

## THE EFFECT OF CIRCUIT TRAINING ON SELECTED PHYSICAL FITNESS VARIABLES OF WOMEN FOOTBALL PLAYERS

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### Abstract:

*The present study focuses on the effect of circuit training on selected physical fitness variables of women football players. The subject's age ranged from 14 to 17 years. To achieve the purpose of this study forty football women players from high school level were randomly selected and divided into two groups. The first group was considered as experimental group and the second group was considered as control group. Each group consists of 20 students. Experimental group has underwent for circuit training and the control group was not underwent any training. The selections of physical variables such as speed, agility, muscular endurance and cardio-Respiratory endurance. The experimental group after four weeks training shows that there was a significant improvement in physical fitness due to the circuit training.*

### KEY WORDS:

speed ,agility, muscular strength endurance and cardio respiratory endurance.

### INTRODUCTION

Circuit training can be designed to develop strength, power, muscular endurance, speed, agility and neuromuscular coordination, flexibility, and cardiovascular endurance. Circuit training is formal type of training six to ten station. The circuit training can be modified to fit the needs of anyone group or individual. In circuit training progression in all activities is assured. The circuit training to develop physical fitness level for women football players.

### METHODOLOGY

The random group design was used as experimental design in which 40 women were randomly selected and divided into two equal groups consist of 20 each. After dividing the group namely such as experimental and control group. Experimental group underwent for circuit training and control group underwent without any specified practices. The selected subjects were initially tested on criterion measure used in the study. After the completion of the initial test the subject underwent training belonging to experimental group with circuit training, but the control group had not actively participated in any activity. Circuit training was kept as ideal under the control of the investigator. The experimental group underwent circuit training for six week of training was carried out four days in a week.

### TOOLS AND TECHNIQUES

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TABLE - I

S.NO	VARIABLES	TEST ITEAMS	MEASUREMENT
1	Speed	50 mts dash	In seconds
2	Agility	Shuttle run	In seconds
3	Muscular endurance	Modified sit ups	In numbers
4	Cardio respiratory endurance	Cooper 12 min run and walk test	In meters

**RESULT AND STATISTICAL TECHNIQUES**

The collected data were statically analyzed with a paired (sample) 't'- test to find out the significant improvement between pre and post test of all groups . The level of >0.05 was considered significant.

**TABLE -II**  
**CALCULATION OF 'T' RATIO BETWEEN THE PRE AND POST TEST SCORES OF EXPERIMENTAL AND CONTROL GROUP ON SPEED**

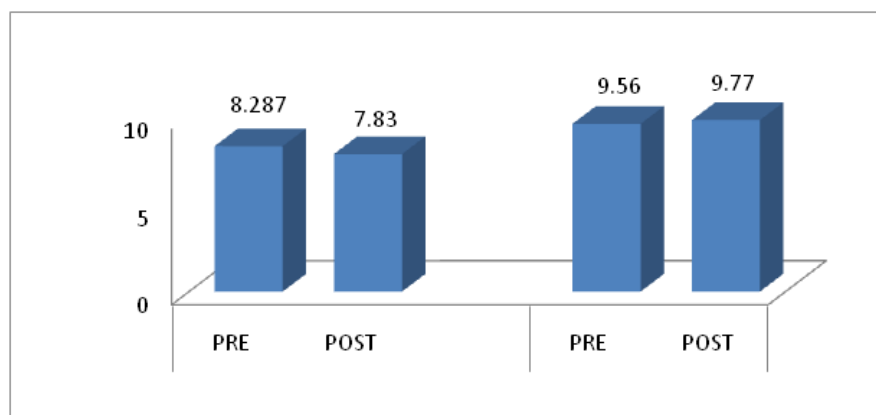
GROUPS	TEST	MEAN	S.D	M.D	't'
<b>Experimental group</b>	Pre test	8.28	.929	.452	6.22
	Post test	7.83	.836		
<b>Control group</b>	Pre test	9.56	.59	.20	1.13
	Post test	9.77	.55		

\*significant at 0.05 level.

Table II shows the mean value of pre and post-test of experimental group were 8.28 and 7.83 respectively. Since obtained "t" ratio of 6.22 was more than the required table value of 2.09 at 0.05 level of confidence for the degrees of freedom 1 and 19. The result that there was significant different on speed of experimental group.

Table II shows the mean value of pre and post-test of control group were 9.56 and 9.77 respectively. Since obtained "t" ratio of 1.13 was less than the required table value of 2.09 at 0.05 level of confidence for the degrees of freedom 1 and 19. The result that there was no significant different on speed of control group.

**FIGURE - I**  
**BAR DIGRAM SHOWS THE MEAN VALUE OF PRE AND POST TEST OF EXPERIMENTAL AND CONTROL GROUPS ON SPEED**



**TABLE -III**  
**CALCULATION OF 't' RATIO BETWEEN THE PRE AND POST TEST SCORES OF**  
**EXPERIMENTAL AND CONTROL GROUP ON AGILITY**

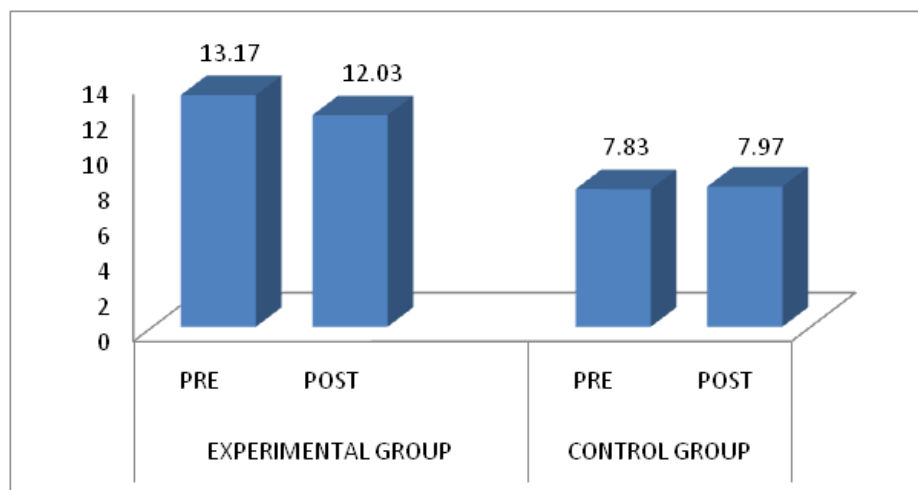
GROUPS	TEST	MEAN	S.D	M.D	'T'
<b>Experimental group</b>	Pre test	13.17	.330	1.14	7.33
	Post test	12.03	.749		
<b>Control group</b>	Pre test	7.83	.51	.96	1.15
	Post test	7.97	.64		

\*significant at 0.05 level.

Table III shows the mean value of pre and post-test of experimental group were 13.17 and 12.03 respectively. Since obtained “t” ratio of 7.33 was more than the required table value of 2.09 at 0.05 level of confidence for the degrees of freedom 1 and 19. The result that there was significant different on agility of experimental group.

Table III shows the mean value of pre and post-test of control group were 7.83 and 7.97 respectively. Since obtained “t” ratio of 1.15 was less than the required table value of 2.09 at 0.05 level of confidence for the degrees of freedom 1 and 19. The result that there was no significant different on agility of control group.

**FIGURE-II**  
**BAR DIGRAM SHOWS THE MEAN VALUE OF PRE AND POST TEST OF**  
**EXPERIMENTALAND CONTROL GROUPS ON AGILITY**



**TABLE -IV**  
**CALCULATION OF 't' RATIO BETWEEN THE PRE AND POST TEST SCORES OF**  
**EXPERIMENTAL AND CONTROL GROUP ON MUSCULAR ENDURANCE**

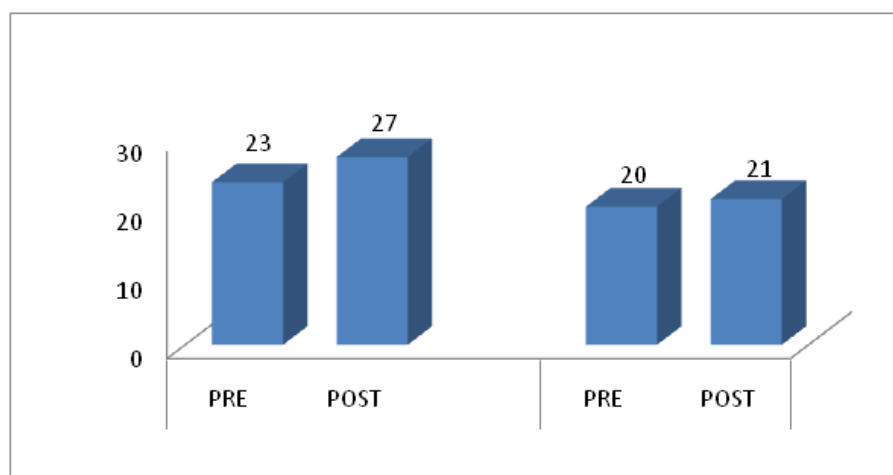
GROUPS	TEST	MEAN	S.D	M.D	'T'
<b>Experimental group</b>	Pre test	23	3.31	3.65	3.20
	Post test	27	4.36		
<b>Control group</b>	Pre test	20	5.34	1.10	1.27
	Post test	21	6.20		

\*significant at 0.05 level.

Table IV shows the mean value of pre and post-test of experimental group were 23 and 27 respectively.. Since obtained “t” ratio of 3.20 was more than the required table value of 2.09 at 0.05 level of confidence for the degrees of freedom 1 and 19.The result that there was significant different on muscular endurance of experimental group.

Table IV shows the mean value of pre and post-test of control group were 20 and 21 respectively. Since obtained “t” ratio of 1.27 was less than the required table value of 2.09 at 0.05 level of confidence for the degrees of freedom 1 and 19.The result that there was no significant different on muscular endurance of control group.

**FIGURE-III**  
**BAR DIGRAM SHOWS THE MEAN VALUE OF PRE AND POST OF EXPERIMENTAL AND CONTROL GROUPS TEST ON MUSCULAR STRENGTH ENDURANCE**



**TABLE -IV**  
**CALCULATION OF 't' RATIO BETWEEN THE PRE AND POSTTEST SCORES OF**  
**EXPERIMENTAL AND CONTROL GROUP ON CARDIAO RESPRATORY ENDURANCE**

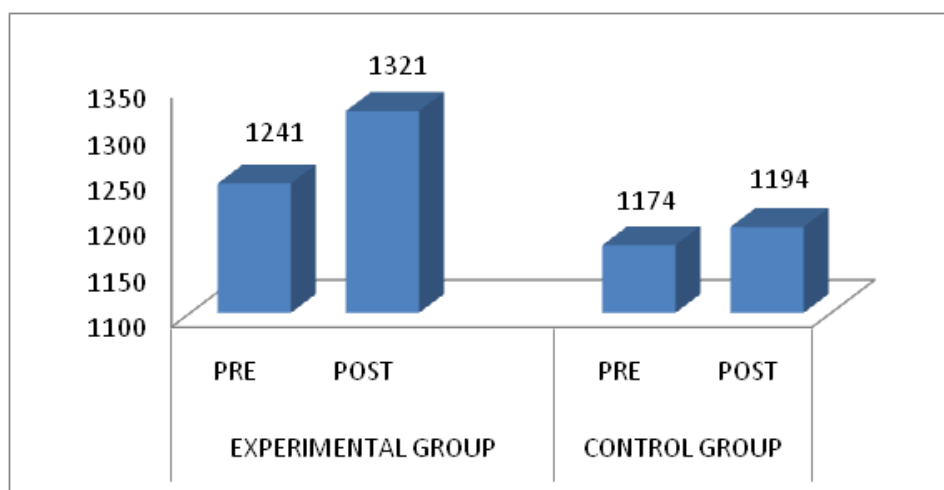
GROUPS	TEST	MEAN	S.D	M.D	'T'
<b>Experimental group</b>	Pre test	1241	119.9	8.00	5.9
	Post test	1321	246.1		
<b>Control group</b>	Pre test	1174	104.8	6.00	1.53
	Post test	1194	107.7		

\*significant at 0.05 level.

Table IV shows the mean value of pre and post-test of experimental group were 1241 and 1321 respectively. Since obtained "t" ratio of 5.9 was more than the required table value of 2.09 at 0.05 level of confidence for the degrees of freedom 1 and 19. The result that there was significant different on cardiac respiratory endurance of experimental group.

Table IV shows the mean value of pre and post-test of control group were 1174 and 1194 respectively. Since obtained "t" ratio of 1.53 was less than the required table value of 2.09 at 0.05 level of confidence for the degrees of freedom 1 and 19. The result that there was no significant different on cardio respiratory endurance of control group.

**FIGURE - IV**  
**BAR DIGRAM SHOWS THE MEAN VALUE OF PRE AND POST TEST OF EXPERIMENTAL**  
**AND CONTROL GROUPS ON CARDIO RESPIRATORY ENDURANCE**



**CONCLUSIONS**

Based on the findings the following conclusion were derived . It was concluded that experimental group after six week training showed a significant improvement in speed, agility, muscular endurance and cardio respiratory endurance. It was concluded that control group showed a no significant improvement in speed, agility, muscular endurance and cardio respiratory endurance.

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