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## Physical fitness components response to the influence of different physical activities among school girls

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**Abstract**

The study was designed to investigate the physical fitness components response to the influence of different physical activities among school girls. In order to achieve the purpose of the study, forty five (N = 40) school girls were selected from Katary village, The Nilgiri District. The subject age ranged from 14 to 17 years. The subjects were divided into two equal groups. The group – I was underwent Different physical training (DPA), for the period of 8 weeks and group II acted as control Group (CG), they did not participate any specific training programme. Each group consists of 20 subjects. Physical fitness components flexibility was assessed by sit and reach test and unit of measurement was in centimeters, muscular strength was assessed by modified sit ups and unit of measurement was in counts, balance was assessed by stroke balance standard test and unit of measurement was in seconds. The result of the present study explored that different physical activities produced significant improvement over flexibility, muscular strength and balance among school girls.

**Keywords:** different physical activities, flexibility, muscular strength balance, school girls

**Introduction**

“Sports bring people closer to one another and help nation to a better mutual knowledge and understanding”. (Leohid L. Brazew, 2000). “When you are fit, you look better and are likely to have more physical energy; when you feel fit, two good things of life have more meanings two sky is bluer, the music is sweeter, the steak is tastier”. Recently most of the boys and girls are pretentious by sports activities and increasing the number that are representing in the sports area. As anticipatory and curative health measures, it has become more successful throughout the world and, millions of teenagers should have chance of enjoying sports. During the last decade we have discovered that good health is no longer a matter of chance, but rather a matter of choice. If you choose to take responsibility for your health by exercising regularly and by consistently adopting other positive life style habits, you can not only promote better health, but also you can decrease your risk of disease, disability and premature death. (Robert Hockey, 1993).

At present scenario the world is full of competition. In every phase of life people have to face one or other kind of competition. In this competitive world sports and games occupy a unique position. It is the area of friendly rivalry. Top class international sports meets are considered to be the international ambassadors for world supermodel in various sports and games. Games and sports have been part of human life almost since the time immemorial. The games and sports have been indispensable to mankind and have become part of his culture. Today, life mostly depends upon science and technology. In such circumstance people need more exercise to keep the body and mind fit to execute the activity efficiently. Sports is the way which we use our physical capacities to play. Sports is important in other ways, when one’s body works better his mind works better, his brain and his body are interrelated. Sports allows you to blow off tension, to forget your problems for a while and to go out and have a good time no matter what other pressures one may be under in his life. Sports have a very prominent role in modern society. It is important to an individual, a group, a nation-indeed the whole world. Sports have ever reflected developments in society. Sport, indeed has been a mirror of society. Sports is an institutionalized competitive activity that involves vigorous physical exertion or the use of relatively complex physical skills by individuals whose participation is motivated by a

combination of the intrinsic satisfaction associated with the activity itself and external reward earned through participation.

Sports have great importance in human life. In this present day, no importance was attached to sports in the country. But, now it was realized that sports are very useful. So, every educational institution of the country provides sports for all. As a matter of fact, sports are necessary part of education. Sports teach many qualities for the students. When they take part in sports, they have to obey some rules. So, sports teach discipline, which is very useful in practical life (Sidhu *et al.*, 2002).

In general physical training imposes stress on the body tissues, in particular, the muscles. Chronic muscular activity which occur during training can be considered a positive form of stress because it stimulates growth and improves muscular performance. The most of the changes that occur in the muscle as a result of training are gradual and occur over several weeks or months. The magnitude of these muscular adaptations are somewhat proportional to the amount of exercise performed during training. There is now a much broader base of knowledge regarding these special human beings and athletes and this is directly reflected in the methodology of training. New methods are surfacing which are often found to be useful in daily training (Wilmore and Costil, 1988) [3].

The information collected from the training process includes physiological, biochemical, psychological, social and methodological information. Although this information is diverse it comes from the same source namely the athlete, and is produced by the same process, the training process. Training programme needs to also include periods of regeneration and recovery between training lessons, which is a necessary factor to ensure continuous improvement in the athlete's performance (Bompa, 1994).

Sports training is the basic form of an athlete's training. It is the preparation systematically organized with the help of exercises which in fact is a pedagogically organized process of controlling the development of an athlete (Howard and Rosemary Payne, 1981).

Sports training is a basic preparation of the sportsmen for better performance through physical exercise. It is based on scientific principles of aiming at education and performance, enhancement. Sports activities consists of motor movement and action and their success depends to a great extent on how correctly they are performed. Techniques of training and improvement of tactical efficiencies plays a vital role in training process (Fox, 1984) [1].

### Methods

In order to achieve the purpose of the study, forty (N = 40) school girls were selected from Katary village, The Nilgiri District. The subject age ranged from 14 to 17 years. The subjects were divided into two equal groups. The group – I was underwent to Different Physical Activities (DPA), for the period of 8 weeks and group II acted as control Group (CG), they did not participate any specific training programme. Each group consists of 20 subjects.

### Experimental design

Physical fitness components flexibility was assessed by sit and reach test and unit of measurement was in centimeters, muscular strength was assessed by modified sit ups and unit of measurement was in counts, balance was assessed by stroke balance standard test and unit of measurement was in seconds.

### Training programme

Training programme is lasted for 60 minutes a day for a session, 3 days in week for a period of 8 weeks. Those 60 min consists of 10 minutes warm-up, 40 min respective training and 10 minutes for warm-down. Each two week's 5% of load was increased from 50% to 80% of load.

### Statistical techniques

The collected data on physical variables due to the effect of different physical activities was analyzed by computing mean and standard deviation. In order to find out the significant improvement if any 't' test was applied. 0.05 level of confidence was fixed to test the level of significance.

**Table 1:** Computation of 't' ratio between pre and post-test, means of control group and experimental group on flexibility

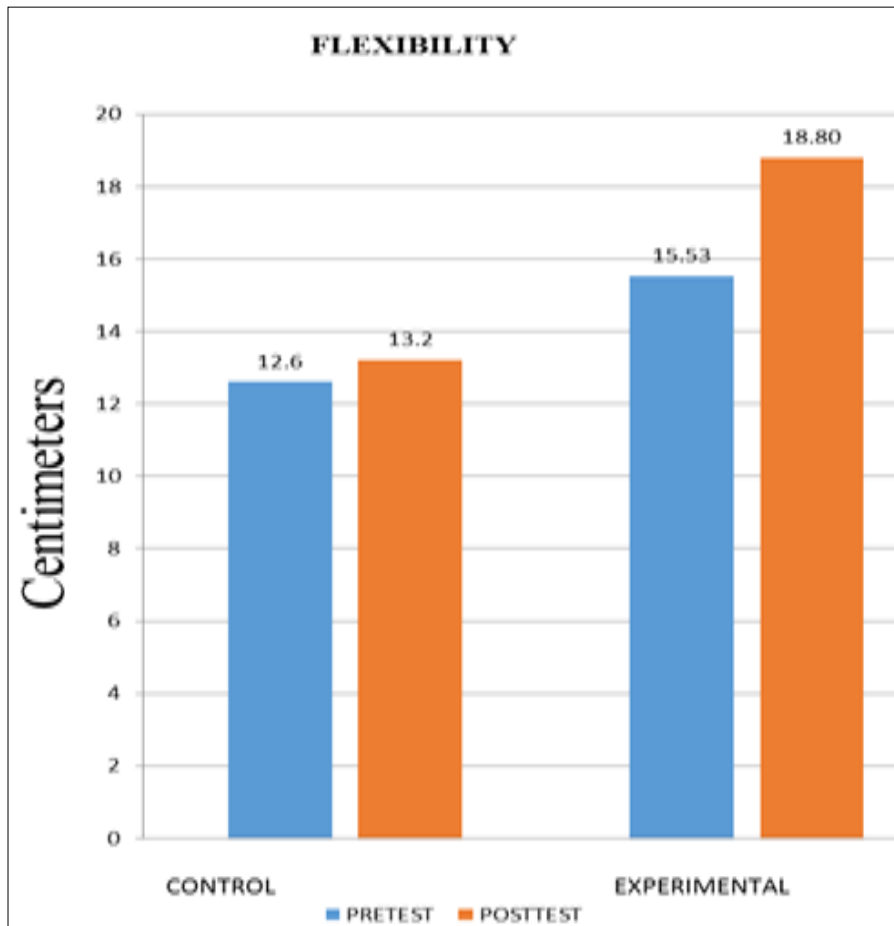
Group	Test	Mean	Standard deviation	Mean difference	Standard error of mean	't' ratio
Control Group	Pre-test	12.6	1.80	0.6	0.349	1.71
	Post-test	13.2	1.74			
Experimental Group	Pre-test	15.5	2.42	3.27	0.50	6.50*
	Post-test	18.8	2.18			

(Scores in centimeters)

Table 1 reveals the computation of 't' ratio between pre-test and post-test of control group and experimental group flexibility of high school boys. The mean values of pre and post-test of control group and experimental group were 12.6, 13.2, 15.5 and 18.8 respectively. Since, the obtained 't' ratio of control group was 1.71 was less than the required table value of 2.145, it was found to be statistically not significant and the obtained 't' ratio 6.50 was greater than the required

table value of 2.145, it was found to be statistically significant at 0.05 level of confidence for the degrees of freedom 1 and 14. The result clearly indicated the flexibility of control group had not been improved and the flexibility of experimental group had been improved due to influence of different physical activities programme among school girls.

The bar diagram shows the mean values of pre and post-test on flexibility of experimental group and control group.



(Scores in centimeters)

**Fig 1:** Graphical representation of individual comparison between pre and post-test on flexibility

**Table 2:** Computation of 't' ratio between pre and post-test, means of control group and experimental group on muscular strength

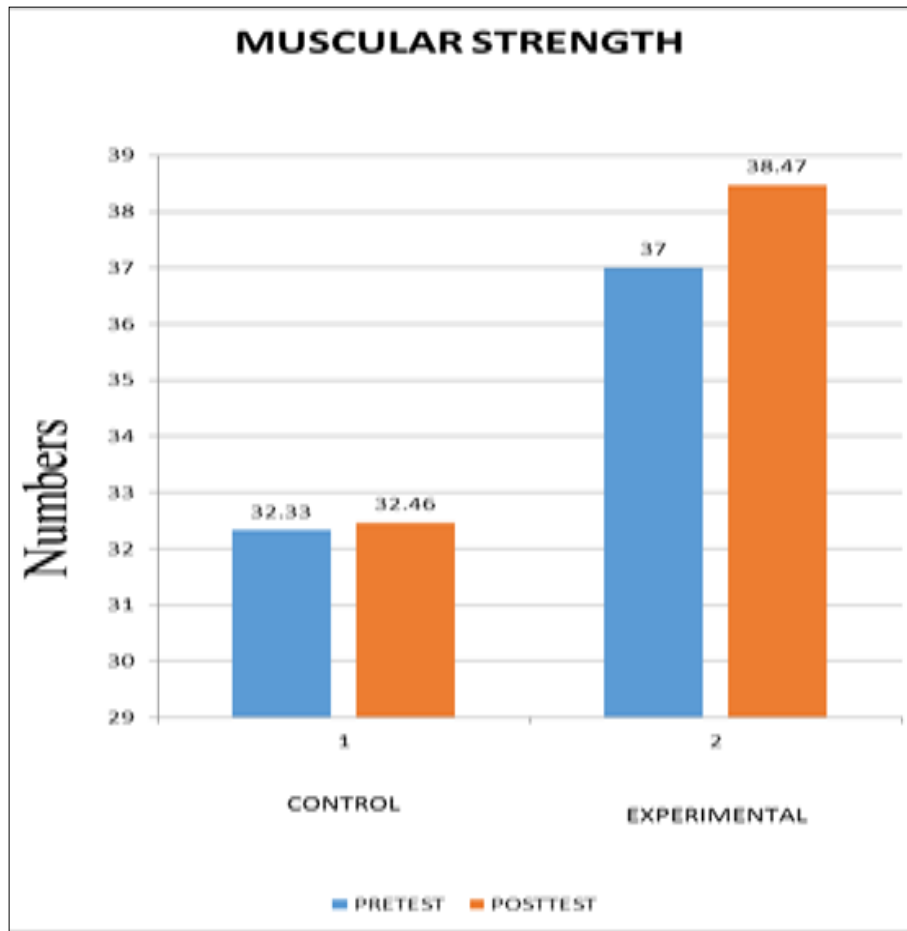
Group	Test	Mean	Standard deviation	Mean difference	Standard error of mean	't' ratio
Control Group	Pre-test	32.33	3.61	0.13	0.13	1.00
	Post-test	32.46	3.44			
Experimental Group	Pre-test	37.0	5.26	1.46	0.24	6.20*
	Post-test	38.47	4.82			

(Scores in numbers)

Table 2 reveals the computation of 't' ratio between pre-test and post-test of control group and experimental group muscular strength of high school boys. The mean values of pre and posttest of control group and experimental group were 32.33, 32.46, 37.0 and 38.47 respectively. Since, the obtained 't' ratio of control group was 1.00 was less than the required table value of 2.145, it was found to be statistically not significant and the obtained 't' ratio 6.20 was greater than the required table value of 2.145, it was found to be statistically

significant at 0.05 level of confidence for the degrees of freedom 1 and 14. The result clearly indicated the muscular strength of control group had not been improved and the muscular strength of experimental group had been improved due to influence of different physical activities programme among school girls

The bar diagram shows the mean values of pre and posttest on muscular strength of experimental group and control group.



(Scores in numbers)

**Fig 2:** Graphical representation of individual comparison between pre and post-test on muscular strength

**Table 3:** Computation of 't' ratio between pre and post-test, means of control group and experimental group on balance

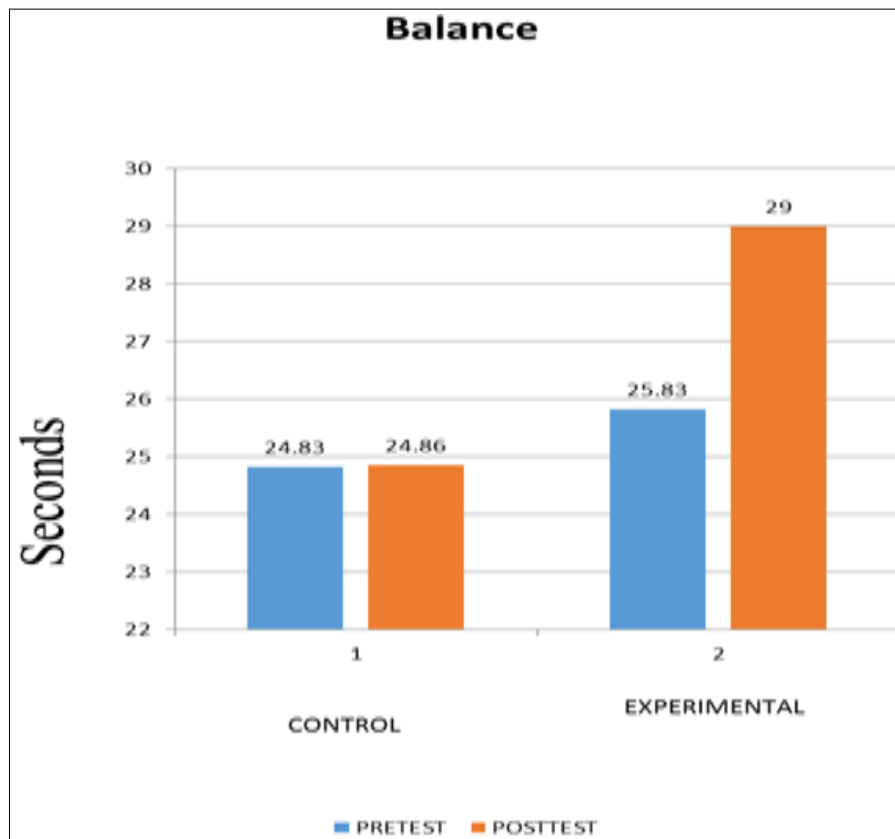
Group	Test	Mean	Standard deviation	Mean difference	Standard error of mean	't' ratio
Control Group	Pre-test	24.83	7.72	0.03	0.02	1.224
	Post-test	24.86	7.69			
Experimental Group	Pre-test	25.83	8.78	3.17	0.83	3.846*
	Post-test	29.01	8.12			

(Scores in seconds)

Table 3 reveals the computation of 't' ratio between pre-test and post-test of control group and experimental group muscular strength of high school boys. The mean values of pre and post-test of control group and experimental group were 24.83 and 24.86 and 38.47 respectively. Since, the obtained 't' ratio of control group was 1.224 was less than the required table value of 2.145, it was found to be statistically not significant and the obtained 't' ratio 3.846 was greater than the required table value of 2.145, it was found to be

statistically significant at 0.05 level of confidence for the degrees of freedom 1 and 14. The result clearly indicated the balance of control group had not been improved and the balance of experimental group had been improved due to influence of different physical activities programme among school girls

The bar diagram shows the mean values of pre and post-test on balance of experimental group and control group.



(Scores in seconds)

**Fig 3:** Graphical representation of individual comparison between pre and post-test on balance

### Discussion on findings

The result of the present study showed significantly improvement on selected physical fitness variables such as Speed, Flexibility, Agility, Cardio Respiratory Endurance and Vertical Jump due to the influence of different training on forest guard trainees. The results of the study are agreement with other studies. Chanrakumar *et al.*, (2015) conducted a study on the effect of ladder drill and SAQ training on speed and agility among sports club badminton players. The results the study it was concluded that the ladder drill and SAQ training were significantly improved the speed and agility among sports clubs badminton players. Biju *et al.*, (2018) conducted a study on the effect of specific training on selected physical fitness variables of college level football players. The results shows that physical fitness variables are significantly improved due to specific training program on college level football players. Chinmayee *et al.*, (2017) [11] conducted a study on the Cardio Respiratory endurance, Body Composition, Flexibility and Muscular strength of females between the age group 18-25 years. Sundara *et al.*, (2020) [21] evaluated the effect of package training on selected physical fitness variables of differently able athletes of Tamil Nadu. Sushil *et al.*, (2020) studied the effect of specific training program on physical fitness variables of footballers their age ranged between thirteen to sixteen years. Turna., (2020) [8] evaluated the effects of agility training on reaction time in fencers. Murugavel *et al.* (2019) [17] examined the effect of speed training program on selected skill related physical fitness variables of inter collegiate men kho-kho players. Sisay *et al.*, (2019) [16] investigated the effect of physical fitness training on selected fitness variables to enhance physical performance of Gamo U-17 male football project trainee's in Arba Minch Town. Senthil, (2018) [18] evaluated the effect of circuit training on selected Physical fitness variables among physical education students. Azmi *et al.*,

(2018) [6, 7] analyzed the effect of speed, agility and quickness training program to increase in speed, agility and acceleration. Afework *et al.*, (2018) [4] analyzed the influence of interval, circuit and combined training on selected skill related physical fitness variables and performance variables among 60 male football players of Wolaita Sodo University for a period of 12 weeks. Sathees *et al.* (2017) conducted a study on effect of complex training program on skill related physical fitness of hockey players. Kalyan *et al.*, (2017) [14] studied the effect of complex training on selected motor fitness variables among basketball players. Aluex *et al.*, (2017) analyzed the effect of RT on flexibility in young adult men and women. Muhammad *et al.*, (2016) analyzed the impact of fitness awareness on physical fitness and healthy habits of the visitors in public parks. Ozlem, (2016) [18] investigated the effects of regular exercise on the physical fitness levels among 65 sedentary individuals ages of 19 to 45. Chanrakumar *et al.*, (2015) evaluated a study on effect of ladder and SAQ training on speed and agility of Club Badminton Players. Sangeeta *et al.*, (2015) evaluated the effects of plyometric training on soccer related physical fitness variables of Haramaya University intercollegiate female soccer players for 12 weeks. Kivita, (2014) conducted the effect of nine weeks resistance training program on selected physical fitness variables of Basketball players. Sadi, (2013) conducted a study on effects of a seven week of rope jump training on speed, endurance and agility in middle school male students. Charilaos *et al.*, (2010) [10] examined the acute effects of static or ballistic stretching on flexibility and leg power characteristics of fencing performance in fencers of both genders. Gorun *et al.*, (2010) determined the effects of complex agility training on athletic power performance. Eighty healthy male college students participated in this study.

## Conclusion

Based on the results of the study, the following conclusions have been arrived.

1. It was concluded that eight weeks of different physical activities improved flexibility among school girls.
2. There was significant improvement over muscular strength due to different physical activities among school girls.
3. Different physical activities for a period of eight weeks was found to be the most appropriate protocol to produce significant changes over balance among school girls.
4. Further, it was conducted that eight weeks of Different physical activities program was found to be most effective training protocol to bring out desirable changes over flexibility, muscular strength and balance among school girls.

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