

## CHAPTER IV

### ANALYSIS OF DATA AND INTERPRETATION OF THE STUDY

#### 4.1 OVER VIEW

This chapter deals with the analysis of data collected from samples under study. The four group's namely general fitness packages group, specific fitness packages group, combined general and specific fitness packages group and control group were analysed for the differences in their measures of physical fitness, psychological variables and skill performance variables in relation to pre test, post test and adjusted post test scores.

In this study, forty school volleyball players were selected as subjects from Kendriya Vidyalaya in Chennai Tamilnadu, India and their age ranged from 14 to 17 years.

#### 4.2 TEST OF SIGNIFICANCE

The methods of inference used to support or reject claims based on sample data are known as tests of significance. Tests for statistical significance indicate whether observed differences between assessment results occur because of sampling error or chance. It is the crucial portion of the thesis in arriving at conclusion by examining the hypothesis. The procedure of accepting the hypothesis or rejecting the hypothesis in accordance with results obtained the relation to the level of significance as considered sufficient for the study.

The test was usually called the test of significance since it was tested whether the difference among three groups or within many groups scores were significant or not, in this study. If the obtained F – value was greater than the table value, the null hypothesis was rejected to the effect that there existed

significant difference among the groups compared and if they obtained values were lesser than the required values, then the null hypothesis was accepted to the effect that there existed no significant difference among the means of the groups under study.

#### **4.2.1 Level of Significance**

The procedure of accepting the hypothesis or rejecting the hypothesis in accordance with results obtained the relation to the level of significance as considered sufficient for the study. In all cases, 0.05 a level confidence was fixed to test the significance, which was considered as appropriate.

### **4.3 COMPUTATION OF T TEST**

The primary objective of the paired 't' ratio was to describe the differences between the pre-test and post-test mean of volleyball players.

Thus the obtained results were interpreted with earlier studies and presented in this chapter well along with graphical presentations.

**TABLE - II**

**SIGNIFICANCE OF MEAN GAINS & LOSSES BETWEEN PRE AND  
POST TEST SCORES ON SELECTED VARIABLES  
OF GENERAL FITNESS GROUP**

S.No	Variables	Pre-Test Mean	Post-Test Mean	Mean difference	Std. Dev (±)	$\sigma$ DM	't' Ratio
1	Speed	8.66	8.07	0.58	0.36	0.09	6.26*
2	Explosive Power	1.09	1.47	0.37	0.08	0.02	16.44*
3	Flexibility	15.46	20.66	5.20	2.27	0.58	8.85*
4	Anxiety	19.46	17.00	2.46	1.84	0.47	5.17*
5	Self Confidence	40.80	26.00	14.80	8.61	2.22	6.65*
6	Sports Achievement Motivation	24.26	30.53	6.26	4.13	1.06	5.87*
7	Service	3.40	6.26	2.86	1.40	0.36	7.88*
8	Attack	3.46	6.46	3.00	1.36	0.35	8.52*

\* Significant at 0.05 level

An examination of table-II indicates that the obtained 't' ratios were 6.26, 16.44, 8.85, 5.17, 7.88 and 8.52 for speed, explosive power, flexibility, anxiety, self confidence, sports achievement motivation, service and attack respectively. The obtained 't' ratios on the selected variables were found to be greater than the required table value of 2.14 at 0.05 level of significance for 14 degrees of freedom. So it was found to be significant. The results of this study showed that statistically significant and explained its effects positively.

**TABLE - III****SIGNIFICANCE OF MEAN GAINS & LOSSES BETWEEN PRE AND  
POST TEST SCORES ON SELECTED VARIABLES OF  
SPECIFIC FITNESS GROUP**

S.No	Variables	Pre-Test Mean	Post-Test Mean	Mean difference	Std. Dev (±)	$\sigma$ DM	't' Ratio
1	Speed	8.60	8.00	0.59	0.34	0.08	6.64*
2	Explosive Power	1.08	1.46	0.38	0.13	0.03	10.82*
3	Flexibility	15.40	20.93	5.53	2.53	0.65	8.46*
4	Anxiety	19.60	17.13	2.46	1.88	0.48	5.06*
5	Self Confidence	38.80	27.26	11.53	9.62	2.48	4.64*
6	Sports Achievement Motivation	24.40	30.66	6.26	2.71	7.00	8.95*
7	Service	3.53	6.20	2.66	1.49	0.38	6.90*
8	Attack	3.53	6.33	2.80	1.56	0.40	6.91*

\* Significant at 0.05 level

An examination of table-III indicates that the obtained 't' ratios were 6.64, 10.82, 8.46, 5.0, 4.64, 8.95, 6.90 and 6.91 for speed, explosive power, flexibility, anxiety, self confidence, sports achievement motivation, service and attack respectively. The obtained 't' ratios on the selected variables were found to be greater than the required table value of 2.14 at 0.05 level of significance for 14 degrees of freedom. So it was found to be significant. The results of this study showed that statistically significant and explained its effects positively.

TABLE – IV

SIGNIFICANCE OF MEAN GAINS & LOSSES BETWEEN PRE AND  
POST TEST SCORES ON SELECTED VARIABLES  
OF COIMBINED FITNESS GROUP

S.No	Variables	Pre-Test Mean	Post-Test Mean	Mean difference	Std. Dev (±)	σ DM	't' Ratio
1	Speed	8.74	7.78	0.95	0.47	0.13	7.75*
2	Explosive Power	1.11	1.70	0.59	0.10	0.02	21.64*
3	Flexibility	15.33	23.66	8.33	2.52	0.65	12.77*
4	Anxiety	20.46	15.46	5.00	2.67	0.69	7.24*
5	Self Confidence	40.60	17.66	22.93	12.90	3.33	6.88*
6	Sports Achievement Motivation	24.40	33.20	8.80	2.90	0.75	11.72*
7	Service	3.46	7.93	4.46	0.91	0.23	18.89*
8	Attack	3.26	8.20	4.93	0.70	0.18	27.15*

\* Significant at 0.05 level

An examination of table-IV indicates that the obtained 't' ratios were 7.75, 21.64, 12.77, 7.24, 6.88, 11.72, 18.89 and 27.15 for speed, explosive power, flexibility, anxiety, self confidence, sports achievement motivation, service and attack respectively. The obtained 't' ratios on the selected variables were found to be greater than the required table value of 2.14 at 0.05 level of significance for 14 degrees of freedom. So it was found to be significant. The results of this study showed that statistically significant and explained its effects positively.

TABLE – V

SIGNIFICANCE OF MEAN GAINS & LOSSES BETWEEN PRE AND POST TEST SCORES ON SELECTED VARIABLES OF CONTROL GROUP

S.No	Variables	Pre-Test Mean	Post-Test Mean	Mean difference	Std. Dev (±)	$\sigma$ DM	't' Ratio
1	Speed	8.62	8.58	0.03	0.35	0.92	0.41
2	Explosive Power	1.12	1.15	0.06	0.06	0.01	1.80
3	Flexibility	16.20	17.13	2.08	2.08	0.53	1.73
4	Anxiety	21.13	21.80	2.05	2.05	0.53	1.25
5	Self Confidence	40.00	42.93	2.93	10.97	2.83	1.03
6	Sports Achievement Motivation	24.13	24.66	4.30	4.30	1.11	0.48
7	Service	3.20	3.46	1.75	1.75	0.45	0.59
8	Attack	3.53	3.26	1.86	1.86	0.48	0.55

\* Significant at 0.05 level

An examination of table-V indicates that the obtained 't' ratios were 0.41, 1.80, 1.73, 1.25, 1.03, 0.48, 0.59 and 0.55 for speed, explosive power, flexibility, anxiety, self confidence, sports achievement motivation, service and attack respectively. The obtained 't' ratios on the selected variables were found to be lesser than the required table value of 2.14 at 0.05 level of significance for 14 degrees of freedom. So it was found to be insignificant.

#### 4.4 COMPUTATION OF ANALYSIS OF COVARIANCE

The following tables illustrate the statistical results of the isolated and combined effect of general and specific fitness packages on selected physical fitness, psychological variables and skill performance of volleyball players.

TABLE-VI

COMPUTATION OF ANALYSIS OF COVARIANCE OF MEAN OF GENERAL, SPECIFIC AND COMBINED  
GENERAL & SPECIFIC FITNESS GROUPS ON EXPLOSIVE POWER

	GFPG	SFPG	CGSFPG	CG	Source of Variance	Sum of Squares	Df	Means Squares	F-ratio
Pre-Test Means	1.09	1.08	1.11	1.12	BG	0.01	3	0.005	1.30
					WG	0.20	56	0.004	
Post-Test Means	1.47	1.46	1.70	1.15	BG	2.30	3	0.76	91.49*
					WG	0.47	56	0.008	
Adjusted Post-Test Means	1.47	1.47	1.70	1.14	BG	2.30	3	0.77	91.82*
					WG	0.46	55	0.008	

\* - Significant

BG- Between Group Means

WG- Within Group Means (Table Value for 0.05 Level for df 3 & 56 = 2.76)

df- Degrees of Freedom

(Table Value for 0.05 Level for df 3 & 56=2.77)

#### 4.5.1 Results of Explosive Power

An examination of table - VIII indicated that the pretest means of general, specific and combined general & specific fitness groups were 1.09, 1.08, 1.11 and 1.12 respectively. The obtained F-ratio for the pre-test was 1.30 and the table F-ratio was 2.76. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 3 and 56.

The post-test means of the general, specific and combined general & specific fitness groups were 1.47, 1.46, 1.70 and 1.15 respectively. The obtained F-ratio for the post-test was 91.49 and the table F-ratio was 2.76. Hence the pre-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 3 and 56.

The adjusted post-test means of the general, specific and combined general & specific fitness groups were 1.47, 1.46, 1.70 and 1.14 respectively. The obtained F-ratio for the adjusted post-test means was 91.82 and the table F-ratio was 2.77. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 3 and 55.

To determine which of the paired means had a significance difference the Scheffe's test was used as post-hoc test and the results are presented in the table.



TABLE - VII

THE SCHEFFE'S TEST FOR THE DIFFERENCES  
BETWEEN THE ADJUSTED POST TEST  
PAIRED MEANS ON EXPLOSIVE POWER

Adjusted Post-test means				Mean Difference	Confidence Interval
GFPG	SFPG	CGSFPG	CG		
1.47	1.46	---	---	0.01	0.07
1.47	---	1.70	---	0.23*	
1.47	---	---	1.15	0.32*	
---	1.46	1.70	---	0.24*	
---	1.46	---	1.15	0.31*	
---	---	1.70	1.15	0.55*	

\* Significant at 0.05 level of confidence

Table IX shows that the mean difference between general fitness package and combined general & specific fitness groups, general fitness package and control groups, specific fitness package and combined general & specific fitness groups, specific fitness package and control groups, combined general & specific fitness and control groups were 0.23, 0.32, 0.24, 0.31 and 0.55 respectively on explosive power are greater than the confidence interval value 0.07, which shows significant difference at 0.05 level of confidence.

The mean difference between general fitness package and groups was 0.01 on explosive power are lesser than the confidence interval value 0.07, which shows insignificant difference at 0.05 level of confidence.

The pre, post and adjusted posttest mean values of general, specific and combined general & specific fitness groups, on explosive power are graphically represented in the figure - II.

**FIGURE – I**

**PRE POST AND ADJUSTED POST TEST DIFFERENCES OF THE  
ON EXPLOSIVE POWER**

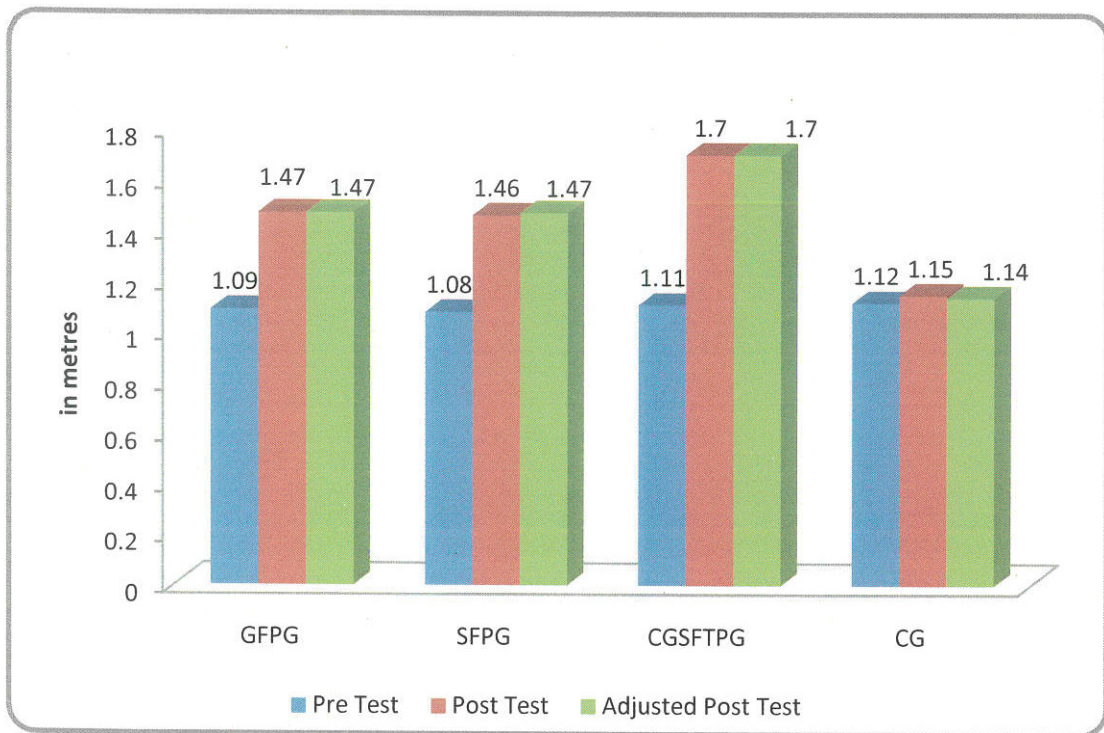


TABLE - VIII

COMPUTATION OF ANALYSIS OF COVARIANCE OF MEAN OF GENERAL, SPECIFIC AND COMBINED  
GENERAL & SPECIFIC FITNESS GROUPS ON SPEED

	GFPG	SFPG	CGSFPG	CG	Source of Variance	Sum of Squares	Df	Means Squares	F-ratio
Pre-Test Means	8.66	8.60	8.74	8.62	BG	0.18	3	0.06	0.56
					WG	6.15	56	0.11	
Post-Test Means	8.07	8.01	7.78	8.58	BG	5.13	3	1.71	27.43*
					WG	3.49	56	0.06	
Adjusted Post-Test Means	8.08	8.01	7.78	8.59	BG	5.19	3	1.73	27.64*
					WG	3.44	55	0.06	

\* - Significant

BG- Between Group Means

WG- Within Group Means (Table Value for 0.05 Level for df 3 & 56 = 2.76)

df- Degrees of Freedom (Table Value for 0.05 Level for df 3 & 55 = 2.77)

#### 4.5.2 Results of Speed

An examination of table - VI indicated that the pretest means of general, specific and combined general & specific fitness package groups were 8.66, 8.60, 8.74 and 8.62 respectively. The obtained F-ratio for the pre-test was 0.56 and the table F-ratio was 2.76. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 3 and 56.

The post-test means of the general, specific and combined general & specific fitness groups were 8.07, 8.01, 7.78 and 8.58 respectively. The obtained F-ratio for the post-test was 27.43 and the table F-ratio was 2.76. Hence the pre-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 3 and 56.

The adjusted post-test means of the general, specific and combined general & specific fitness groups were 8.01, 8.08, 7.78 and 8.59 respectively. The obtained F-ratio for the adjusted post-test means was 27.64 and the table F-ratio was 2.77. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 3 and 55.

To determine which of the paired means had a significance difference the Scheffe's test was used as post-hoc test and the results are presented in the table.

**TABLE - IX**

**THE SCHEFFE'S TEST FOR THE DIFFERENCES  
BETWEEN THE ADJUSTED POST TEST  
PAIRED MEANS ON SPEED**

Adjusted Post-test means				Mean Difference	Confidence Interval
GFPG	SFPG	CGSFPG	CG		
8.01	8.08	---	---	0.07	0.19
8.01	---	7.78	---	0.23*	
8.01	---	---	8.59	0.58*	
---	8.08	7.78	---	0.30*	
---	8.08	---	8.59	0.51*	
---	---	7.78	8.59	0.81*	

*\* Significant at 0.05 level of confidence*

Table VII shows that the mean difference between general fitness package and combined general & specific fitness package groups, general fitness package and control groups, specific fitness package and combined general & specific fitness package groups, specific fitness package and control groups, combined general & specific fitness package and control groups were 0.23, 0.58, 0.30, 0.51 and 0.81 respectively on speed are greater than the confidence interval value 0.19, which shows significant difference at 0.05 level of confidence.

The mean difference between general fitness and groups was 0.07 on speed are lesser than the confidence interval value 0.19, which shows insignificant difference at 0.05 level of confidence.

The pre, post and adjusted post test mean values of general, specific and combined general & specific fitness groups, on speed are graphically represented in the figure - I.

**FIGURE - II**

**PRE POST AND ADJUSTED POST TEST DIFFERENCES OF THE  
ON SPEED**

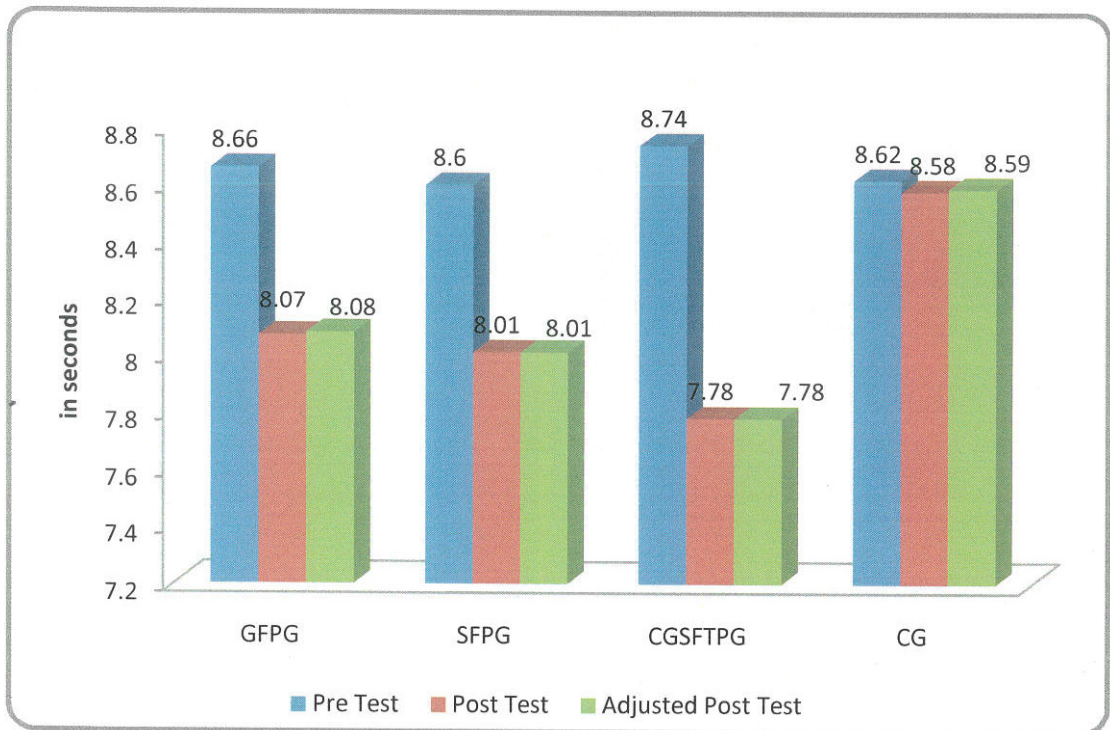


TABLE - X

COMPUTATION OF ANALYSIS OF COVARIANCE OF MEAN OF GENERAL, SPECIFIC AND COMBINED  
GENERAL & SPECIFIC FITNESS GROUPSON FLEXIBILITY

	GFPG	SFPG	CGSFPG	CG	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	15.46	15.40	15.33	16.20	BG	7.33	3	2.44	0.97
					WG	141.06	56	2.51	
Post-Test Means	20.66	20.93	23.66	17.13	BG	323.06	3	107.68	38.33*
					WG	157.33	56	2.81	
Adjusted Post-Test Means	20.66	20.92	23.65	17.16	BG	305.47	3	101.82	35.67*
					WG	156.98	55	2.85	

\* - Significant

BG- Between Group Means

WG- Within Group Means (Table Value for 0.05 Level for df 3 & 56 = 2.76)

df- Degrees of Freedom (Table Value for 0.05 Level for df 3 & 56 = 2.77)

### 4.5.3 Results of Flexibility

An examination of table - X indicated that the pretest means of general, specific and combined general & specific fitness package groups were 15.46, 15.49, 15.33 and 16.20 respectively. The obtained F-ratio for the pre-test was 0.97 and the table F-ratio was 2.76. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 3 and 56.

The post-test means of the general, specific and combined general & specific fitness package groups were 20.66, 20.93, 23.66 and 17.13 respectively. The obtained F-ratio for the post-test was 38.33 and the table F-ratio was 2.76. Hence the pre-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 3 and 56.

The adjusted post-test means of the general, specific and combined general & specific fitness package groups were 20.66, 20.92, 23.65 and 17.16 respectively. The obtained F-ratio for the adjusted post-test means was 35.67 and the table F-ratio was 2.77. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 3 and 55.

To determine which of the paired means had a significance difference the Scheffe's test was used as post-hoc test and the results are presented in the table.



TABLE - XI

THE SCHEFFE'S TEST FOR THE DIFFERENCES  
BETWEEN THE ADJUSTED POST TEST  
PAIRED MEANS ON FLEXIBILITY

Adjusted Post-test means				Mean Difference	Confidence Interval
GFPG	SFPG	CGSFPG	CG		
20.66	20.92	---	---	0.26	1.34
20.66	---	23.65	---	2.99*	
20.66	---	---	17.16	3.50*	
---	20.92	23.65	---	2.73*	
---	20.92	---	17.16	3.76*	
---	---	23.65	17.16	6.49*	

\* Significant at 0.05 level of confidence

Table XI shows that the mean difference between general fitness package and combined general & specific fitness package groups, general fitness package and control groups, specific fitness package and combined general & specific fitness package groups, specific fitness package and control groups, combined general & specific fitness package and control groups were 2.99, 3.50, 2.73, 3.76 and 6.49 respectively on flexibility are greater than the confidence interval value 1.34, which shows significant difference at 0.05 level of confidence.

The mean difference between general fitness package and groups was 0.26 on flexibility are lesser than the confidence interval value 1.34, which shows insignificant difference at 0.05 level of confidence.

The pre, post and adjusted post test mean values of general, specific and combined general & specific fitness package groups, on flexibility are graphically represented in the figure - III.

**FIGURE - III**

**PRE POST AND ADJUSTED POST TEST DIFFERENCES OF THE  
ON FLEXIBILITY**

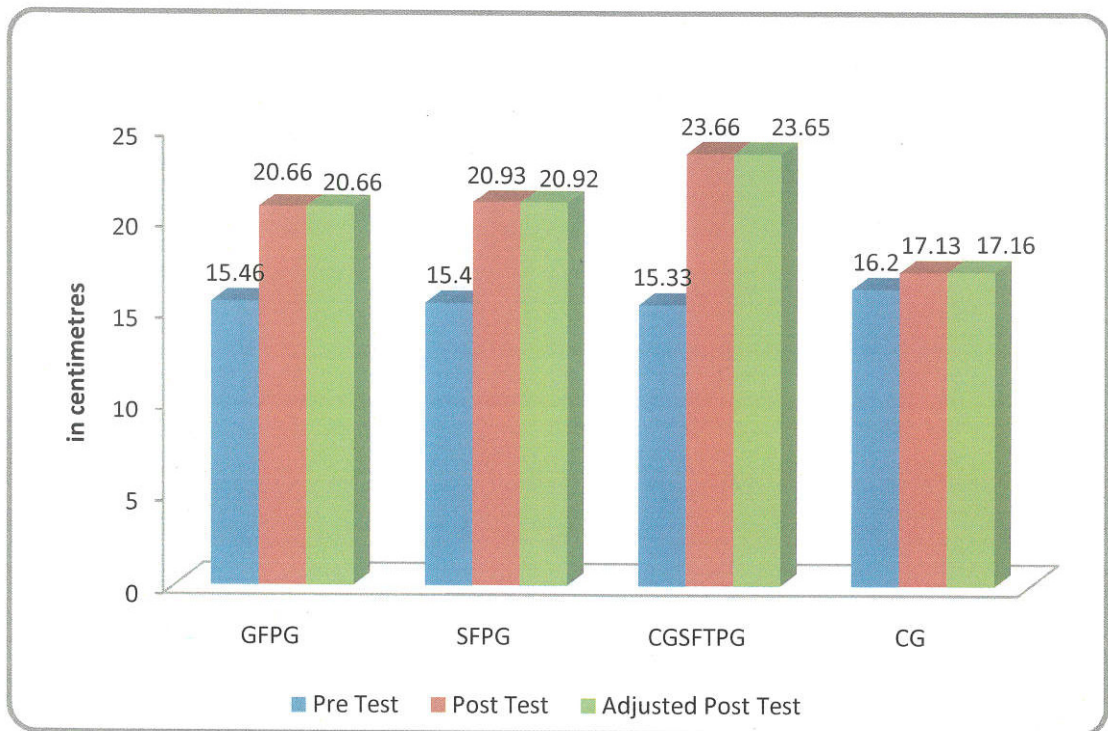


TABLE - XII

COMPUTATION OF ANALYSIS OF COVARIANCE OF MEAN OF GENERAL, SPECIFIC AND COMBINED  
GENERAL & SPECIFIC FITNESS GROUPSON ANXIETY

	GFPG	SFPG	CGSFPG	CG	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	19.46	19.60	20.46	21.13	BG	27.53	3	9.17	2.41
					WG	212.80	56	3.80	
Post-Test Means	17.00	17.13	15.46	21.80	BG	337.78	3	112.59	112.86*
					WG	55.86	56	0.99	
Adjusted Post-Test Means	17.02	17.14	15.45	21.77	BG	318.99	3	106.33	104.99*
					WG	55.70	55	1.01	

\* - Significant

BG- Between Group Means

WG- Within Group Means  
(Table Value for 0.05 Level for df 3 & 56 = 2.76)

df- Degrees of Freedom

(Table Value for 0.05 Level for df 3 & 56 = 2.77)

#### 4.5.4 Results of Anxiety

An examination of table - XII indicated that the pretest means of general, specific and combined general & specific fitness package groups were 19.46, 19.60, 20.46 and 21.13 respectively. The obtained F-ratio for the pre-test was 2.42 and the table F-ratio was 2.76. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 3 and 56.

The post-test means of the general, specific and combined general & specific fitness package groups were 17.00, 17.13, 15.46 and 21.80 respectively. The obtained F-ratio for the post-test was 112.86 and the table F-ratio was 2.76. Hence the pre-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 3 and 56.

The adjusted post-test means of the general, specific and combined general & specific fitness package groups were 17.02, 17.14, 15.45 and 21.77 respectively. The obtained F-ratio for the adjusted post-test means was 104.99 and the table F-ratio was 2.77. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 3 and 55.

To determine which of the paired means had a significance difference the Scheffe's test was used as post-hoc test and the results are presented in the table.

TABLE - XIII

THE SCHEFFE'S TEST FOR THE DIFFERENCES  
BETWEEN THE ADJUSTED POST TEST  
PAIRED MEANS ON ANXIETY

Adjusted Post-test means				Mean Difference	Confidence Interval
GFPG	SFPG	CGSFPG	CG		
17.02	17.14	---	---	0.12	0.79
17.02	---	15.45	---	1.57*	
17.02	---	---	21.77	4.75*	
---	17.14	15.45	---	1.69*	
---	17.14	---	21.77	4.63*	
---	---	15.45	21.77	6.32*	

\* Significant at 0.05 level of confidence

Table XIII shows that the mean difference between general fitness package and combined general & specific fitness package groups, general fitness package and control groups, specific fitness package and combined general & specific fitness package groups, specific fitness package and control groups, combined general & specific fitness package and control groups were 1.57, 4.75, 1.69, 4.63 and 6.32 respectively on anxiety are greater than the confidence interval value 0.79, which shows significant difference at 0.05 level of confidence.

The mean difference between general fitness package and groups was 0.12 on anxiety are lesser than the confidence interval value 0.79, which shows insignificant difference at 0.05 level of confidence.

The pre, post and adjusted post test mean values of general, specific and combined general & specific fitness package groups, on anxiety are graphically represented in the figure - IV.

**FIGURE - IV**

**PRE POST AND ADJUSTED POST TEST DIFFERENCES OF THE  
ON ANXIETY**

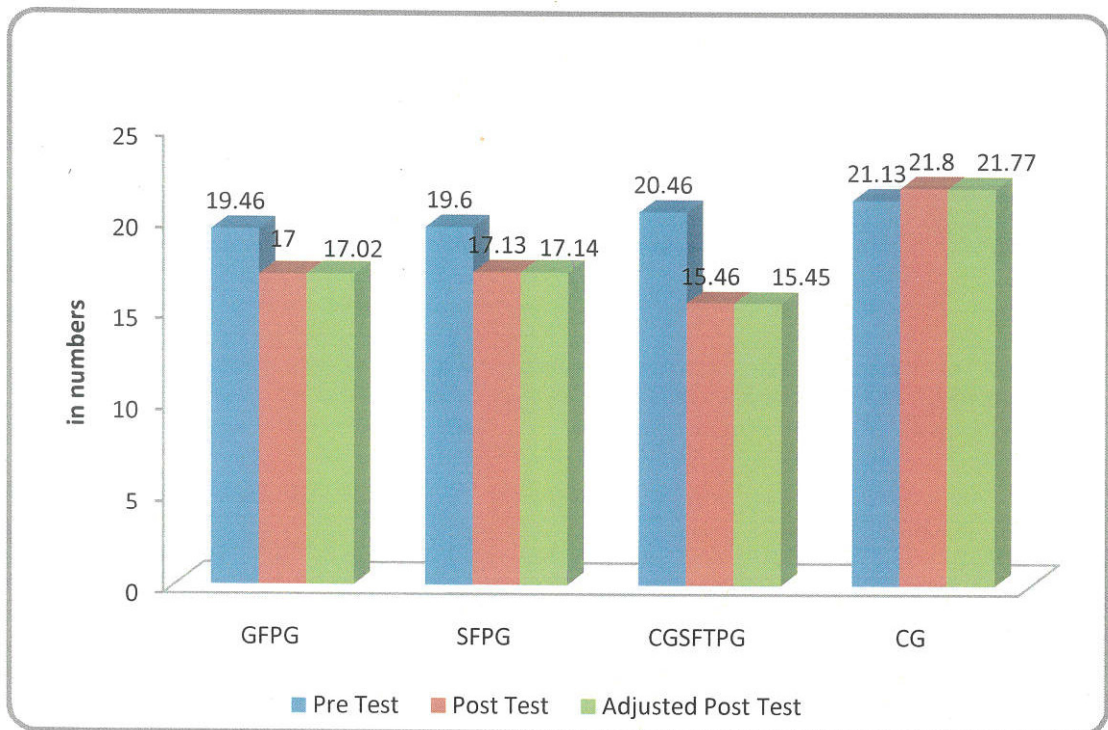


TABLE - XIV

COMPUTATION OF ANALYSIS OF COVARIANCE OF MEAN OF GENERAL, SPECIFIC AND COMBINED  
GENERAL & SPECIFIC FITNESS GROUPS ON SELF CONFIDENCE

	GFPG	SFPG	CGSFPG	CG	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	40.80	38.80	40.60	40.00	BG	36.45	3	12.15	0.19
					WG	3524.40	56	62.93	
Post-Test Means	26.00	27.26	17.66	42.93	BG	5001.73	3	1667.24	40.67*
					WG	2295.20	56	40.98	
Adjusted Post-Test Means	26.05	27.17	17.70	42.93	BG	4983.16	3	1661.05	40.15*
					WG	2275.24	55	41.36	

\* - Significant

BG- Between Group Means

WG- Within Group Means (Table Value for 0.05 Level for df 3 & 56 = 2.76)

df- Degrees of Freedom (Table Value for 0.05 Level for df 3 & 56 = 2.77)

#### 4.5.5 Results of Self Confidence

An examination of table - XIV indicated that the pretest means of general, specific and combined general & specific fitness package groups were 40.80, 38.80, 40.60 and 40.00 respectively. The obtained F-ratio for the pre-test was 0.19 and the table F-ratio was 2.76. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 3 and 56.

The post-test means of the general, specific and combined general & specific fitness package groups were 26.00, 27.26, 17.66 and 42.93 respectively. The obtained F-ratio for the post-test was 40.67 and the table F-ratio was 2.76. Hence the pre-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 3 and 56.

The adjusted post-test means of the general, specific and combined general & specific fitness package groups were 26.05, 27.17, 17.70 and 42.93 respectively. The obtained F-ratio for the adjusted post-test means was 40.15 and the table F-ratio was 2.77. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 3 and 55.

To determine which of the paired means had a significance difference the Scheffe's test was used as post-hoc test and the results are presented in the table.



TABLE - XV

THE SCHEFFE'S TEST FOR THE DIFFERENCES  
BETWEEN THE ADJUSTED POST TEST  
PAIRED MEANS ON SELF CONFIDENCE

Adjusted Post-test means				Mean Difference	Confidence Interval
GFPG	SFPG	CGSFPG	CG		
26.05	27.17	---	---	1.12	5.11
26.05	---	17.70	---	8.35*	
26.05	---	---	42.93	16.88*	
---	27.17	17.70	---	9.47*	
---	17.17	---	42.93	15.76*	
---	---	17.70	42.93	25.23*	

\* Significant at 0.05 level of confidence

Table XV shows that the mean difference between general fitness package and combined general & specific fitness package groups, general fitness package and control groups, specific fitness package and combined general & specific fitness package groups, specific fitness package and control groups, combined general & specific fitness package and control groups were 8.35, 16.88, 9.47, 15.76 and 25.23 respectively on self confidence are greater than the confidence interval value 5.11, which shows significant difference at 0.05 level of confidence.

The mean difference between general fitness package and groups was 1.12 on self confidences are lesser than the confidence interval value 5.11, which shows insignificant difference at 0.05 level of confidence.

The pre, post and adjusted post test mean values of general, specific and combined general & specific fitness package groups, on self confidence are graphically represented in the figure - V.

**FIGURE - V**

**PRE POST AND ADJUSTED POST TEST DIFFERENCES OF THE  
ON SELF CONFIDENCE**

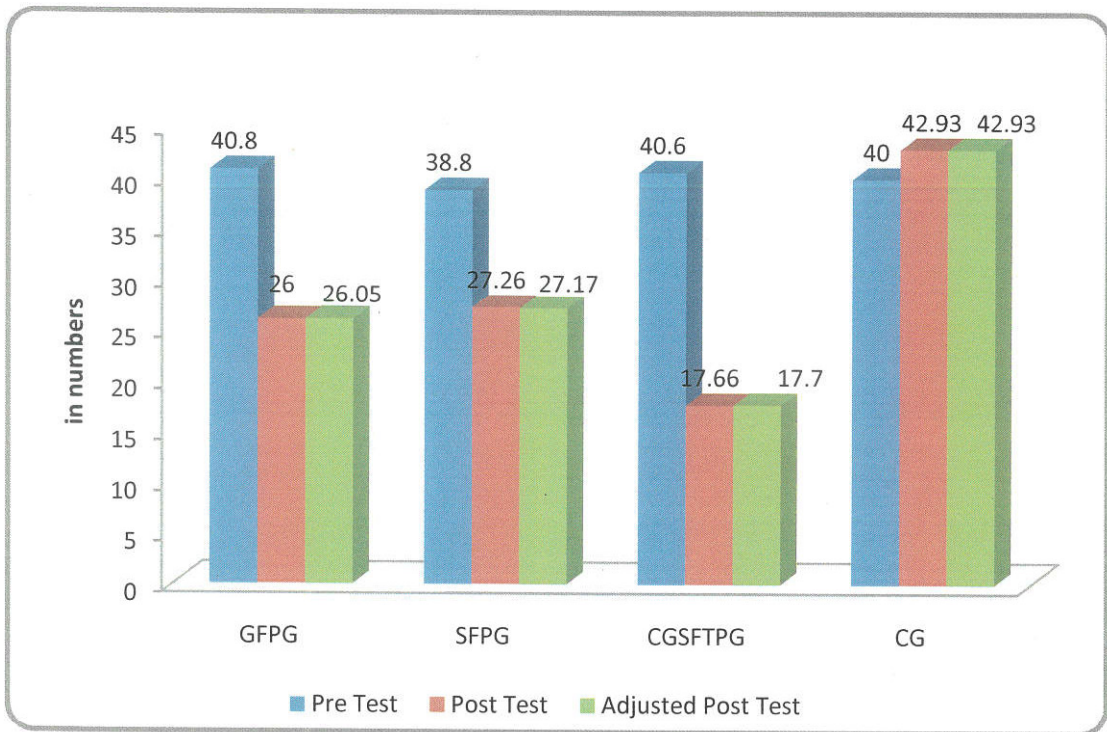


TABLE - XVI

COMPUTATION OF ANALYSIS OF COVARIANCE OF MEAN OF GENERAL, SPECIFIC AND COMBINED GENERAL & SPECIFIC FITNESS PACKAGES GROUPSONSPORTS ACHIEVEMENT MOTIVATION

	GFPG	SFPG	CGSFPG	CG	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	24.26	24.40	24.41	24.13	BG	0.73	3	0.24	0.03
					WG	389.86	56	6.96	
Post-Test Means	30.53	30.66	33.20	24.66	BG	587.93	3	195.97	31.46*
					WG	348.80	56	6.22	
Adjusted Post-Test Means	30.53	30.66	33.19	24.67	BG	586.12	3	195.37	30.82*
					WG	348.57	55	6.33	

BG- Between Group Means

WG- Within Group Means

df- Degrees of Freedom

\* - Significant

(Table Value for 0.05 Level for df 3 & 56 = 2.76)

(Table Value for 0.05Levelfordf3&56=2.77)

#### 4.5.6 Results of Sports Achievement Motivation

An examination of table - XVI indicated that the pretest means of general, specific and combined general & specific fitness package groups were 24.26, 24.40, 24.41 and 24.13 respectively. The obtained F-ratio for the pre-test was 0.03 and the table F-ratio was 2.76. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 3 and 56.

The post-test means of the general, specific and combined general & specific fitness package groups were 30.53, 30.66, 33.20 and 24.66 respectively. The obtained F-ratio for the post-test was 31.46 and the table F-ratio was 2.76. Hence the pre-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 3 and 56.

The adjusted post-test means of the general, specific and combined general & specific fitness package groups were 30.53, 30.66, 33.19 and 24.67 respectively. The obtained F-ratio for the adjusted post-test means was 30.82 and the table F-ratio was 2.77. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 3 and 55.

To determine which of the paired means had a significance difference the Scheffe's test was used as post-hoc test and the results are presented in the table.

**TABLE - XVII**

**THE SCHEFFE'S TEST FOR THE DIFFERENCES  
BETWEEN THE ADJUSTED POST TEST  
PAIRED MEANS ON SPORTS ACHIEVEMENT MOTIVATION**

Adjusted Post-test means				Mean Difference	Confidence Interval
GFPG	SFPG	CGSFPG	CG		
30.53	30.66	---	---	0.13	2.00
30.53	---	33.19	---	2.66*	
30.53	---	---	24.67	5.86*	
---	30.66	33.19	---	2.53*	
---	30.66	---	24.67	5.99*	
---	---	33.19	24.67	8.52*	

*\* Significant at 0.05 level of confidence*

Table XVII shows that the mean difference between general fitness package and combined general & specific fitness package groups, general fitness package and control groups, specific fitness package and combined general & specific fitness package groups, specific fitness package and control groups, combined general & specific fitness package and control groups were 2.66, 5.86, 2.53, 5.99 and 8.52 respectively on sports achievement motivation are greater than the confidence interval value 2.00, which shows significant difference at 0.05 level of confidence.

The mean difference between general fitness package and groups was 0.13 on are lesser than the confidence interval value 2.00, which shows insignificant difference at 0.05 level of confidence.

The pre, post and adjusted post test mean values of general, specific and combined general & specific fitness package groups, on sports achievement motivation are graphically represented in the figure - VI.

**FIGURE - VI**

**PRE POST AND ADJUSTED POST TEST DIFFERENCES OF THE  
ON SPORTS ACHIEVEMENT MOTIVATION**

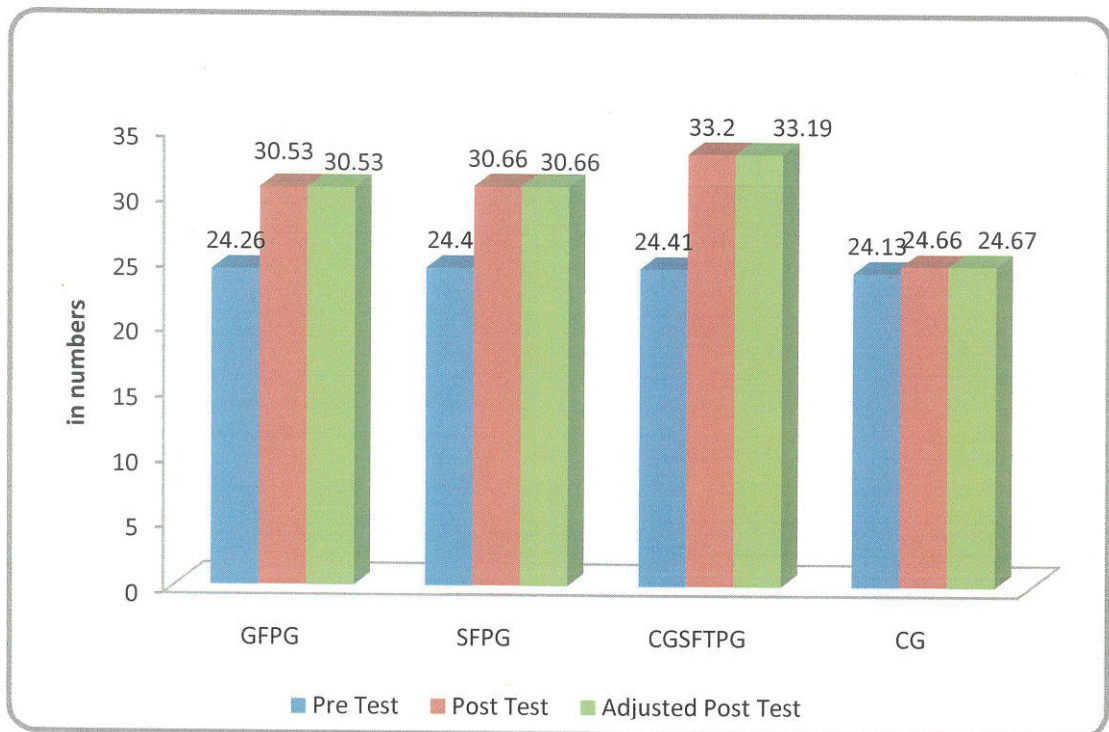


TABLE - XVIII

COMPUTATION OF ANALYSIS OF COVARIANCE OF MEAN OF GENERAL, SPECIFIC AND COMBINED GENERAL & SPECIFIC FITNESS GROUPS ON SERVICE

	GFPG	SFPG	CGSFPG	CG	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	3.40	3.53	3.46	3.20	BG	0.93	3	0.31	0.38
					WG	45.46	56	0.81	
Post-Test Means	6.26	6.20	7.93	3.46	BG	153.93	3	51.31	38.83*
					WG	74.00	56	1.32	
Adjusted Post-Test Means	6.26	6.19	7.92	3.47	BG	150.58	3	50.19	37.39*
					WG	73.81	55	1.34	

BG- Between Group Means

WG- Within Group Means

df- Degrees of Freedom

\* - Significant

(Table Value for 0.05 Level for df 3 & 56 = 2.76)

(Table Value for 0.05 Level for df 3 & 56 = 2.77)

#### 4.5.7 Results of Service

An examination of table - XVIII indicated that the pretest means of general, specific and combined general & specific fitness package groups were 3.40, 3.53, 3.46 and 3.20 respectively. The obtained F-ratio for the pre-test was 0.38 and the table F-ratio was 2.76. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 3 and 56.

The post-test means of the general, specific and combined general & specific fitness package groups were 6.26, 6.20, 7.93 and 3.46 respectively. The obtained F-ratio for the post-test was 38.83 and the table F-ratio was 2.76. Hence the pre-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 3 and 56.

The adjusted post-test means of the general, specific and combined general & specific fitness package groups were 6.26, 6.19, 7.92 and 3.47 respectively. The obtained F-ratio for the adjusted post-test means was 37.39 and the table F-ratio was 2.77. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 3 and 55.

To determine which of the paired means had a significance difference the Scheffe's test was used as post-hoc test and the results are presented in the table.



**TABLE - XIX**

**THE SCHEFFE'S TEST FOR THE DIFFERENCES  
BETWEEN THE ADJUSTED POST TEST  
PAIRED MEANS ON SERVICE**

Adjusted Post-test means				Mean Difference	Confidence Interval
GFPG	SFPG	CGSFPG	CG		
6.26	6.19	---	---	0.07	0.92
6.26	---	7.92	---	1.66*	
6.26	---	---	3.47	2.79*	
---	6.19	7.92	---	1.73*	
---	6.19	---	3.47	2.72*	
---	---	7.92	3.47	4.45*	

*\* Significant at 0.05 level of confidence*

Table XIX shows that the mean difference between general fitness package and combined general & specific fitness package groups, general fitness package and control groups, specific fitness package and combined general & specific fitness package groups, specific fitness package and control groups, combined general & specific fitness package and control groups were 1.66, 2.79, 1.73, 2.72 and 4.45 respectively on service are greater than the confidence interval value 0.92, which shows significant difference at 0.05 level of confidence.

The mean difference between general fitness package and groups was 0.07 on service are lesser than the confidence interval value 0.92, which shows insignificant difference at 0.05 level of confidence.

The pre, post and adjusted post test mean values of general, specific and combined general & specific fitness package groups, on service are graphically represented in the figure - VII.

**FIGURE - VII**

**PRE POST AND ADJUSTED POST TEST DIFFERENCES OF THE  
ON SERVICE**

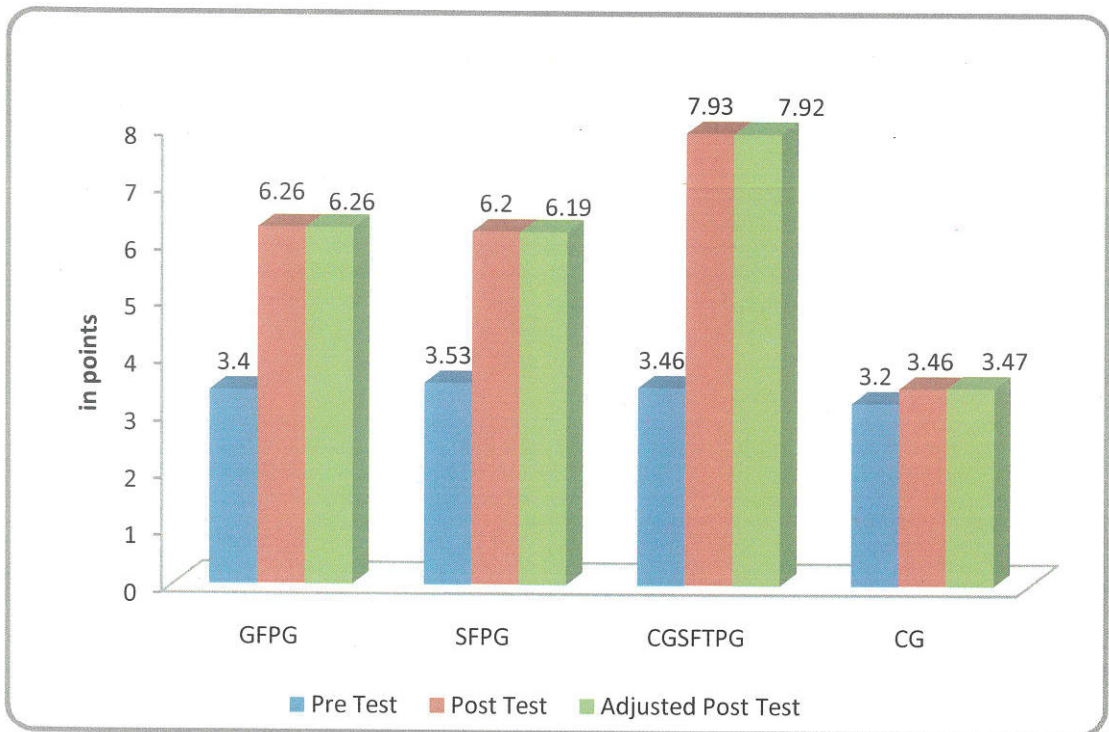


TABLE - XX

COMPUTATION OF ANALYSIS OF COVARIANCE OF MEAN OF GENERAL, SPECIFIC AND COMBINED  
GENERAL & SPECIFIC FITNESS GROUPS ON ATTACK

	GFPG	SFPG	CGSFPG	CG	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	3.46	3.53	3.26	3.53	BG	0.71	3	0.23	0.31
					WG	42.13	56	0.75	
Post-Test Means	6.46	6.33	8.20	3.26	BG	189.33	3	63.11	48.81*
					WG	72.40	56	1.29	
Adjusted Post-Test Means	6.55	6.34	8.22	3.13	BG	700.60	3	233.53	55.10*
					WG	237.32	56	4.23	

\* - Significant

BG- Between Group Means

WG- Within Group Means (Table Value for 0.05 Level for df 3 & 56 = 2.76)

df- Degrees of Freedom (Table Value for 0.05 Level for df 3 & 56 = 2.77)

df- Degrees of Freedom (Table Value for 0.05 Level for df 3 & 56 = 2.77)

#### 4.5.8 Results of Attack

An examination of table - XX indicated that the pretest means of general, specific and combined general & specific fitness package groups were 3.46, 3.53, 3.26 and 3.53 respectively. The obtained F-ratio for the pre-test was 0.31 and the table F-ratio was 2.76. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 3 and 56.

The post-test means of the general, specific and combined general & specific fitness package groups were 6.46, 6.33, 8.20 and 3.26 respectively. The obtained F-ratio for the post-test was 48.81 and the table F-ratio was 2.76. Hence the pre-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 3 and 56.

The adjusted post-test means of the general, specific and combined general & specific fitness package groups were 6.55, 6.34, 8.22 and 3.13 respectively. The obtained F-ratio for the adjusted post-test means was 55.10 and the table F-ratio was 2.77. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 3 and 55.

To determine which of the paired means had a significance difference the Scheffe's test was used as post-hoc test and the results are presented in the table.

TABLE - XXI

THE SCHEFFE'S TEST FOR THE DIFFERENCES BETWEEN THE  
ADJUSTED POST TEST PAIRED MEANS ON ATTACK

Adjusted Post-test means				Mean Difference	Confidence Interval
GFPG	SFPG	CGSFPG	CG		
6.55	6.34	---	---	0.21	1.63
6.55	---	8.22	---	1.67*	
6.55	---	---	3.13	3.42*	
---	6.34	8.22	---	1.88*	
---	6.34	---	3.13	3.21*	
---	---	8.22	3.13	5.09*	

\* *Significant at 0.05 level of confidence*

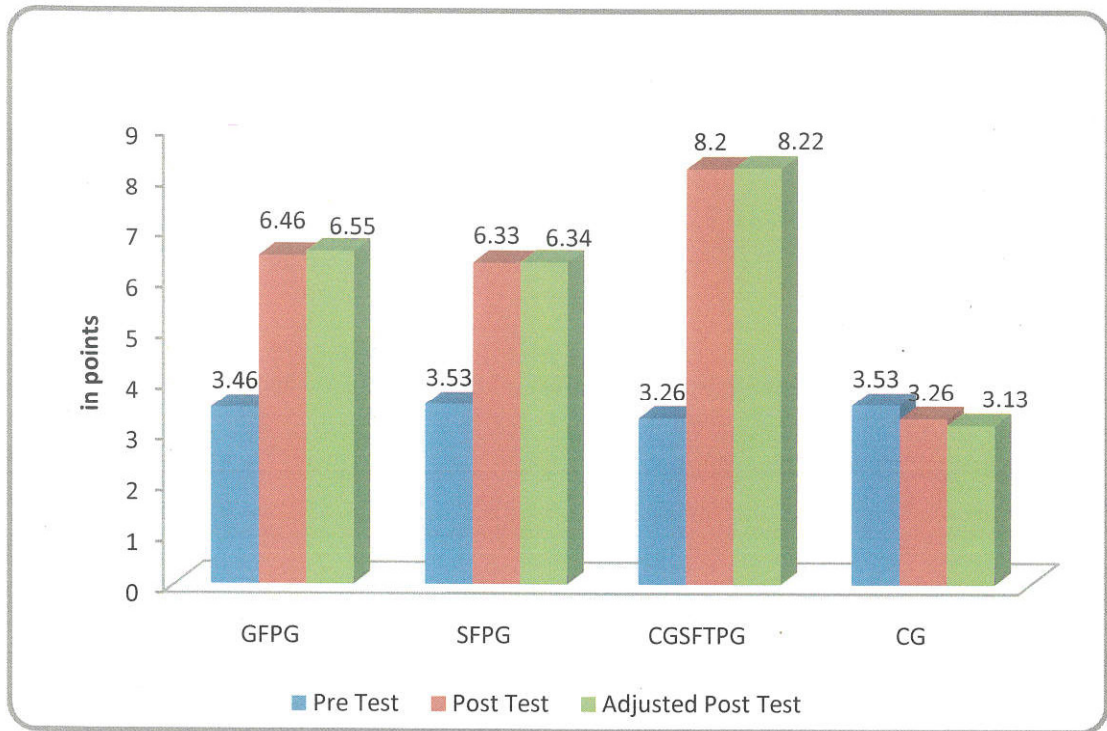
Table XXI shows that the mean difference between general fitness package and combined general & specific fitness package groups, general fitness package and control groups, specific fitness package and combined general & specific fitness package groups, specific fitness package and control groups, combined general & specific fitness package and control groups were 1.67, 3.42, 1.88, 3.21 and 5.09 respectively on are greater than the confidence interval value 1.63, which shows significant difference at 0.05 level of confidence.

The mean difference between general fitness package and groups was 0.21 on attack are lesser than the confidence interval value 1.63, which shows insignificant difference at 0.05 level of confidence.

The pre, post and adjusted post test mean values of general, specific and combined general & specific fitness package groups, on attack are graphically represented in the figure - VIII.

**FIGURE - VIII**

**PRE POST AND ADJUSTED POST TEST DIFFERENCES OF THE  
ON ATTACK**



## **4.6 DISCUSSION ON FINDINGS**

The prime intention of the researcher was to analyse the effect of isolated and combined effect of general and specific fitness packages on selected physical fitness, psychological variables and skill performance of volleyball players. While analyzing results it was revealed that there was a significant differences found in all the experimental groups.

### **4.6.1 Comparing the Effects of General Fitness packages Group (GFPG) and Control Group (CG)**

In comparing the effect of general fitness packages on selected physical fitness, psychological variables and skill performance from the obtained f-ratios, it was observed that GFPG showed better performance on increasing speed, explosive power, flexibility, self confidence, sports achievement motivation, service, attack and decreasing in anxiety.

### **4.6.2 Comparing the Effects of Specific Fitness packages Group (SFPG) and Control Group (CG)**

In comparing the effect of specific fitness packages group on selected physical fitness, psychological variables and skill performance, from the obtained f-ratios, it was observed that SFPG showed better performance on increasing speed, explosive power, flexibility, self confidence, sports achievement motivation, service, attack and decreasing in anxiety.

### **4.6.3 Comparing the Effect of Combined General & Specific Fitness packages Group (CGSFPG) and Control Group (CG)**

In comparing the effect of combined general & specific fitness packages group on selected physical fitness, psychological variables and skill performance, from the obtained f-ratios, it was observed that CGSFPG showed

better performance on increasing speed, explosive power, flexibility, self confidence, sports achievement motivation, service, attack and decreasing in anxiety.

#### **4.6.4 Comparing the Effect of General Fitness packages Group (GFPG) and Specific Fitness packages group (SFPG)**

In comparing the effect of general fitness packages group and specific fitness packages group on selected physical fitness, psychological variables and skill performance, from the obtained f-ratios, it was observed that both fitness modules have produced similar effect on speed, explosive power, flexibility, self confidence, sports achievement motivation, service, attack and anxiety.

#### **4.6.5 Comparing the Effect of Combined General & Specific Fitness packages group (CGSFPG) and Specific Fitness packages group (SFPG)**

In comparing the effect of combined general & specific fitness packages group selected physical fitness, psychological variables and skill performance, from the obtained f-ratios, it was observed that CGSFPG showed better performance on speed, explosive power, flexibility, self confidence, sports achievement motivation, service, attack and anxiety than the GFPG.

#### **4.6.6 Comparing the Effect of Combined General & Specific Fitness packages group (CGSFPG) and General Fitness packages group (GFPG)**

In comparing the effect of combined general & specific fitness packages group selected motor fitness, physiological variables and performance variables, from the obtained f-ratios, it was observed that CGSFPG showed better performance on speed, explosive power, flexibility, self confidence, sports achievement motivation, service, attack and anxiety than the GFPG.



#### 4.7 DISCUSSION OF HYPOTHESIS

The formulated hypotheses of this study were,

1. It was hypothesized that there was significant improvement on selected physical fitness psychology variables and skill performance variables due to the effect of General fitness training.

Based on the results of the study the formulated above hypothesis was accepted at 0.05 level of confidence.

2. It was hypothesized that the physiological variables may significantly change due to general fitness training.

Based on the results of this study, the formulated above hypotheses is accepted at 0.05 level of confidence for the selected variables of general fitness training group.

3. It was hypothesized that there may be significant improvement on selected physical fitness and skill performance variables due to the effect of Specific fitness training

Based on the results of the study the formulated above hypothesis was accepted at 0.05 level of confidence.

4. It was hypothesized that there may be significant changes in psychological variables due to specific fitness training.

Based on the results of this study, the formulated above hypotheses is accepted at 0.05 level of confidence for the selected variables of special fitness training group.

5. It was hypothesized that the combined training may significantly improve on selected physical fitness variables and skill performance variables than the isolated training groups.

Based on the results of the study the formulated above hypothesis was accepted at 0.05 level of confidence.

6. It was hypothesized that there may be significant changes in psychological variables due to combined training.

Based on the results of this study, the formulated above hypotheses is accepted at 0.05 level of confidence for the selected variables of combined training group.

7. It was hypothesized that there may not be significant difference on selected physical fitness psychology variables and skill performance variables among control group.

Based on the results of this study, the formulated above hypotheses is accepted at 0.05 level of confidence for the selected variables of control group.