



## INFLUENCE OF AQUA FITNESS TRAINING ON LEG STRENGTH AND FLEXIBILITY AMONG HIGH SCHOOL SOCCER PLAYERS

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### ABSTRACT

The purpose of the study was to find out the influence of aqua fitness training on leg strength and flexibility among high school soccer players. In order to achieve the purpose of the study 24 high school male football players were randomly selected from Cuddalore District and they were equally divided in to two groups of 12 each as experimental and control group. The experimental group and control group undergone normal routine football practices and in addition the experimental group undergone aqua fitness training for one hour in the morning before starting the football practices. The control group was not given any special training. The period of training was 8 weeks in a schedule of weekly 5 days. The data were collected on the selected variables before and after the training period. Analysis of Covariance (ANCOVA) was used to analyze the data. To test the significance 0.05 level of confidence was fixed. Based on the results the study it was concluded that the aqua fitness training was significantly improved the leg strength and flexibility among high school soccer players.

**KEYWORDS:** Aqua Fitness Training, Leg strength, Flexibility.

### INTRODUCTION

Aqua fitness training that involves fast, explosive movements. This type of exercise is often done by athletes to help improve power output and sports performance. Aqua plyometrics is simply doing the exercises in a pool that are normally done on land, are effective in building explosive power and strength. Athletes often engage in this type of high-intensity training to improve their performance and sometimes perform the exercises in a pool because it's easier on their bodies. Aqua fitness can be just as effective, produce similar benefits to land plyometrics and can be done by anyone who wants to improve his fitness level. ([www.sportsrec.com](http://www.sportsrec.com))

Soccer is a popular game, played by millions of young girls and boys (aged 6 to 18) across many continents. Physically, it is taxing sport as it involves accelerating, decelerating, jumping, cutting, pivoting, turning, heading and kicking the ball. Soccer places many demands on the technical and physical skills of the player. It can be a great workout and lots of fun. It is a good sport for maintaining health, fitness, strength and endurance. There are several health benefits that are attainable from this game.

Football is a strenuous game which requires all the physical fitness qualities. To improve the physical fitness qualities they involved in various training programme. The present study was also with the aim to improve the physical fitness qualities through aqua fitness training.

With analyzing various important fitness qualities of the leg strength and flexibility were selected as criterion variables. A well-considered Leg exercise programme will result in improved athletic performance, as well as overall fitness. (Uppal A.K, 1983)

Flexibility refers to the absolute range of movement in a join or series of joints that is attainable in a momentary effort with the help of a partner or a piece of equipment flexibility in some joints can be increased to a certain degree by stretching. The qualities of leg strength and flexibility are essential for Football performance. (Burn, John W,1964)

### METHODOLOGY

The purpose of this study was to investigate the influence of aqua fitness training on leg strength and flexibility among high school soccer players. In order to achieve the purpose of the study 24 high school male football players were selected randomly and they were equally divided in to two groups of 12 each as experimental and control group. The experimental group and control group undergone normal routine football practices and in addition the experimental group (EG) undergone aqua fitness training for one hour in the morning before starting the football practice. The control group (CG) was not given any special training. The period of training was 8 weeks in a schedule of weekly 5 days. The overload principle was adopted the data were collected on the selected variables of leg strength and flexibility before and after the training period. Analysis of Covariance (ANCOVA) was used to analyze the data.

To test the significance 0.05 level of confidence was fixed.

## CRITERION MEASURES

TABLE - I

Variables	Test	Measurers in Unit
Leg Strength	1 RM	Kilograms
Flexibility	Sit and Reach	Centimeters

## TRAINING PROGRAMME

The eight weeks aqua fitness training included the following

### Squat Jumps

Stand in the pool with your feet shoulder-width apart. Lower your bodies down until your knees are bent 90 degrees and jump up as high as you can. Extend your arms above your head, land back on your feet and repeat.

### Tuck Jumps

Tuck jumps are similar to squat jumps with a few variations. Stand with your feet shoulder-width apart and place your hands on the sides of your head. Squat down slightly and burst up in the air. As you do this, tuck your knees into your chest. Land back on your feet and repeat. You can also do this in motion by jumping forward with each rep.

### Leaping Lunges

Leaping lunges are an exercise that is performed in a split stance. Stand with your right foot in front of you and your left foot behind you. Lower your body down until your right thigh is parallel with the bottom of the pool and your left knee is an inch above it. Explosively jump in the air and switch your foot position

so your left leg is now in front and your right leg is behind you. Do another lunge and repeat.

### Bounding

Bounding is a type of exaggerated running. Take a few paces forward in the pool to get momentum then leap off your right foot. Land on your left, leap up again and land on your right. Keep taking long strides like this through the water. Every time you push off, try to get as high and as far as you can before you land with the other foot.

### Single Leg Hops

Single leg hops are not only good for power output, but they also help improve balance. Stand on your right foot and curl your left lower leg behind you. Hop laterally to your right as far as you can, then hop to your left laterally as far as you can. Go back and forth for a series of reps, then switch feet. ([www.sportsrec.com](http://www.sportsrec.com))

## RESULTS AND DISCUSSION

The analysis of covariance on the data obtained on Leg strength, Flexibility of Experimental and Control groups have been analyzed and tabulated in Table-II and Table-III.

TABLE – II  
ANALYSIS OF COVARIANCE OF EXPERIMENTAL AND CONTROL GROUPS ON LEG STRENGTH

TEST	CG	EG	SV	SS	DF	MS	F
Pre test	125.00	130.83	Between	204.17	1	204.17	0.30
			Within	14991.67	22	681.44	
Post test	127.50	147.92	Between	2501.04	1	2501.04	4.12*
			Within	13347.92	22	606.72	
Adjusted mean	130.17	145.25	Between	1345.72	1	1345.72	35.76*
			Within	790.19	21	37.63	
Mean diff	2.50	17.08					

\*Significant at 0.05 level of confidence. df (1and22)=4.04 and df (1and22)=4.05

The table-II shows the F value of pretest, posttest and adjusted mean of experimental and control group. The F value of pretest was 0.30 (df 1and22 =4.04) and it was lower than the table value which indicates that there was no significant difference in pretest. The F value of posttest was 4.12 (df 1and22 =4.04) and adjusted mean was 35.76 (df 1and22 =4.05). Both the F

value of posttest and adjusted posttest were more than the table value and it indicates that there was a significant difference in the post test as well as adjusted posttest.

The results of this study revealed the influence of aqua fitness training in improving leg strength among high school soccer players.

**TABLE – III**  
**ANALYSIS OF COVARIANCE OF EXPERIMENTAL AND CONTROL GROUPS ON FLEXIBILITY**

TEST	CG	EG	SV	SS	DF	MS	F
Pre test	31.08	32.50	Between	12.04	1	12.04	0.84
			Within	313.92	22	14.27	
Post test	32.33	36.25	Between	92.04	1	92.04	9.17*
			Within	13347.92	22	10.04	
Adjusted mean	32.89	35.69	Between	45.34	1	45.34	36.20*
			Within	26.31	21	1.25	
Mean diff	1.25	3.75					

\*Significant at 0.05 level of confidence. df (1and22)=4.04 and df (1and22)=4.05

The table- III shows the F value of pretest, posttest and adjusted mean of experimental and control group. The F value of pretest was 0.84 (df 1and22 =4.04) and it was lower than the table value which indicates that there was no significant difference in pretest. The F value of posttest was 9.17 (df 1and22 =4.04) and adjusted post test mean was 36.20 (df 1and22 =4.05) and it indicates that there was a significant difference in the post test as well as adjusted posttest. The results of this study revealed the influence of aqua fitness training in improving flexibility among high school soccer players.

## DISCUSSION

In the recent times aqua fitness training is offered as a better method for developing leg strength and flexibility. The results and discussion of the present study proved that the said training procedure was beneficent for improving the leg strength and flexibility.

## CONCLUSION

On the basis of results and discussion of the study following conclusion were drawn.

1. The aqua fitness training had significantly improved the leg strength and flexibility of high school soccer players.

2. There was significant difference among the adjusted post-test mean of experimental group and control group on leg strength and flexibility.

## RECOMMENDATIONS

1. Similar study may be conducted for various age groups.
2. The same study may be extended to further time period.
3. The present study is mainly focused on males only. The same study may be done on females

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