimental Group II and control group. Five days in a week, the Experimental Group I underwent SAQ training, Experimental Group II underwent small sided game practice and Group III control group was not given any specific training. The following criterion variables were chosen, namely speed and agility. They were assessed before and after the training period of 12 weeks. The analysis of covariance was used to determine any significant difference present among the three groups of the dependent variables. The study revealed that the selected biomotor variables were significantly improved due to the influence of SAQ training and small sided game practice among junior football players.

Keywords: SAQ Training, Small Side Game, Speed, Agility.

Introduction

The SAQ training programme has become a popular way to train athletes. Whether they are school children on a soccer field or professional in a training camp, they can all benefit from speed, agility, and quickness training. This method has been around for several years, but it is not used by all athletes primarily due to lack of education regarding the drills. Speed, agility, and quickness training may be used to increase speed or strength, or the ability to exert maximal force during high-speed movements. Some benefits of speed, agility, and quickness training include increase in muscular power in all multiplanar movements; brain signal efficiency; kinaesthetic or body spatial awareness; motor skills; and reaction time.

Soccer requires players to perform numerous actions that require strength, power, speed, agility, balance, stability, flexibility and endurance (Bloomfield et al., 2007; Gorostiaga et al., 2004; Helgerud et al., 2001) suggesting that the physical conditioning of players is a complex process. During a soccer match, players cover about 10 km in total, which includes a sprint every 90 seconds (11% of overall activity) with each action lasting on average of 2 to 4 seconds and covering a distance of 15 m (Stolen et al., 2005).

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Although speed represents a very important component of fitness for a soccer player, quickness (acceleration speed during the first steps) is probably more important. This is because sprints in soccer are mainly performed over short distances undertaken at maximal intensity although the longest distances tend to be about 40 m and usually involves several changes in direction (Jovanovic et al., 2011; Rienzi et al., 2000). High-speed actions in soccer have been categorized as requiring acceleration, maximal speed or agility skills (Gambetta, 1996) whilst Chapman et al., (2008) described speed in soccer as consisting of running speed, reaction speed and acceleration speed during the first steps (referred to as quickness). Agility has also been shown to be an important component of soccer play (Jovanovic et al., 2011). Jullien et al., (2008) demonstrated that a short-term agility training programme (3 weeks duration) improved agility test results among young professional soccer players. However Jovanovic et al., (2011) did not find that a SAQ training programme improved the agility performance in young soccer players during the in-season period when training with and without a ball although this was found to be an effective way of improving some aspects of power performance.

Methodology

Subjects

The purpose of the study was to explore effect of SAQ training and small sided games on selected biomotor ability among junior football players. To

achieve this purpose of the study, thirty school boys, junior football players were selected randomly from noble academy at chidambaram as subjects. Their age ranged from 15 to 17 years. They were divided into three equal groups namely Experimental Group I, Experimental Group II and control group. Five days in a week the Experimental Group I underwent SAQ training, Experimental Group II underwent small sided game practice and Group III control group was not given any specific training.

Training Protocol

The training session includes warming up and lumbering down. Every day the work out lasted for 60-90 minutes approximately. Experimental group I designed SAQ training dynamic flex warm-up:20 min, mechanics 15 min, soccer specific conditioning, innervations (soccer related movement drills, agility, speed, multi directional 25 min), explosion (resisted random agility and assisted drills), to develop multi directional speed. Ratio: mechanics 70% and explosive 30% active recovery. Soccer specific SAQ training work outs examples: 10 x80 m, 8 x60 m, 6 x40 m timed active recovery. Cool down/ static stretching (20 min). Experimental group II underwent small sided game practice, dynamic flex warm up: 20 min (field practice: 15 x10 m, 20 x10m and 15 x30m 60 minutes) . Cool down/ static stretching (20 min). Group III designed as a control group did not practice any specific training programme. The following criterion variables were chosen namely speed and agility, was assessed by 50 meters dash and shuttle run. The data were collected before and after the twelve weeks of SAQ training and small sided games practice groups.

Statistical Technique

The data collected from the three groups prior to and post experimentation were statistically analyzed to find out the significant difference if any, by applying the analysis of covariance (ANCOVA). Since three groups were involved, whenever the obtained F ratio was found to be significant for adjusted post test means, the Scheffe's test was applied as post hoc test to determine the paired mean differences, if any. In all the cases statistical significance was fixed at .05 levels.

Results

Table I. Analysis of covariance for pre and post test data on speed and agility of SAQ training group small sided game practice group and control group

		Group- I	Group- II	Group -III	SOV	Sum of square	df	Mean squares	'F'ratio
Speed	Pre–test								
	Mean	7.35	7.33	7.29	B:	0.019	2	0.009	1.07
	SD	0.10	0.09	0.07	W:	0.235	27	0.009	
	Post–test								
	Mean	6.97	7.10	7.25	B:	0.404	2	0.202	13.67*
	SD	0.15	0.13	0.06	W:	0.399	27	0.015	
	Adjusted Post-Test								
	Mean	6.97	7.10	7.25	B:	0.378	2	0.189	12.31*
					W:	0.399	26	0.015	
Agility	Pre–test								
	Mean	10.44	10.43	10.51	B:	0.042	2	0.02	0.53
	SD	0.19	0.20	0.20	W:	1.068	27	0.04	
	Post–test								
	Mean	9.91	9.99	10.36	B:	1.14	2	0.574	30.35*
	SD	0.10	0.11	0.18	W:	0.51	27	0.019	
	Adjusted Post-Test								
	Mean	9.92	9.98	10.35	B:	1.03	2	0.516	33.69*
					W:	0.39	26	0.015	

* Significant at 0.05 level of confidence. The table value required for significance at 3.57

The adjusted post-test mean on speed for SAQ training group is 6.97, small sided game practice group is 7.10 and control group is 7.25. The obtained 'F' ratio of 12.31 for adjusted post-test mean is more than the table value of 3.37 required for significance at 0.05 level for df 2 and 26. The results of the study showed that there was significant difference among three groups on speed. The adjusted post-test mean on agility for SAQ training group is 9.92, small sided game practice group is 9.98 and control group is 10.35. The obtained 'F' ratio of 33.69 for adjusted post-test mean is more than the table value of 3.37 required for significance at 0.05 level for df 2 and 26. The results of the study showed that there was significant difference among three groups on agility.

Table II. Scheffe's post hoc test for the adjusted post-test paired means difference on speed and agility

	Adjusted Post-Test means				
	SAQ Training group	**Small Sided Game group**	**Control group**	**Mean difference**	**Confidence interval**
SPEED	6.97	7.10		0.13	0.14
	6.97		7.25	0.28	0.14
		7.10	7.25	0.15	0.14
AGILITY	9.92	9.98		0.06	0.14
	9.92		10.35	0.43	0.14
		9.98	10.35	0.37	0.14

***Significant at 0.05 level of Confidence.**

Table II shows that the adjusted post test paired mean difference between SAQ training and small sided game, SAQ training and control group and small sided game and control group are 0.13, 0.28 and 0.15 for speed and 0.06, 0.43 and 0.37 for agility respectively. They were greater than the confidence interval value of 0.14 and 0.14 at 0.05 level which indicate that there was a significant difference among all paired mean on speed and agility whereas for speed and agility there was no significant difference only between the two training groups.

Discussion on Finding

The speed and agility have increased significantly for SAQ training and small sided game practice groups as compared to control group. Whereas with regard to speed and agility both the experimental groups resulted with almost same gain indicating no significance between these two training groups. These results demonstrate that specific speed and agility training (SAQ), as part of the overall training process, can be considered a useful tool for the improvement of speed and agility among young soccer players. They also confirm Bloomfield et al. (2007) viewpoint that the SAQ regimen is an important training method for the improvement of speed and quickness. Importantly, the tests used in this study assessed sprinting performance in a very soccer specific manner i.e. with changes of direction from 5 to 15 meters, with and without the ball, as this type of movement represents 90% of all sprint activities during soccer matches (Bangsbo, 1994). Furthermore, Weineck, (2000) suggested that agility along with quickness and speed during the first three steps represent the most significant motor ability of a soccer player. Although it is considered that the best period for the development of agility is at the age of 16 (Markovic et al., 2007), this study has shown that agility can also be improved in later years using an appropriate training programme. This confirms previous findings by Sporis (2010b) where a poly-structural complex training programme produced improved performance in young soccer players.

Conclusion

The result of study reveal that there was significant improvement after the twelve weeks of SAQ training and small sided game practice groups in improve the speed and agility as compare to the control group whereas for speed and agility there was no significant difference only between the two training groups.

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