



Science, Movement and Health, Vol. XVIII, ISSUE 1, 2018
January 2018, 18 (1): 46-51

Original article

EFFECT OF S.A.Q TRAINING ON CERTAIN PHYSICAL VARIABLES AND PERFORMANCE LEVEL FOR SABRE FENCERS

MOHAMED Safwt Abbas¹, LARION Alin²

Abstract

Aim. Speed, Agility and Quickness (SAQ) training has become a very popular method for training athletes. Any athlete, from a child to a professional player, can benefit from it. This method has been implemented for several years, but still today is not used by some athletes mainly due to the lack of knowledge about the type of maneuvers to be used. This type of training can be used to increase the speed and the capacity to develop maximum force during movements at high speeds, since it manipulates and takes better advantage of the stretch-contraction cycle of the muscle, thus reducing the gap that exists between training Traditional resistance and functional training with specific movements. The purpose of this study was to investigate the effect of S.A.Q training on certain physical variables and performance level for sabre fencers.

Methods. The sample comprised random from elite fencers in Egyptian fencing club. (20) fencers, the subjects divided into two groups. The experimental group (n= 10) participated in S.A.Q training program four- times weekly, Ten weeks. The control group (n= 10) participated in the traditional program for the same period.

Results. Significant Difference between the experimental group and control group in certain physical variables (Leg strength, Back strength, Coordination, Agility, movement speed and performance level) for the experimental group.

Conclusions. Finally, the findings indicated that the S.A.Q training program for ten weeks could improvement the physical variables (Leg strength, Back strength, Coordination, Agility, movement speed and performance level) for the experimental group. These results have to be taken into account by Trainers in order to better understand and implicated of these concepts in training sessions and lessons.

Keywords: S.A.Q training, Sabre, Movement Speed.

Introduction

Sports movement in recent decades has witnessed a great leap that has made the limits of human capabilities beyond all barriers and rise to achieve figures that in the past were pure fantasy.

This great development witnessed by the games and sports did not come from a vacuum or a coincidence, but came to crown all the scientific and field efforts that took place in those games and sports thanks to the findings of the medical, health and social sciences from which sport takes everything that would benefit them in ways of development.

In this regard, (Amr, 2012) notes that every observer of the development of sports levels in the world and contemplates these performances recognizes that sports training is a great thing in the preparation, formulation and development of human capacities in their various dimensions in order to

maximize the abilities and abilities of human beings in the direction of Objective.

The player cannot master the skillful performance in the absence of the necessary physical qualities. Thus, the improvement and development of the level of performance can be achieved through the development of the elements of physical fitness of athletics, which are developed in a scientific way and bear fruit later on, to pay attention to the physiological aspects that affect the level of skill performance.

The development of special physical abilities is closely related to the development of basic motor skills and that the athlete cannot master the basic motor skills of a type of activity that he specializes in if he lacks the physical abilities necessary for this activity. He adds that the distinctive character of the basic motor skills of the specialized activity determines the necessary physical abilities Must be

¹ Faculty of Physical Education, Sadat City University, EGYPT

² Faculty of Physical Education and Sport, Ovidius University of Constanta, ROMANIA

E-mail address: amr297@aswu.edu.eg

Received 21.10.2017 / Accepted 19.11.2017



developed and developed to reach the highest level possible in this activity.

Fencing is a very interesting sport to practice. In most cities we find a fencing club or gyms that offer fencing classes with which you can start in the use of saber.

Fencing like most sports intermittent, it depends on many factors to obtain success, technical, tactical, psychological and physical factors (Enrique et al., 2007).

Within the physical condition, fencing requires a series of physical abilities such as: ability to repeat high intensity sprints, muscular strength and endurance, speed, agility, speed and flexibility. (Enrique et al., 2007)

(H. Mohamed 1996) points out that the success of the player in the performance skill is affected by physical abilities or so-called elements of fitness, and also indicates that each type of sports activities is different from the other where the availability of certain abilities and qualities of the player qualify him to exercise this type of sports activity, as well as that these abilities and qualities vary depending on the skills required to perform within the activity itself

Fencing is a powerful mix of sword handling, athletics and tactical maneuverability. To disarm your opponent's defenses, you need a repertoire of moves at your disposal. By combining these movements, you can manipulate your opponent and create a space to register a touch on your opponent.

Agility is known as the sum of the ability to sprint, accelerate, decelerate and change direction. most of movements with changes of direction in team sports are not planned before that happen, but are made in response to an external stimulus, such as the movement of the ball, when you interact with an opponent and play situations unpredictable, this is what has been called reactive agility (Sheppard and Young, 2006).

Agility in this type of training is defined as the ability to decelerate, accelerate and change direction quickly maintaining good body control without slowing down. Agility is closely related to the balance, since it requires the athlete to regulate changes in their center of gravity caused by changes in posture. The movements that require most sports are not rigid or in a straight line, but require changes of direction and turns in several planes of movement simultaneously. That is why it is required that athletes are able to react with force, explosiveness and speed in different positions. (Amr, 2012)

Speed refers to the ability to run at or near the maximum possible speed. This phenomenon only lasts from 4½ to 6 seconds, even for elite athletes.

Unfortunately, many sports do not prioritize the importance of achieving maximum speeds despite being of great importance to them. It is enough to see how many times the results in sports are determined by the ability or not to develop maximum speeds at a certain time. Achieving maximum running speeds has a direct relationship with the increase in power. The fastest runners are those who manage to have less contact with the surface, which is largely determined by the strength and power of the athlete in relation to their body composition. SAQ training prepares an athlete to run faster through maneuvers designed to work specific muscles involved in rapid movements of their own sport.

Within the movements executed in the fencing competition, the offensive action is the component that most determines success. The fencing actions are characterized by the speed of execution of hand techniques and by the explosiveness of the movement of lower extremities (Amr, 2012). Within the actions specific offenses of fencing, the fund and the arrow (without crossing the feet in the case of shooters of saber) are the two displacements that execute, performing both to the maximum speed.

In the case of sabre fencers the regulation F.I.E. prohibits them from crossing feet, so the back foot is not placed ahead but joins him causing a forward skip shift that is rebalances with other small displacements jumped forward but always without produce the crossing of the feet. In this sense, the valuation of force explosive or ability to generate the greatest force in the shortest possible time [4], it is relevant in order to try to improve the methodology of training and adjust the planning thereof with the aim of optimizing performance since this capacity is one of the important in this sport (Enrique et al., 2007)

Therefore, it is necessary not only one general assessment of explosive force, but, moreover, an evaluation of the typical gestures of sport or valuation of explosive force specific.

The footwork with speed ladder is very common in sports since 1980, where it began to be used in American football, but it is in the last decade where this type of exercises has become popular among physical trainers of basketball. (Amr, 2012)

The training of S.A.Q has become one of the most commonly used exercises in the field of sports, and has proved to be effective in improving the physical and motor abilities of players in many sports events.

The term S.A.Q is derived from initial letters for both speed, agility and speed. (Mario et al., 2011)

S.A.Q is practiced as an additional (supplemental) program in addition to resistance



training exercises in gyms, in order to take advantage of the muscle strength output gained from resistance training and transfer to field performance through S.A.Q.

Through SAQ, fencers may be able to react faster to stimuli, start faster and improve direction changes (Sheppard & Young, 2006). It is also a basic coordination work, where young players can improve their motor control and agility (Young & Farrow, 2006).

Speed, Agility and Quickness (SAQ) training has become a very popular method for training athletes. Any athlete, from a child to a professional player, can benefit from it. This method has been implemented for several years, but still today is not used by some athletes mainly due to the lack of knowledge about the type of maneuvers to be used. This type of training can be used to increase the speed and the capacity to develop maximum force during movements at high speeds, since it manipulates and takes better advantage of the stretch-contraction cycle of the muscle, thus reducing the gap that exists between training Traditional resistance and functional training with specific movements. (Amr et al., 2017)

Footwork (SAQ) is much more complex with specific fencing skills, this work should be done at the beginning of the training, since the exercises for the development of speed and neuromuscular coordination should be carried out with the least degree of fatigue possible. It is an ideal type of work to perform as a specific warm-up within a physical, technical or tactical session. (Akhil et al., 2011)

This type of training can be done with players of any category, from beginners to professional fencers. In children, the development of coordination and motor control becomes very important. With older players, it can be a very useful element for the work of speed, agility and improvement of the specific physical condition.

SAQ is an effective training method in sports where intermittent efforts predominate, such as fencing (Amr et al., 2017).

There is a large number of exercises that can be done with the speed ladder, it can be done with elastic bands, with weight, related to technical skills, like parts of technical circuits. The important thing is not the type of exercise, but the coach knows how to adapt the contents to work at the age and development of the fencers.

Before an athlete begins (SAQ) training program, he needs to be evaluated to determine areas where improvement is needed. In addition, you should also take into account the type of sport in which you

participate to determine the type of exercises and the duration of them. (Amr et al., 2017)

Among the benefits of (SAQ) training are: increase in muscle power in linear, lateral, horizontal and multi-plane movements; the efficiency of the signal from the brain to the body; greater awareness of the space and location of the body; improvement of motor skills (coordination) as well as reaction force and execution time. (Akhil et al., 2011)

The purpose of this study was to investigate the effect of S.A.Q training on certain physical variables and performance level for sabre fencers.

Methods

The sample comprised random from elite fencers in Egyptian fencing club. (20) fencers, the subjects divided into two groups. The experimental group (n= 10) participated in S.A.Q training program four- times weekly, Ten weeks. The control group (n= 10) participated in the traditional program for the same period.

Steps to prepare a training program for the sack:

- Conduct a survey of research and studies related to research variables.
- Meet experts and draw on their diverse experiences in designing training programs for this age group.

The objectives of the training sessions:

The development of some special physical abilities of the fencing through the use of physical and professional training, and different parts of the body and according to the nature of physical performance and skill of the duel with the importance of the development of:

Special physical fitness level

- The level of performance of offensive and defensive skills.
- Criteria for the SAQ Training Program:
- The proposed training should be tailored to the objectives set and the nature of the age.
- Program flexibility and adaptability.
- Graduation in the increase of pregnancy and appropriate progress and the shape of guidance and guidance loads training according to the method of training intended.
- Availability of security and safety factors.
- Take into account individual differences between players.
- Availability of tools and equipment used in training and program implementation and suitability.
- Balance the generality and specificity of training.

- Organization, diversification and continuity of training.
- Determinants of the SAQ training Program:

Program duration:

- Program duration (10) weeks.

Number of training modules:

- The number of units weekly (4) units weekly by 4 × 8 weeks = 32 units of the proposed program.

Training Method Used:

The researcher used the method of high-intensity interval pregnancy, repetitive training, and circular training, as well as content of exercises of a similar performance to offensive skills.

- The scientific bases of the training program in the method of high intensity load:
- Determine maximum repetition of 30 w for each exercise selected.
- Determine the load of each exercise.
- Weight training for the development of the transition speed is determined by 75% intensity, taking into account the gradation in those wrenches, and that the frequency of 8-12 days.
- Rest between each exercise 60th, including stretching exercise as one of the training exercises, taking into account the use of pulse in comfort and after the effort in determining the rest periods used in the search.
- The chosen training course will be conducted three times, with breaks between each of them, given that the training course is set up.
- Convenience between 2-4 groups.
- The maximum frequency is measured at 30 w per exercise every 3 weeks to determine the load of each stage of the program.

Selecting and defining the content of the training department:

30 exercises have been identified to be placed within the training stations in the form of stations. Each circle contains the number of exercises arranged

according to the goal to be achieved, with the performance of the training courses as mentioned in the training programs. This is taking into consideration the researcher in choosing the quality of exercise to be similar to the nature of performance in sport Karate, along with the balance of muscular action between the working muscles and the antibody.

Module parts:

A. Preparatory part:

This section includes warm-up exercises for the purpose of heating the muscles by increasing the movement of blood within the muscles and raise the temperature of the body and the development of the central nervous system.

This part takes between (12-15 s) of the module time.

B. Main part:

It includes the training of the SAQ for the development of special physical abilities, and this part takes between (60-70 s) maximum.

C. Closing part:

The main part is followed by a period of relaxation and relaxation, and has included a set of exercises intended to return physiological responses to normal levels, and this part takes between (5-10 s).

Accordingly, the researcher set up the pregnancy training courses during the period of pregnancy, consisting of (10) weeks of training according to the basis of the formation of the training load, which divided the total period to weeks and then divided each week (4) daily training modules using the method of twisting. (1: 1), (2: 1)

Statistical analysis

All statistical analyses were calculated by the SPSS 22 statistical package. The results are reported as means and standard deviations (SD). Differences between the two groups were reported as mean difference $\pm 95\%$ confidence intervals (meandiff $\pm 95\%$ CI). Student's t-test for independent samples was used to determine the differences in physical and tactic parameters between the two groups.

Results

Table 1. Age and Anthropometric Characteristics of the Groups (Mean \pm SD)

Variables	Mean	Standard Deviation	coefficient of skewness
Age (years)	20.12	1.23	1.05
Height (cm)	184.5	6.34	0.37
Weight (kg)	77.32	5.7	0.45
Training experience (years)	8.31	2.63	0.18

Table 1 shows the age and anthropometric characteristics of the subjects. There were no significant differences were observed in the age and anthropometric characteristics for the subjects in the groups.

Table 2. Mean \pm SD and "T" sign. Between two Groups (experimental and control) in physical variables and Performance level in fencing

Variables	Experimental group		Control group		T sign.
	Before	After	Before	After	
Coordination (freq.)	11.90 \pm 0.65	13.10 \pm 0.55	11.85 0.73 \pm	11.99 \pm 0.58	Sign.
Agility (s)	12.04 \pm 0.18	11.82 \pm 0.27	12.08 \pm 0.28	12.00 \pm 0.34	Sign.
Movement speed (second)	6.22 \pm 0.19	6.14 \pm 0.09	6.23 \pm 0.25	6.19 \pm 0.23	Sign.
Leg Strength(kg)	89.42 \pm 3.94	92.22 \pm 4.89	89.25 \pm 4.42	90.74 \pm 4.66	Not Sign.
Back Strength(kg)	77.51 \pm 4.26	85.22 \pm 3.79	78.05 \pm 4.37	80.31 \pm 3.79	Sign.
Performance Level (Degree)	7.61 \pm 0.08	8.50 \pm 0.05	7.62 \pm 0.08	7.59 \pm 0.06	Sign.

It is clear from Table (2) the t-test showed statistically significant differences between the post measurements for the experimental and control groups in all physical variables except leg strength. And significant differences in Performance Level for the experimental group.

Discussion

The researcher attributed this to the good planning of the training program of the Sakio and the standardization of training loads in a scientific manner suitable for the age and training of the research sample, resulting in physical improvement reflected in the level of skill performance.

Amr et al., (2017) points out that through the peace train, Runs Jumps Hops are developed. It is important to exercise all the above skills because the athlete needs the motivation to change and the diversity of performance. Each skill helps to strengthen a different motor unit for an important development in the teaching of mathematical skills. Frequencies are very important for the development of a mathematical level to the highest degree

Amr et al., (2017) adds that guided motor speed training is easy and natural and involves many muscle mass and gains more compared to other exercises as a result of the use of the arms of the arms and legs compared to the mobile mat where the two men are used only.

In this regard, Tony Reynolds (2006) points to the advantage of using free-standing training exercises where athletes are found to be more precise when using tools (hoops, ladders). The change, variety and different configurations in the use of motor speed training helps to raise the level of different This is confirmed by (Kamal & Mohamed, 2001) that success in the performance of any skill requires the development of physical components that contribute to its performance in an ideal manner.

This is in line with (Marwan, 2003) finding that skill training alone is not sufficient to improve this skill and to produce fruitful results. In addition to skill

development, it is necessary to develop the motor abilities of the skill itself.

The association of improved muscular strength with improved skill performance confirms (Enrique et al., 2007) that strong muscles are necessarily fast muscles and therefore muscle strength of the main physical elements, which must be developed to improve motor speed.

This is confirmed by (Velmurugan & Palanisamy, 2012) that the training of SAQ stimulates muscle spindles resulting in high tension in the motor units released and the stimulation of other receptors that increase the number of active motor units, which is the reason for increased strength.

This is consistent with (Zoran, et al., 2011) that the training of the SAQ is one of the forms of training that contribute to the improvement of some physical capabilities, especially the most important speed.

The S.A.Q training focuses heavily on the proper running model (running techniques), as well as the explosive motor patterns in sports that require maximum speed, agility and motor speed as a prerequisite for achieving athletic achievement.

They are ideal for all sports, both collective and individual, for their particular fitness development, such as the ability to change directions and move from acceleration to sluggishness in addition to predictability, clarity of mind and quick reaction. They are all key keys to achieving athletic excellence in any sport.

The SAQ training can be used individually, i.e., training on each component, whether the speed of transition or agility or speed of the motor response separately from each other, and will achieve the desired results, but if used together and training them integrated within the module daily will achieve great results in improving sports performance.

This is where the importance of SAQ training is shown. It allows most trainers to diversify and innovate in their exercises because they contain multiple forms of mobility. They are not only concerned with linear movements (in one direction)



but also have lateral movements and vertical movements. Practitioner.

The results of this study are consistent with (Vikram, 2008; Remco et al., 2009; Mario et al., 2011) that the training of the SAQ contributes to an improvement in the acceleration time and muscle capacity of men and agility and motor speed.

Conclusion

Finally, the findings indicated that the S.A.Q training program for ten weeks could improve the physical variables (Leg strength, Back strength, Coordination, Agility, movement speed and performance level) for the experimental group. These results have to be taken into account by Trainers in order to better understand and implicate these concepts in training sessions and lessons.

Acknowledgements

Thank you to all of subjects to this experiment.

References

- Akhil M, Vikram S, Shyam L, Rai MN, 2011, Effect of six weeks S.A.Q. drills training programme on selected anthropometrical variables, Indian Journal of Movement Education and Exercises Sciences, Vol. I No. 1, PP.121-129
- Amr SH, 2012, Effect of functional exercises on the major elements in blood and agility reaction and the level of performance of composite skills in the origin of the fencing, scientific production, Journal of the Faculty of Physical Education for Girls (Science and Arts), Alexandria University.
- Amr SH, Naglaa E, Badia A, 2017, SAQ exercise, Dar El Fekr Elaraby, Cairo
- Baechle T, Earle R, Wathen D, 2000, Essentials of Strength Training and Conditioning, second edition. China: Human Kinetics.
- Enrique L, Francisco S, Enrique N, 2007, Analysis of the fencing lunge flight phase in EPEE, 12th Annual Congress of the ECSS, 11–14 July, Jyväskylä, Finland
- Kamal AHI and Mohamed SH, 2001, Modern Handball Quadrature "The Nature and Educational Dimensions - The Foundations of Measurement and Evaluation - Physical Fitness", The Book Center for Publishing, Cairo.
- Mario J, Goran S, Darija O, Fredi F, 2011, Effects of speed, agility, quickness training method on power performance in elite soccer players, Journal of Strength and Conditioning Research, 25(5)/1285–1292
- Marwan AA, 2003, Effect of Weight and plyometrics Exercises on Some Physical, Physical and Physiological Variables of Handball Players, PhD Thesis, Faculty of Physical Education, Minia University.
- Remco P, Jonathan B, Andrew E, 2009, Effects of SAQ Training and Small-Sided Games on Neuromuscular Functioning in Untrained Subjects, International Journal of Sports Physiology and Performance, 4, 494-505
- Sheppard JM, Young WB, 2006, Agility literature review: Classifications, training and testing, Journal of Sports Sciences, September; 24(9): 919 – 932
- Velmurugan G, Palanisamy A, 2012, Effects of Saq Training and Plyometric Training on Speed Among College Men Kabaddi Players, Indian journal of applied research, Volume: 3, Issue: 11, 432
- Vikram S, 2008, Effect of S.A.Q. drills on skills of volleyball players, A THESIS, Submitted to the Lakshmi Bai National Institute of Physical Education, Gwalior.
- Young WB, Farrow D, 2006, A review of agility: Practical applications for strength and conditioning. Strength and Conditioning Journal 28(5): 24-29.
- Zoran M, Goran S, Nebojša T, Nic J, Krešimir Š, 2011, Effects of a 12 Week SAQ Training Programme on Agility with and without the Ball among Young Soccer Players, Journal of Sports Science and Medicine, 12, 97-103.