



## Effect of Swiss Ball Training on Selected Fitness and Skill Performance Variables among Elite Football Players

S.Ramya<sup>1</sup> & Dr.Amsa Natarajan<sup>2</sup>

<sup>1</sup>Ph.D Scholar, TNPESU, Chennai, Tamilnadu, India.

<sup>2</sup>Principal, Sri Sarada College of Physical Education for Women, Salem, Tamilnadu, India.

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### Abstract

*The purpose of the study was to find out the effect of Swiss ball training on selected fitness and skill performance variables among elite foot ball players. Thirty women football players were selected as subjects from Sri Sarada College, Salem. The players who participated in state and inter university football tournament were selected as subjects on a purpose random sampling. As per the university regulation their age was ranged from 20 to 24 years. They were divided into two groups such as experimental group and control group of fifteen each. During the training programme the experimental group underwent Swiss ball training along with their regular physical activities for five days in a week for eight weeks and the control group was not exposed to any training other than their regular physical activities. The subjects were tested prior to and after the experimentation on the selected fitness and skill performance variables such as muscular strength, explosive power, dribbling and kicking performance. The collected data from the subjects initial and final readings were statistically analyzed to assess the significance by computing 't' ratio. The level of significance was chosen at 0.05 level of confidence which was considered adequate for the purpose of the study. The findings of the study showed that there was a significant improvement found between pre and post test on selected fitness and skill performance variables among elite football players. Further the result also indicated that the eight weeks of Swiss ball training have contributed significantly on the muscular strength, explosive power, dribbling and kicking performance.*

**Keywords:** Swiss ball training, muscular strength, explosive power, dribbling and kicking performance.

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### Introduction

Football players need a combination of technical, tactical and physical skills, in order to succeed. Improving aerobic capacity and overall fitness boosts performance on the football field. The amount of force a muscle can produce with a single maximum effort, size of muscle cells and the ability of nerves to activate them are related to muscle strength. Leg muscle strength is an important factor in playing football. Many researchers find that there is a close correlation between the knee extension strength and ball speed. Recently the iso-kinetic principle has been used to evaluate dynamic strength in many branches of sports sciences. Muscle strength of the football players has been explored in the game. An important aspect of football player's lower extremity is to be used to execute most of the skills in football. It is evident from the practical experiences in football coaching that tremendous leg muscle strength required for efficient execution of football skill both on and off the grounds.

The term "Swiss ball" was used when American physical therapists began to use those techniques in North

America after witnessing their benefits in Switzerland. A primary benefit of exercising with a Swiss ball as opposed to exercising directly on a hard flat surface is that the body responds to the instability of the ball to remain balanced, engaging many more muscles those muscles become stronger over time to keep balance. Most frequently the core body muscles as the abdominal muscles and back muscles and leg muscles are the focus of swiss ball fitness programs. Swiss ball exercises are central to a program designed to improve core stability muscles in recent years. Health and fitness practitioners have given greater and greater emphasis to core stability training for injury prevention and performance enhancement. The concept of developing strong muscles in the trunk is believed to reduce the risk of both acute and chronic injury and also enhance weak core muscles. Since, all sports movements are created by the contraction of muscles; therefore strength is an important component of various conditional abilities, skills and tactical actions.

### Review of Related Literature

Chandraleka & Jothi (2013) analyzed the influence of Swiss ball training on selected physical fitness variables among foot ball players. The subjects for the study were selected randomly from different colleges of Chennai

### Correspondence

S.Ramya

E-mail: pkvramys@gmail.com, Ph. +9188703 76979

district, Tamil Nadu, the age level of the subjects ranged from eighteen to twenty five. The researcher selected twenty male students as experimental group. Experimental group under went eight weeks of swiss ball exercise training program. Pre test and post test were taken before and after the training program for experimental group. The dependent ‘t’ test was used, at 0.05 level of confidence. The result of the study showed that the training program had resulted in a significant improvement in the abdominal strength and flexibility of college students.

Kamala kannan & Arumugam (2011) find out the effect of concurrent and isolated swiss ball and Jump rope training on leg strength among men foot ball players. Sixty men foot ball players from various colleges in and around Chennai, were divided into four equal groups of each fifteen, Group I underwent swiss ball training Group II underwent Jump rope training Group III underwent swiss ball training programme for three days per week for first six weeks and jump rope training programme for three days per week for the remaining six weeks and Group IV was acted as control group among the strength parameters leg strength was selected as criterion variables. All the subjects were tested on selected dependent variables, prior and immediately after the training. The analysis of co variance was used the analysis the significant different if any among the groups and the 0.05 level of significance. The result of the study revealed that the concurrent training group had significant improvement on leg strength then the isolated training

group.

**Methodology**

To achieve the purpose of the present study, thirty women football players were selected as subjects from Sri Sarada College, Salem. The players who participated in state and inter university football tournament were selected as subjects on a purpose random sampling. As per the university regulation their age was ranged from 20 to 24 years. They were divided into two groups such as experimental group and control group of fifteen each. During the training programme the experimental group underwent Swiss ball training along with their regular physical activities for five days in a week for eight weeks and the control group was not exposed to any training other than their regular physical activities. The subjects were tested prior to and after the experimentation on the selected fitness and skill performance variables such as muscular strength, explosive power, dribbling and kicking performance and they were assessed by using standardized test protocols such as Sit ups, Standing Broad Jump, Morgan Christian Test and Warner Test. The collected data from the subjects initial and final readings were statistically analyzed to assess the significance by computing ‘t’ ratio. The level of significance was chosen at 0.05 level of confidence which was considered adequate for the purpose of the study.

**Analysis of Data**

**Table I.** Computation of ‘t’-ratio between the pre and post tests on muscular strength and explosive power of Experimental and Control groups

Variable	Group	Mean		Dm	σDm	‘t’ ratio
		Pre test	Post test			
Muscular strength	Experimental Group	18.46	28.26	9.8	3.25	3.01*
	Control Group	18.46	18.66	0.2	3.35	0.08
Explosive power	Experimental Group	1.60	2.39	0.79	0.25	3.19*
	Control Group	1.57	1.60	0.03	0.14	0.21

\* Significant at 0.05 level of confidence with (df) 28 was 2.048

The table – I indicates the obtained ‘t’ test value of muscular strength and explosive power in experimental group are 3.01 and 3.19, which are greater than table value of 2.048 with df 28, it indicates there was significant improvement due to the effect of Swiss

ball training. The obtained ‘t’ test value of muscular strength and explosive power in control group are 0.08 and 0.21 which are less than the table value of 2.048 with df 28 at .05 level of confidence.

**Table II.** Computation of ‘t’-ratio between the pre and post tests on kicking and dribbling performance of Experimental and Control groups

Variable	Group	Mean		Dm	σDm	‘t’ ratio
		Pre test	Post test			
kicking performance	Experimental Group	34.85	38.80	3.95	0.82	4.81*
	Control Group	33.45	33.90	0.45	0.65	0.69
dribbling performance	Experimental Group	12.40	14.67	2.27	0.06	3.78*
	Control Group	12.93	13.00	0.07	0.52	0.13

\* Significant at 0.05 level of confidence with (df) 28 was 2.048

The Table – II indicates the obtained ‘t’ test value of kicking and dribbling performance in experimental group are 4.81 and 3.78, which are greater than table value of 2.048 with df 28, it indicates there was significant improvement due to the effect of Swiss ball training. The obtained ‘t’ test value of kicking and dribbling performance in control group are 0.69 and 0.13 which are less than the table value of 2.048 with df 28 at .05 level of confidence.

**Discussion on Findings**

Swiss ball exercise has become increasingly popular especially in the last decade. However it is well recommended that performing exercise on an unstable surface, when compared stable surface, arouses a greater influence on muscular activity. Dynamic nature of the swiss ball exercise can improve posture, balance, co-ordination, body awareness, flexibility and strength. The use of Swiss ball in strength and conditioning programs has become ubiquitous. Swiss ball have been in incorporated into strength training reigns and touted as a means to more effectively train the musculo skeletal system. This may be reason for better enhancement of improvement on selected fitness and skill performance variables among elite foot ball players.

**Conclusions**

1. The findings of this study revealed that there was a significant difference found between pre and post test on selected fitness and skill performance variables among elite football players.
2. The Swiss ball training group showed better improvement on selected fitness and skill performance variables among elite football players when compared to control group.

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