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**Dr. A Nallamuthu**  
Assistant Professor,  
Dhanalakshmi Srinivasan  
College of Physical Education,  
Perambalur, Tamil Nadu, India

**Dr. G Jayapal**  
Assistant Professor, Meenatchi  
Physical Education College,  
Thathanur, Tamil Nadu, India

**Corresponding Author:**  
**Dr. A Nallamuthu**  
Assistant Professor,  
Dhanalakshmi Srinivasan  
College of Physical Education,  
Perambalur, Tamil Nadu, India

## Combined and isolated effect of swiss ball and ladder training on leg explosive power among school students

**Dr. A Nallamuthu and Dr. G Jayapal**

### Abstract

This study was to find out the combined and isolated effect of swiss ball and ladder training on leg explosive power among school students. To achieve this purpose of the study eighty men students selected from in and around Perambalur, Tamil Nadu, India and their age ranged between 14-17 years will be selected as subjects. The selected subjects will be divided into four equal groups, in which, group – I (n = 20) will undergo swiss ball training for five days per week for twelve weeks, group – II (n = 20) will undergo ladder training for five days per week for twelve weeks, group – III (n = 20) will undergo both swiss ball and ladder training for five days per week for twelve weeks and group – IV (n = 20) will act as control which do not participate in any special training. The subjects were tested on leg explosive power before and after the training period. Prior after the training period leg explosive power were measured by using standing broad jump. Analysis of Covariance (ANCOVA) was applied as statistical tool for the present study. The Scheffé S test was used as post-hoc test at whatever point the 'F' - ratio of the adjusted post-test means were discovered to be significant at 0.05 level of significance. Both swiss ball, ladder training and combined training group influence on leg explosive power when compared with control group. Combined (swiss ball and ladder training) may have better influence on leg explosive power of school students.

**Keywords:** Swiss ball training, ladder training and leg explosive power

### Introduction

The importance of physical employment has been emphasised by the value of practise in a deterrent medicine programme. According to studies linking real work levels and cardio-respiratory health to the condition, a sedentary lifestyle or less active job increases the risk of lethal and non-lethal ischemic coronary sickness. One of the auxiliary equipment items utilised in training routines that aids the body in acquiring wellness and dynamic capabilities is the Swiss ball.

A ladder practise is a method for building strength and setting up for sports that functions similarly to an exercise with an overt repeating rising and diving pattern. Strong persistence and decoration techniques called ladders are designed to increase your total readiness volumes while keeping an eye on the real design and system.

Unsafe power is the ability to apply most areas of strength for outrageous rapidly in a hazardous emission of improvements. The two pieces of power are strength and speed. In many games and activities that require a sensitive power from explicit muscles and the capricious muscle choking influences are immediately followed by concentric compressions.

In many games or events a contender's ability to make force quickly in a strong improvement is of most outrageous importance. Perilous muscle power has been exhibited to be a confining variable in sports execution and is significantly associated with the muscle's ability.

### Statement of the problem

The purpose of the present study was to find out the swiss ball and ladder training on leg explosive power among school students.

### Methodology

To achieve this purpose of the study eighty men students selected from in and around Perambalur, Tamil Nadu, India and their age ranged between 14-17 years will be selected as subjects.

The selected subjects will be divided into four equal groups, in which, group – I (n = 20) will undergo swiss ball training for five days per week for twelve weeks, group – II (n = 20) will undergo ladder training for five days per week for twelve weeks, group – III (n = 20) will undergo both swiss ball and ladder training for five days per week for twelve weeks and group – IV (n = 20) will act as control which do not participate in any special training. The subjects were tested on leg explosive power before and after the training period. Prior

after the training period leg explosive power were measured by using standing broad jump.

### Analysis of data

The data collected prior to and after the experimental periods on leg explosive power on swiss ball, ladder training and combined training and control group were analysed and presented in the following table-I.

**Table 1:** Analysis of covariance on leg explosive power of combined and isolated swiss ball and ladder training group and control group

	SBT Group	LT Group	CT Group	Control Group	SOV	SS	DF	MS	'F'
Pre-test mean	1.57	1.597	1.525	1.44	BW	0.0005	3	0.002	1.51
S.D	0.107	0.14	0.135	0.256		0.087	76	0.001	
Post-test mean	1.8	1.911	1.739	1.43	BW	1.59	3	0.529	70.28*
S.D	0.149	0.12	0.185	0.25		0.57	76	0.008	
Adj. Post- test mean	1.74	1.88	1.90	1.56	BW	1.47	3	0.49	84.90*
						0.43	75	0.0006	

\* At a 0.05 threshold of significance, significant. (With df 3 and 76 and 3 and 75, the table values needed for significance at the 0.05 level of significance were 2.09 and 2.08, respectively.)

SBT: Swiss ball training group

LT: Ladder training group

CT: Combined training group

The resulting F value on the pre-test scores was 1.51, which is less than the 2.09 needed to be significant at the 0.05 level. This demonstrates that there are no major differences between the groups at the beginning and that the individuals were successfully divided into four groups using a randomization process. Analysis of post-test results demonstrates that there are substantial differences between the groups since the obtained "F" value of 15.53 is higher than the necessary "F" value of 2.09. This demonstrates that the participants' post-test means varied significantly from one another.

Adjusted mean scores are computed and statistically processed after taking into account pre- and post-test scores for each group. The computed "F" value of 80.23 is higher than the necessary "F" value from the table, which is 2.08. This demonstrates that the twelve weeks of Swiss ball training, ladder training, and combination training caused substantial variations in the adjusted averages. The findings are submitted to post hoc analysis using Scheffe's Confidence Interval Test since the considerable improvements were noted. Table 4.16 presents the findings.

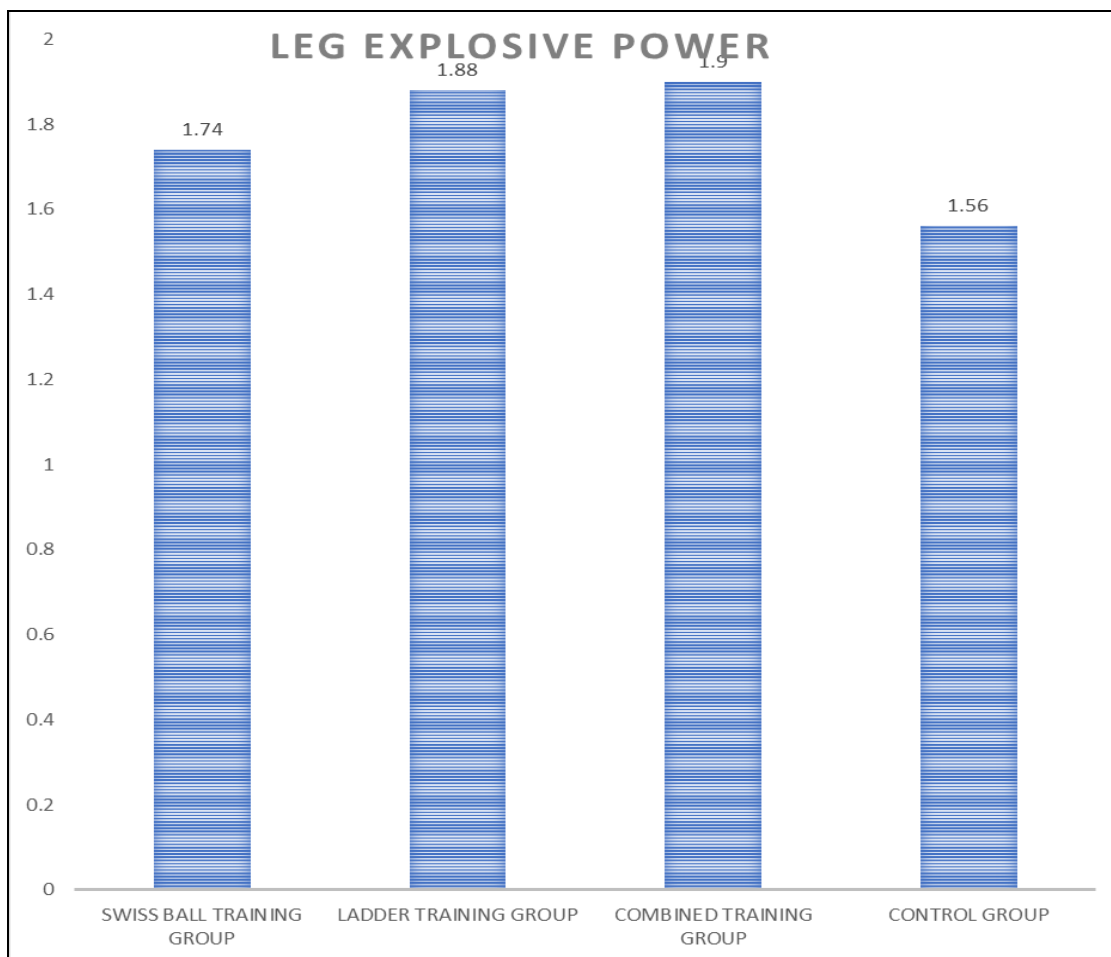
**Table-2;** Scheffe's confidence interval test scores on leg explosive power

Adjusted post-test means				Mean Difference	Confidence Interval Value
SBT Group	LT Group	CT Group	Control Group		
1.74	1.88	---	---	0.15	0.18
1.74	---	1.90	---	0.17	
1.74	---	---	1.56	0.18*	
---	1.88	1.90	---	0.02	
---	1.88	---	1.56	0.32*	
---	---	1.90	1.56	0.34*	

\*Significant at 0.05 level.

Since the obtained values are higher than the required value and the confidence interval needed to be significant at the 0.05 level is 0.18, it can be seen that the significant difference is indeed present. For a better understanding of the findings of

this study, see Figure-4.8, which uses a bar diagram to illustrate the ordered adjusted means on leg explosive power.



**Fig 1:** Adjusted post-test mean values on leg explosive power of swiss ball training, ladder training, combined training group and control group

### Conclusion

From the analysis of the data, the following conclusion were drawn.

The research study also shows that combined and isolated swiss ball training and ladder training have improved leg explosive power when compared with the control group. In addition, the results of the tests shows that there was no significant difference between experimental groups on leg explosive power. Combined (swiss ball and ladder training) may have better influence on leg explosive power of school students.

### Recommendations

The following recommendations were drawn, from the results of the present study:

1. Further studies may be made to investigate the effect of swiss ball training and ladder training on anthropometric measures, bio-chemical variables.
2. The effect of combined and isolated swiss ball training and ladder training programmes can be assessed on physiological factors.
3. In the current study, the subjects chosen was male students and in future studies, the subjects may be chosen obese female students and middle aged obese men and women., etc.

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