



## Effect of varied weight reduction training program on selected physical fitness and skill performance variables among intercollegiate women football players

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### Abstract

The purpose of this study was to find out the effect of varied weight reduction training program on selected physical fitness and skill performance variables of among intercollegiate women football players. To achieve the purpose of the study, forty intercollegiate women football players from Navarasam Arts & Science College Erode Tamil Nadu, GVG Arts and Science College Udumalpet, Tamil Nadu were selected as subjects (20 from each college). They were divided into two equal groups in which each group consisted of twenty subjects (n=20). Group-I was the experimental group and Group-II served as control group (CG). The experimental group underwent weight reduction training along with their physical fitness Training for 12 weeks and control group was not engaged in any training other than their routine football training. The following are the criterion variables (a). Physical fitness variables namely speed, leg explosive power and agility, (b). Skill variables namely dribbling, shooting and passing. They were tested using standard test methods and instruments before and after training. In order to analyze the training effects of each group on the selected physical fitness, and skill variables, “t” ratio was used. The findings of the study showed that there was significant improvements in the variables namely speed, agility, leg explosive power, dribbling, shooting and passing between pre-test and post-test of the experimental group. There was no significant difference in all of the selected variables between pre-test and post-test of the control group.

**Keywords:** weight reduction training, speed, leg explosive power, agility, and dribbling, shooting, passing football

### 1. Introduction

Some definitions of sports training as given by the experts of this area are as under. According to Hardial Singh (1993). Sports training is a pedagogical process, based on scientific principles, aiming at preparing sportsmen for higher performances in sports competitions. Sports training is a basic preparation of sportsman for better performance through physical exercise. (Singh, 1991) [5] Weight reduction training is the term now applied to exercises that have their roots in Europe, where they were first known simply as jump training. (Baechle, 1994). Weight reduction training can take many forms, including jump training for the lower extremities and medicine ball exercises for the upper extremities. Jump training exercises were classified according to the relative demands they placed on the players. All the exercises are progressive in nature, with a range of low to high intensity in each type of exercise. The classification of exercises is jumps in place; standing jumps; multiple hops and jumps, bounding, box drills and depth jumps. The ability to apply force rapidly (reactive force) is the major goal of weight reduction training. Weight reductions are used to apply an overload to the muscles with speed – strength as a goal. The speed-strength ability is known as power. Weight reduction should not be considered an end in itself, but as part of an overall program (stretching, running, strength training nutrition, etc). After an athlete has begun a proper strength and conditioning program, weight reduction are used to develop speed–strength functional training is how much certain movement will transfer into the actual activity of sport. It is a matter of neural complexity

and central nervous system demand. The literal meaning of the word Functional is “designed to be practical and useful, rather than attractive”. It provides an added advantage and improves overall performance, thereby helping the sports people to achieve their goals. (Alauddin Shaikh, 2012) [1] weight reduction involves training for specific skills of a game. Physical fitness exercises are usually trained in upright positions and involve movements in multiple planes of motion simultaneously just like in sport. Weight reduction in football means the training for a specific position or area of the field (like forwards, outside midfield, etc). Weight reduction involves training or practicing the specific demands of a position or a role. This can be for an individual player, or for a unit (i.e. defense). For example, a football coach may run a functional training session for forward play, dealing specifically how two forwards work together in attacking the third. Weight reduction should take place in the area of the field where that scenario would occur in a real game. The purpose of the present study was to find out the effect of varied weight reduction training program on selected physical fitness and skill performance variables of among intercollegiate women football players.

### 2. Methodology

To achieve the purpose of this study, forty intercollegiate women football players from Navarasam Arts & Science College Erode Tamil Nadu, GVG Arts and Science College Udumalpet, Tamil Nadu were selected as subjects (20 from each college). The age of the subjects ranged from 18 to 25 years as per the college records. The subjects were divided

into two equal groups in which each group consisted of twenty subjects (n=20). Group-I was the experimental group and Group-II served as control group (CG). The experimental group underwent weight reduction along with their weight reduction training for 12 weeks and control group was not engaged in any training other than their routine football training. The following are the criterion variables (a). Physical fitness variables namely speed, leg explosive power and agility, (b). Skill variables namely dribbling, shooting and passing. Eight upper body weight exercises and lower body physical fitness exercises were selected for the training. The upper body weight exercises were overhead throw, over back toss, side throws, explosive start throws, slams, single arm overhead throw, squat throws and plyo-pushups. The lower body physical fitness exercises were squat jumps, lateral jump to box, split squat jumps, tuck jump, lateral box push off, bounding, bounding with rings, box drill with rings, lateral hurdle jumps, single leg tuck jumps, zigzag hops, single leg lateral hops and depth jump. Twelve skill specific weight training exercises in the form of physical fitness games were selected for the training. They were of three types.

**i) Dribbling related**

Closed space dribbling, circle dribbling, zig-zag dribbling

and doggies dribbling.

**ii) Passing related**

Pressure passing, triangle passing, four corner passing and relay passing.

**iii) Shooting related**

Simple shoot, turn and shoot, cone kick down and penalty box shooting. The dependent variables were measured by their respective standard test methods before and after training period as follows. Physical fitness variables namely speed, leg explosive power and agility were measured by 50m dash test, standing long jump (broad jump) and Illinois agility run test respectively. Skill variables namely dribbling, passing and shooting were tested by their respective Mor-Christian Soccer ability tests.

In order to analyze the training effects of each group on the selected physical fitness, and skill variables, “t” ratio was used.

**3. Results and Discussion**

Significance of mean gains / losses between pretest and posttest on the selected variables of the experimental group are presented in

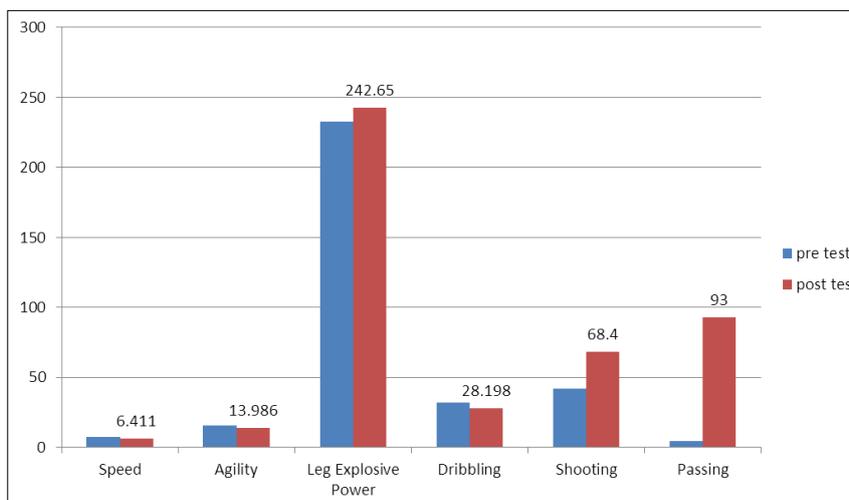
**Table 1:** Significance of mean gains / losses between pretest and posttest on selected variables of the experimental group

S. No	Variables	Pre Test mean	Post Test mean	Mean diff.	S.D	Std. Er. of mean	Correlation	t' ratio
<b>Physical Fitness Variables</b>								
1.	Speed	7.534	6.411	1.123	0.278	0.062	0.064	18.03*
2.	Agility	15.873	13.986	1.886	0.177	0.039	0.755	47.53*
3.	Leg Explosive Power	232.95	242.65	9.7	1.341	0.3	0.956	32.33*
<b>Skill Performance Variables</b>								
4.	Dribbling	32.171	28.198	3.973	0.601	0.134	0.813	29.53*
5.	Shooting	42.10	68.40	26.3	4.868	1.088	0.735	24.16*
6.	Passing	4.45	9.30	4.850	0.988	0.221	0.852	21.95*

\*Significant at 0.05 level

An examination of table – I indicates that the obtained ‘t’ ratios are 18.03, 47.53, 32.33, 29.53, 24.16 and 21.95 for speed, agility, leg explosive power, dribbling, shooting and passing respectively. The obtained ‘t’ ratios on the selected variables are found to be greater than the required table

value of 2.09 at 0.05 level of significance for 20 degrees of freedom. So it is found to be significant. The results of this study are statistically significant and explained their effects positively.



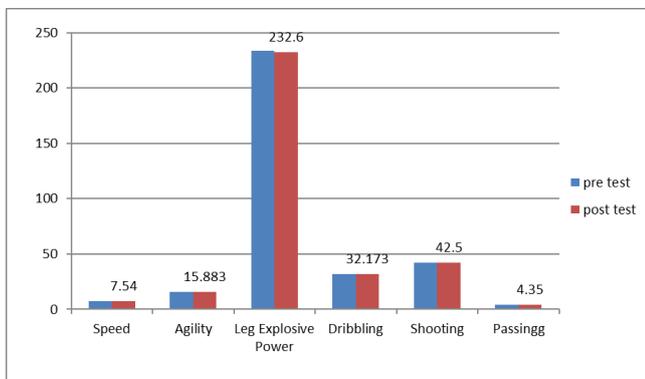
**Fig 1:** Pretest and posttest mean values of experimental group on selected criterion variables

**Table 2:** Significance of Mean Gains / Losses between Pre Test and Post Test on Selected Variables of Control Group

S. No	Variables	Pre Test mean	Post Test mean	Mean diff.	S.D	Std. Er. of mean	Correlation	t' ratio
<b>Physical Fitness Variables</b>								
1.	Speed	7.543	7.54	0.001	0.011	0.002	0.979	0.21
2.	Agility	15.886	15.883	0.003	0.023	0.005	0.980	0.49
3.	Leg Explosive Power	233.55	232.60	0.950	4.774	1.067	0.614	0.89
<b>Skill Performance Variables</b>								
4.	Dribbling	32.173	32.166	0.007	0.244	0.054	0.954	0.11
5.	Shooting	42.40	42.50	0.10	3.275	0.732	0.905	0.13
6.	Passing	4.30	4.35	0.050	0.826	0.185	0.713	0.33

\*Significant at 0.05 level

An examination of table – II indicates that the obtained ‘t’ ratios are 0.21, 0.49, 0.89, 0.11, 0.13, 0.33 for speed, agility, leg explosive power, dribbling, shooting and passing respectively. The obtained ‘t’ ratios on the selected variables are found to be lesser than the required table value of 2.09 at 0.05 level of confidence. So it is insignificant for 20 degrees of freedom. The results of this study are statistically insignificant and explained their effects negatively.



**Fig 2:** Pre test and post test mean values of control group on selected criterion variables

**4. Conclusion**

The findings of the study showed that there was a significant reduction in the resting pulse rate and there are significant improvements in the variables namely speed, agility, leg explosive power, dribbling, shooting and passing between pretest and post-test of the experimental group. The findings of the study showed that there is no significant difference in all of the selected variables between pretest and post-test of the control group. Hence it was concluded that Weight reduction training with had significantly improved the selected physical fitness and skill performance variables of intercollegiate women football players. The results of the study was in accordance with the findings of Tamrakar, Amitha and singh (2001) who conducted study to determine the effect of plyometric training, weight training and its combination on selected motor components and concluded that significant difference was found on speed, strength and explosive power.

**5. References**

1. Alauddin Shaikh, Mondal S. Effect of functional training on physical fitness components on college male students-a pilot study. *Journal of Humanities and Social Science*. 2012; 1(2):1-5.
2. Baechle TR, Earle RW. *Essentials of strength training and conditioning*, 2nd edition. Champaign, IL: National Strength and Conditioning Association, 2000.

3. Deepak Dogra K. Effect of functional interval endurance training programme on cardio-respiratory endurance and muscular endurance of Tripura cricketers, *International Journal of Computer Engineering and Technology*. 2015; 6(1):27-31.
4. Haghghi A, Moghadasi M, Nikseresht A, Torkfar A, Haghghi M. Effects of plyometric versus resistance training on sprint and skill performance in young football players. *Eur J Exp Biol*. 2012; 2:2348-2351.
5. Singh Hardayal. *Science of Sports Training*, New Delhi, D.V.S. Publications, 1991.
6. Thirumalaikumar S. Plyometrics. *Journal of Physical Education and Sports*. 2002; 13:17.