

Experimental Study on the Influence of SAQ Training on Speed and Agility of College Male Football Players

Jinjin REN, Liqui Huang*

Keimyung University, Deagu 427724, South Korea

ABSTRACT

In order to explore the effect of SAQ (Speed, Agility, and Quickness) training on the speed and agility of college male football players, this study conducted an 8-week research on 22 male football players from a university in Guangxi using the experimental method. The results showed that there was no significant difference between the SAQ training group and the general training group in speed (30m sprint, 30m dribble and run) and agility (dribbling agility test, agility test, 22m shuttle dribble) before the experiment ($P>0.05$). After the experiment, there were significant differences in various indicators between the SAQ training group and the general training group ($P<0.05$). There were significant differences in all tests of the SAQ training group before and after the experiment ($p<0.05$). There was no significant difference in all tests of the general training group before and after the experiment ($P>0.05$). The conclusion was that SAQ training can significantly improve the speed and agility of college male football players. It was suggested that SAQ training should be reasonably applied in college male football player training in order to improve the agility and reaction time of players.

KEYWORDS

SAQ training; male football players; speed; reaction time

Football has always been a hot sport and is very popular among people. However, the performance of Chinese football is relatively backward on the international stage, and there is a certain imbalance in its development. At present, improving the speed, agility and explosive power of football players has become one of the important goals of football training^[1]. In recent years, SAQ training has been widely used in ball games, commonly used for speed and reaction time training, and been proven to be an effective way to perform training^[2]. This study applied SAQ training to college football training to explore the influence of SAQ training on the speed and reaction time of football players, and provide a basis for the development of college male football player training.

1 Research Object and Method

1.1 Research Object

Twenty-two male student-athletes specialized in football in a university in Guangxi were taken as the experimental objects and were randomly divided into the SAQ training group (Speed, Agility, Quickness Training Group) and the GTG (General Training Group). The SAQ training group underwent SAQ training for 8 weeks, which was 4 times a week, and 120 minutes each time. The GTG received the usual training.

1.2 Metrics

1.2.1 Speed

In order to understand the speed changes after SAQ training, the 30m sprint and 30m dribble were measured. They were respectively tested twice, and record the optimal value was recorded (second).

1.2.2 Agility

In this study, Arrowhead agility test, Arrowhead dribble agility test, Semo agility test and 22m shuttle dribble were used to the test agility^[3]. Each person was tested twice, and the optimal value (second) was recorded. If the player passes or falls to the ground without turning, he will be penalized for 2 seconds.

1.3 Training Implementation Plans

During the training, the SAQ training group was consistent with the GTG except for SAQ training^[4]. The course flow of the GTG included five parts: preparation activities, basic technical training (dribbling, controlling, passing, shooting, etc.), tactical training, small field offensive-defensive transformation training, and cooling down. The course flow of the SAQ training group consisted of five parts: preparation activities, basic technical training +SAQ, tactical training, small field offensive-defensive transformation training, and cooling down. SAQ training included: hurdle starting acceleration with forward lunge, pulling load-bearing sled and accelerative running , side slide with weight plates, side high knee, quick response to catching the ball with four-point directional change, agile step training, cross directional change running, multi-direction skill training, resistance step training, step training with reaction lamps, etc^[5].

1.4 Statistical method

SPSS26.0 T-value test was used to statistically analyze the data of the SAQ training group and the GTG before and after the experiment, and the significance level of the statistic was $P<0.05$.

2 Research Results and Analysis

2.1 Comparative Analysis of the Tests of the Two Groups before the Experiment

Table 1 Results of the SAQ Training Group and the GTG before the Experiment (n=11)

Items	SAQ Training Group	GTG	t	P
30m Sprint	4.26±0.14	4.24±0.13	0.063	0.951
30m Dribble and Run	5.47±0.16	5.50±0.08	-0.489	0.630
Arrowhead Agility	9.16±0.13	9.15±0.13	0.183	0.857
Semo Agility	11.31±0.14	11.29±0.14	0.331	0.744
Arrowhead Dribble	9.50±0.14	9.50±0.17	-0.068	0.947
22m Shuttle Dribble	12.79±0.18	12.78±0.14	0.147	0.885

As shown in Table 1, there was no significant difference between the two groups in 30m sprint, 30m dribble and run, Arrowhead agility, Semo agility, Arrowhead dribble, 22m shuttle dribble and other indicators ($P>0.05$), which proved the rationality of the grouping of training personnel in this experiment.

2.2 Comparative Analysis of the Tests of the Two Groups after the Experiment

Table 2 Results of the SAQ Training Group and the GTG after the Experiment (n=11)

Items	SAQ Training Group	GTG	t	P
30m Sprint	4.05±0.13	4.19±0.15	-2.333	0.030
30m Dribble and Run	5.32±0.11	5.46±0.15	-2.371	0.028
Arrowhead Agility	8.98±0.16	9.11±0.12	-2.165	0.043
Semo Agility	11.08±0.07	11.19±0.1	-2.952	0.008
Arrowhead Dribble	9.33±0.07	9.45±0.13	-2.608	0.017
22m Shuttle Dribble	12.54±0.12	12.70±0.16	-2.457	0.023

According to the experimental results, the test indexes of the SAQ training group were significantly better than those of the GTG ($P<0.05$). It further proved that SAQ training has significant effectiveness in improving speed and agility. The SAQ training adopted by the SAQ training group focused on improving the motor response ability of the players through auditory and visual stimulus. This training emphasized rapid response after receiving signals to improve the speed of the players^[6].

2.3 Comparative Analysis of the Tests of the SAQ Training Group before and after the Experiment

Table 3 Results of the SAQ Training Group before and after the Experiment (n=11)

Items	Before the Experiment	After the Experiment	t	P
30m Sprint	4.26±0.14	4.04±0.13	4.584	0.001
30m Dribble and Run	5.47±0.16	5.32±0.11	3.322	0.008
Arrowhead Agility	9.16±0.13	8.98±0.15	4.898	0.001
Semo Agility	11.31±0.14	11.08±0.73	5.394	0.000
Arrowhead Dribble	9.5±0.14	9.33±0.07	3.778	0.004
22m Shuttle Dribble	12.79±0.17	12.54±0.12	4.530	0.001

According to the table 3, the indexes of the SAQ training group after the experiment were significantly better than those before the experiment, indicating that SAQ training had a significant effect on the speed and agility of college football players. SAQ training was designed to improve the foot speed of football players, and enabled athletes to make full use of the sensory organs to accurately judge the distance when avoiding through the stimulation generated by obstacles, thus improving the ability to change directions when dribbling.

2.4 Comparative Analysis of the tests of the GTG before and after the Experiment

Table 4 Results of the GTG before and after the Experiment (n=11)

Items	Before the Experiment	After the Experiment	t	P
30m Sprint	4.25±0.13	4.19±0.15	1.856	0.093
30m Dribble and Run	5.47±0.08	5.44±0.15	0.729	0.483
Arrowhead Agility	9.15±0.13	9.10±0.12	0.711	0.494
Semo Agility	11.29±0.14	11.19±0.09	1.735	0.113
Arrowhead Dribble	9.51±0.17	9.44±0.13	0.954	0.363
22m Shuttle Dribble	12.78±0.14	12.69±0.15	2.934	0.150

As can be seen from Table 4, there was no significant difference in the indexes of the GTG before and after the experiment, $P>0.05$. The GTG adopted traditional training methods, an focused on tactical and spherical training. The traditional training methods had no significant effect on the speed and agility of athletes. Therefore, SAQ training should be considered in college football

training to strengthen specific training areas and improve the comprehensive ability of athletes in these aspects.

3 Conclusion and Suggestions

3.1 Conclusion

This study shows that SAQ training in the SAQ training group can improve the speed significantly. In particular, in the tests of 30m sprint and 30m dribble, obvious progress has been made. It shows that SAQ training plays a positive role in improving the speed of college male football players. As for agility, Semo agility test, Arrowhead agility test and Arrowhead agility dribble test all showed significant improvement after implementing SAQ training. It shows that the implementation of SAQ training plays a positive role in improving the agility of athletes.

3.2 Suggestions

SAQ training has a positive effect on the speed of college male football players. Therefore, it was proposed to integrate SAQ training into the traditional training methods to improve the speed of athletes. It is necessary to further research and explore the training methods of combining the SAQ training with football skill training, including training intensity, frequency and duration, so as to develop a more comprehensive and scientific training plan and improve the overall performance in the actual competition.

About the Author

Jinjin Ren (1996-), Female, Han, Taiyuan, Shanxi; PhD Candidate in 2022, Keimyung University, South Korea, Research Field: Exercise Physiology.

*Corresponding Author: Liqiu Huang (1984-), Female, Han, Liaoyang, Liaoning; PhD Candidate in 2023, Keimyung University, Korea, Research Field: Sports Management.

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