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The effects of wobble board and swiss ball training on the variable of balance among school students

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Abstract

The aim of the present study was to investigate the effects of wobble board and swiss ball training on the variable of Balance among school students. A random group design was adopted for the study. Forty-five (N=45) student from seventh and eighth standard were selected as subjects on random basis and their age ranging between 13 to 14 years. The students were selected from the Government Model Senior Secondary School Sector-56, Chandigarh. Pre test was conducted on the motor fitness variable of abdominal strength. An Experimental Group-I was exposed to wobble board training, where as the other experimental group-II was exposed to swiss ball training, control group was not exposed to do any specific training other than their daily routine activities. The training was given for six days a week for duration of twelve weeks. The Analysis of Covariance (ANCOVA) technique was used to test the adjusted post- test mean difference among school students on the variable of Balance. After the twelve weeks, ANCOVA indicated that there was a effect of training in Balance $F(2, 41) = 3.23, p < 0.05$. The result revealed that a significant differences have been observed among school students of different groups namely; wobble board, swiss ball and control group on the variable Balance.

Keywords: Balance, wobble board, swiss ball and control group

Introduction

Physical education which is commonly a part of the curriculum at school level includes training in the development and care of the human body and maintaining physical fitness. Physical education is also about sharpening overall cognitive abilities and motor skills via athletics, exercise and various other physical activities like martial arts and dance. Here are some of the benefits that highlight the importance of physical education. Athletes prepare to achieve a specific goal through structured focused training. The intent of training is to increase the athlete's skills and work capacity to optimize athletic performance. Training is undertaken across a long period of time and involves many physiological, psychological and sociological variables. The science of sports and preparation of athletes is continuously evolving. This evolution is based largely upon an ever expanding understanding of how the body adapts to different physical and physiological stressors. Central to training theory is the idea that a structured system of training can be established that incorporates training activities that target specific physiological, psychological and performance characteristics of individual sports and athletes. It follows that it is possible to modulate the adaptive process and direct specific training outcomes. The goal of training is to induce physiological adaptation and maximum performance at specific time point, usually during the main competition of the year. To accomplish this goal, the athlete's preparedness must increase at the appropriate time, thus ensuring a greater potential for a high level of performance. The athlete, level of preparedness is a complex interaction of developing skills, bio-motor abilities, psychological traits and the management of fatigue (Bompa, 1999).

A wobble board is an exercise device used to improve balance, functional strength and mental focus. Wobble boards have a flat surface supported over a less stable cylinder or ball. Balancing on the flat surface challenges your muscles and proprioception as your body and mind adapt to moving on the unstable support below. Wobble boards are available in different sizes and shapes and can be modified for different ability levels. The swiss ball is now widely used around the world in everything from light aerobic classes to professional athletic training institutions, as more and more people learn the benefits of using this simple yet highly

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effective training aid (Milligan 2005). Most of the coaches or fitness trainers are used wobble board and swiss ball to take effective results by using these modalities. Balance is a state of the mind to hold a particular stance in a particular time or maintain body position during moment. Balance is an important requirement for the successful performance of many of our daily activities. The control of balance involves the complex interaction of multiple systems.

Methodology

The study was conducted on forty five (N=45) students from Government Senior Secondary School, Sector-56, Chandigarh aged between 13 to 14 years. A random group design was adopted for the study and all the subjects were randomly divided in to three groups and each group had fifteen (N=15)

subjects respectively An Experimental Group-I was exposed to wobble board training, where as the other experimental group-II was exposed to swiss ball training, control group was not exposed to do any specific training other than their daily routine activities. The experimental duration was of 12 weeks and after the experimental treatment, all the subjects were measured on the selected motor fitness parameters. The final test scores formed as post test scores of the subjects. Balance measurements were taken with Wobble Balance Test. The Analysis of Covariance (ANCOVA) at 0.05 level of significance was applied.

Results

The data collected was analyzed by using descriptive statistics and scores of post mean of balance was presented in table-1.

Table 1: Descriptive Statistic in Balance Test of Three Different Groups of School Students

Groups	Pre Test		Post Test		Adjusted Mean
	Mean	SD	Mean	SD	
Wobble Board Group	44.93	25.63	151.93	43.64	154.812
Swiss Ball Group	66.20	26.92	119.13	46.84	113.430
Control Group	45.06	71.46	71.46	22.77	74.291

Table-1 revealed pre test mean, pre test SD, post test mean, post test SD, and adjusted mean of three different groups namely; wobble board group, swiss ball group and control group. The pre test mean & SD of wobble board group was 44.93±25.63, pre test Mean & SD of swiss ball group was 66.20±26.92, pre test Mean & SD of control group was

45.06±22.59. Post test mean and SD of wobble board group, swiss ball group and control group were 151.93±43.64, 119.13±46.84 and 71.46±22.77 respectively. The adjusted mean of wobble board group was 154.812, adjusted mean of swiss ball group was 113.430 and adjusted mean of control group was 74.291.

Table 2: Analysis of co-variance in balance test of three different groups of school students

	SS	Df	MSS	F value	Sig. (p-value)
Treatment	48635.906	2	24317.953	16.525*	.000
Error	60335.819	41	1471.605		

*Significant, f .05 (2, 41) = 3.23

Table-2 shows that wobble balance test perform for balance among school students of different groups namely; wobble board group, swiss ball group and control group was found statistically significant at .05 level because obtained F-value (16.525) was greater than the required tabulated value (3.23)

needed for significance at .05 level also the p-value is less than .05. Least Significant Difference (LSD) Post Hoc test was also employed to find out if any significant difference existed among three groups. The same is depicted in table-3.

Table 3: Pair Wise Mean Comparison in Balance Test of Three Different Groups of School Students

Wobble board	Swiss ball	Control group	Mean difference	p-value
154.812	113.430	-----	41.382	.008
154.812	-----	74.291	80.521	.000
-----	113.430	74.291	39.139	.012

*Significant, f .05 (2, 41) = 3.23

Table-3 shows pair wise comparison among all the three groups. The mean difference between wobble board and swiss ball group is 41.382 and the mean difference between wobble board and control group is 80.521. Further, the mean

difference between swiss ball and control group is 39.139 which is significant at .05 levels because the p-value is less than .05.

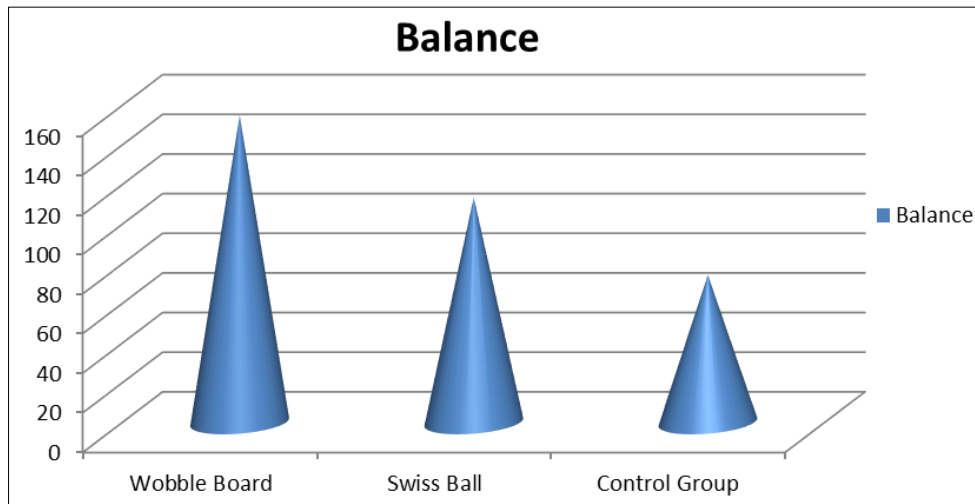


Fig 1: Graphical representation of mean scores with regard to school students on the variables balance

Results

The pre- and post-test scores of the subjects in the three different groups on balance were compared to determine if there were any changes between the groups and within each group. This was done in order to determine whether the wobble board training or swiss ball training program had any effect on the subjects' balance performance. Pre test for balance was conducted seven days before the training and post test was conducted on the very next day on completion of twelve weeks training program.

It is evident from the above results of table 1 that significant differences have been observed between pre-test scores and post-test scores (experimental group) which were compared by ANCOVA on the variable balance among school students. The above results indicate that after giving twelve weeks of wobble board and swiss ball training program there is significant improvement in balance among school students. The above results indicated that sufficient Wobble Board and Swiss Ball training to balance individual to maintain his neuromuscular system in static condition for an efficient response to control it in a specific efficient posture while it is moving. Bal (2012) ^[3] explored that Swiss ball exercises programme may be recommended to improve static and dynamic balance and may contribute to enhance concentration based performance. Balogun *et al.* (1992) ^[4] investigated the effects of the wobble board exercise regimen can be used to strengthen weak lower extremity muscles and improve static balance of sedentary subjects. Wonjong *et al.* (2017) ^[9] investigated the effects of static and dynamic balance by using medicine ball and swiss ball exercises. A significant difference was found between balance error scoring system, one leg standing test and functional reach test after pre and post exercise of the medicine ball and swiss ball.

Conclusion

It is concluded from the result that that significant differences have been observed among school students of different groups namely; wobble board, swiss ball and control group on the variable Balance.

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