Effect of SAQ and Swiss Ball Training on Lunge and Fleche Performance among State Level Women Fencers

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Abstract

The purpose of the study was to find out the effect of SAQ and Swiss ball training on lunge and fleche performance among state level women fencers. For this purpose, thirty fencers were selected at random from the SDAT, Chennai. Their age ranged between 16 and 21 years. The selected thirty fencers were randomly assigned into three groups namely; SAQ training group, Swiss ball training group and control group each consisting of ten subjects. The subjects were given SAQ and Swiss ball training for a period of ten weeks. The subjects were tested lunge and fleche performance. After the experimental period, the collected data was analysed by using analysis of covariance. The level of significance was fixed at 0.05 level. The results showed that the ten weeks of SAQ training had a significant improvement on the lunge and fleche performance. This restrictive concept is applied to SAQ training, as opposed to the fencer then takes a large step forward with the front foot, landing the foot flat on the floor.

Key words: SAQ and Swiss ball Training, Lunge and Fleche

Introduction

Fencing sport is required of skill, speed, and power. Skill is improved by long years of practice and experience under the guidance of expert coaching. Traditionally, Fencers need specific parts of all the physical qualities to succeed in competition and to prevent them from getting injured. With greater levels of strength and agility fencers find 'explosive' lunge movements and getting around the piste easier, All the training is designed to progress individuals so the type and intensity of fitness training done with our fencers is dependent on the individual level and age of the fencers involved in the sessions. As such training might be introductory, general, and (relatively) easy for the novice fencers, or they might be designed to be very tough and very fencing specific for elite fencers (with everything in-between) **(Rippetoe, 2000).**

The lunge plays an important role as a major skill in fencing where it forms the basis of one of the most definitive attacking moves. It is initiated by the extension of the elbow and shoulder of the sword arm. This initial movement is followed almost immediately by extension of the front knee. Only when these extensions have been initiated does the whole body then move forward driven by a vigorous extension of the back leg.

The purpose of this study was to determine which kinematic variables within the performance of the fencing lunge have the greatest effect on the overall speed. The independent variable was therefore the time taken from the initiation of the first movement to the impact of the tip of the blade on the target. The six dependent variables were the maximum angular velocities of the elbow of the sword-arm, and the right and left knees, and the time taken to achieve maximum angular velocity from rest. Using a lunge technique, fencers attempt to score points by touching their opponent with the point of their sword. A lunge begins with the fencer extending his sword arm with the point threatening a targeted area of the opponent's body. The fencer then takes a large step forward with the front foot, landing the foot flat on the floor. Once the sword touches the opponent, the fencer slightly lifts his hand to bend the sword upward and confirm the touch. The rear foot provides the leverage and thrust for the lunge, with the fencer pushing off and propelling himself forward into striking distance. Thus, the aim of the present study was to compare the effects of Swiss ball training and SAQ training on Lunge and Fleche performance of state level women fencers.

Methods and Materials

For this purpose, thirty fencers were selected at random from the SDAT, Chennai. Their age ranged between 16 and 21 years. The selected thirty fencers were randomly assigned into three groups namely; SAQ training group, Swiss ball training group and control group each consisting of ten subjects. The subjects were given SAQ and Swiss ball training for a period of ten weeks. The subjects were tested lunge and fleche performance. After the experimental period, the collected data was analysed by using analysis of covariance. The level of significance was fixed at 0.05 level.

Training Programme for SAQ (Speed, Agility and Quickness) and Swiss Ball

The SAQ training method more frequently uses the programmed than random type conditioning after the SAQ continuum. One SAQ session is composed of 7 components, where the main part of the session, explosion and expression of potential, are combinations of programmed and random conditioning. Integral planning and programming is required to progress from fundamental movement patterns to highly positional specific movements.

Swiss ball exercises were conducted 3 days (Monday- Wednesday-Friday) per week. Each fencer was given a Swiss ball in accordance to their height. The size of the Swiss balls were conducive to accomplishing >90° angle at both the hip and knee while sitting on the Swiss ball. The stability balls were either 55 or 65 cm in height. The volume of the exercise program gradually increased by increasing the repetitions and increasing the duration. Before each session, participants performed a 5-10 minute warm-up, and then stretching. The rest interval between the sets and circuits was

approximately 30 seconds. Exercise session lasted 30 minutes for week 1 and gradually increased up to 50 minutes in progress of the time. Before the week 1, ball familiarization movement was conducted for 2 weeks. All of the sessions were instructed and supervised by the same trainer. In each session and movement, participants were reminded to focus on the specific muscles which were activated while performing movement (for example quadriceps muscles during squat). The control group was told not to join any exercise program and to continue their routine daily activities.

Results on Lung and Fleche

The results presented in the table I shows that the pre and post test scores of SAQ Training group, Swiss ball training group and control group on lunge and fleche performance. The obtained pre test F value of 1.60 and 0.57 respectively was lesser than the required table value of 3.35. The obtained post test F value of 25.21 and 30.30 respectively was greater than the required table value of 3.35. Hence, it was proved that there was significant improvement in lunge and Fleche performance among women state level fencers due to SAQ Training and Swiss ball training.

Table I

Computation of Analysis of Covariance on Lunge and Fleche
(Scores in meters)

variables	Test	SAQ Group	Swiss Ball Group	Cont. Group	SV	SS	df	MS	F
Lung	Pre Test	1.41	1.42	1.40	B	0.00	2	0.00	1.60
					W	0.02	27	0.00	
	Post Test	1.52	1.51	1.40	B	0.09	2	0.05	**25.21***
					W	0.05	27	0.00	
	Adjusted	1.52	1.50	1.41	B	0.06	2	0.03	**28.54***
					W	0.03	26	0.00	
Fleche	Pre Test	2.70	2.72	2.71	B	0.00	2	0.00	0.57
					W	0.04	27	0.00	
	Post Test	2.84	2.84	2.72	B	0.09	2	0.05	**30.30***
					W	0.04	27	0.00	
	Adjusted	2.85	2.83	2.72	B	0.09	2	0.05	**41.28***
					W	0.03	26	0.00	

*Significant at 0.05 level of confidence for 2 and 27 (df) = 3.35, 2 and 26 (df) = 3.37

The statistical analysis on adjusted mean values using ANCOVA revealed that there was significant difference existed among SAQ Training group, Swiss ball Training group and control group on lunge, since the obtained adjusted mean F value 28.54 and 41.28 respectively was greater than the table value of 3.37 at 0.05 level.

Since the F value was significant, the results were subjected to post hoc analysis using Scheffe's confidence interval test. The results were presented in Table II.

Table II

Scheffe's Confidence Interval Test Score on Lunge and Fleche
(Scores in Meters)

variables	Cont. Group	SAQ Group	Swiss Ball Group	Mean Difference	CI
Lunge	1.41	1.52		**0.11***	0.03
	1.41		1.50	**0.09***	0.03
		1.52	1.50	0.02	0.03
Fleche	1.36	1.45		**0.09***	0.02
	1.36		1.43	**0.07***	0.02
		1.45	1.43	0.01	0.02

*Significant

The post hoc analysis of obtained ordered adjusted means proved that there was significant differences existed between SAQ Training group and control group. Further, there was significant difference between Swiss ball Training group and control group. There was no significant difference between treatment groups, namely SAQ Training group and Swiss ball training group.

The pre test, post test and ordered adjusted means are presented through bar diagram for better understanding of the result of this study in figures.

Figure – 1
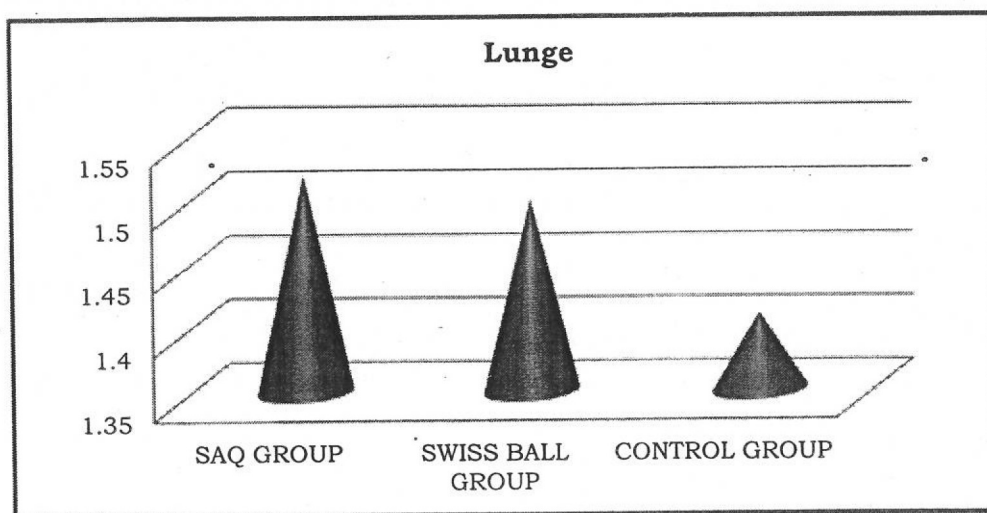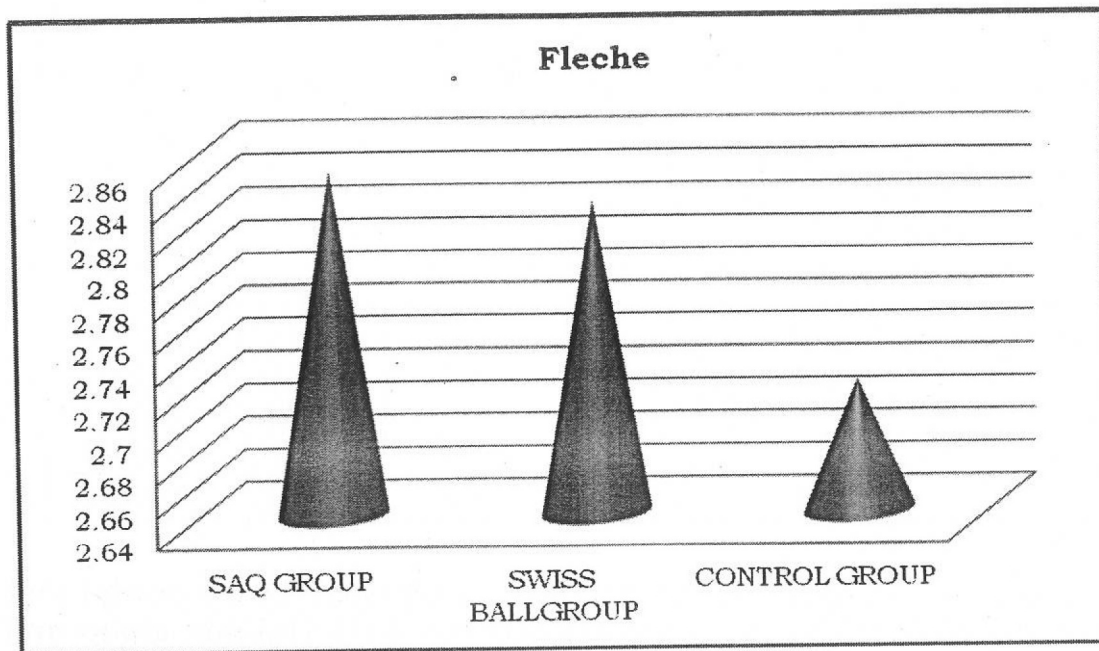### Bar Diagram on Adjusted Means of Lunge

Figure – 2

Bar Diagram on Adjusted Means of Fleche

Fleche

Discussion and Conclusion

Sports training are the process of sports protection based on scientific and educational principles aimed at top-level performance in one of sports events **(Hardayal Singh, 1991)**. Training means a systematic program of conditioning exercise and physical activates designed to improve the physical fitness and skill of the players.

The results proved that the SAQ (Speed, Agility and Quickness) and Swiss Ball exercise improved indices of body composition and performance of lunge and Fleche. However, there were no differences between the two groups.

References

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