CHAPTER - IV

RESULTS AND DISCUSSIONS

4.1 OVERVIEW

This chapter deals with the analysis of data collected from the samples under study. The purpose of this study was to find out the isolated and combined effect of yogic practices and aerobic exercises on selected physical fitness physiological psychological and skill performance variables of women basket ball players. To achieve the purpose sixty (n=60) women basketball players who participated at inter collegiate women basketball tournaments from affiliated college of University of Madras during the academic year 2012-2013 were randomly selected as subjects. The age of the players were ranged between 18 to 21years as per their school records. They were further assigned into four groups. Consisting of fifteen (n=15) each. Group-I acted as experimental group I (yogic practices) Group-II acted as experimental group II (aerobic exercises) Group-III (combined yogic practices and aerobic exercises) acted as experimental group III and group IV acted as control group. The pretest was conducted for all the selected subjects on selected physical fitness variables namely speed, muscular strength and flexibility, physiological variables such as VO_2 max, vital capacity and respiratory rate, psychological variables namely anxiety and aggression and skill performance variables viz., dribbling, passing and shooting. The initial test scores formed as pre test scores of the subjects. Experimental group was exposed to yogic practices experimental group II was subjected to aerobic exercises, experimental group III underwent combined yogic practices and aerobic exercises and the control group was not exposed to any experimental training other than their regular daily academic curriculum. The experimental period was fixed for twelve weeks. After the experimental treatment all the subjects were measured on the selected physical fitness, physiological, psychological and skill performance variables of basketball players. The final test scores formed as post test scores of the subjects. The normality of the data were found through mean, standard deviation and the data collected were found to be normal. The differences between the initial and final scores in selected variables were subjected to statistical treatment using Analysis of Covariance (ANCOVA) to find out whether the mean differences were significant or not.

4.2 TEST OF SIGNIFICANCE

This is the vital portion of thesis achieving the conclusion by examining the hypotheses. The procedure of testing the hypotheses was either by accepting the hypotheses or rejecting the same in accordance with the results obtained in relation to the level of confidence.

In this study, if they obtained F-value was greater than the table value, the alternative hypotheses were accepted to the effect that there existed significant difference among the means of the groups compared and if they obtained values were lesser than the required values, then the null hypotheses were accepted to the effect that there existed no significant differences among the means of the groups under study.

4.3 LEVEL OF SIGNIFICANCE

The data collected on selected criterion variables were analyzed using analysis of Covariance (ANCOVA) to find out the significant differences if any, between the groups separately. In all the cases, 0.05 level of confidence was fixed to test the significance, which was considered appropriate.

4.4 COMPUTATION OF ANALYSIS OF COVARIANCE AND POST HOC TEST

4.4.1 RESULTS ON SPEED

The physical fitness variable, speed was measured through 50 meters run. The results on the effect of yogic practices, aerobic exercises, combined (yogic practices and aerobic exercises) groups and control group were presented in Table -X.

TABLE - X

COMPUTATION OF ANALYSIS OF COVARIANCE ON SPEED (Scores in Seconds)

Test	Yogic practices group	Aerobic exercises group	Combined (yogic practices and aerobic exercises) group	Control group	Source of variance	Sum of squares	df	Mean squares	F ratio
Pre test Mean	7.87	7.94	7.81	7.98	Between	0.25	3	0.08	2.44
STD	0.58	0.39	0.31	0.46	Within	11.18	56	0.20	
Post test Mean	7.63	7.57	7.23	7.99	Between	4.35	3	1.45	5.29*
STD	0.65	0.51	0.43	0.49	Within	15.35	56	0.27	
Adjusted Mean	7.65	7.55	7.28	7.95	Between	3.39	3	1.13	5.17*
					Within	12.03	55	0.22	
Mean gain	0.23	0.37	0.58	0.01					

Table F-ratio at 0.05 level of confidence for 3 and 55 (df), 3 and 56(df) was 2.78.
* Significant.

Table X showed the pretest mean scores of speed of yogic practices group was 7.87 aerobic exercises group was 7.94, combined yogic practices and aerobic exercises group was 7.81 and control group was 7.98.The post test means showed differences due to experimental training and mean values recorded were 7.63,7.57,7.23 and 7.99 respectively.

As shown in table X the obtained F value on the scores of pre test means 2.44 was less than the required value 2.78, which proved that the random assignment of the subjects were successful and their scores in speed before the training were equal and there was no significant differences.

The post test scores analysis proved that there was significant difference between the groups, as the obtained F value 5.29 was greater than the required F value of 2.78 proved that the differences between the post test means of the subjects were significant.

Taking into consideration the pre and post test scores among the group's adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value of 5.17 was greater than the required F value of 2.78. This showed that there were significant differences among the adjusted means on women basketball players.

Since the significant improvements were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in table – XI.

TABLE - XI

SCHEFFE'S CONFIDENCE INTERVAL TEST SCORES ON SPEED (Scores in Seconds)

Control group	Yogic practices group	Aerobic exercises Group	Combined (yogic practices and aerobic exercises) group	Mean Difference	CD at 5% Level
7.95	7.65			0.28	0.49
7.95		7.55		0.40	
7.95			7.28	0.67*	
	7.65	7.55		0.11	
	7.65		7.28	0.37	
		7.55	7.28	0.27	

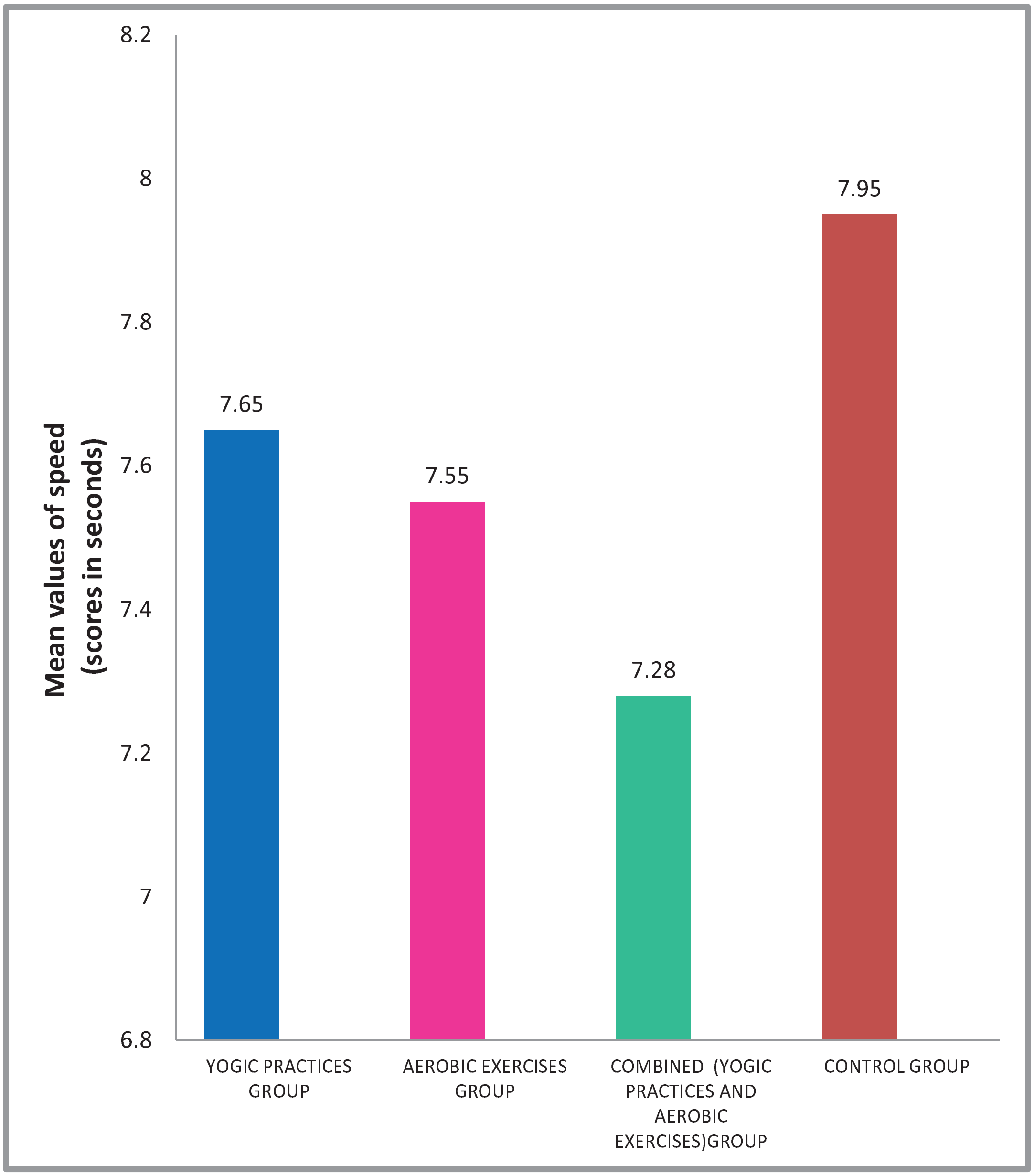
* Significant at 0.05 level.

The post hoc analysis of obtained ordered adjusted means proved that there were significant differences between control group and combined (yogic practices and aerobic exercises) group. As the confidence interval required to be significant at 0.05 level was 0.49 and the obtained values was greater than the required value, it was observed that the significant difference was found to be existed. It was further seen that there was no significant differences between control group and yogic practices group, control group and aerobic exercises group, yogic practices group and aerobic exercises group, yogic practices and combined (yogic practices and aerobic exercises) group, aerobic exercises and combined(yogic practices and aerobic exercises)group.

The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Figure -32.

FIGURE - 32

BAR DIAGRAM ON ORDERED ADJUSTED MEANS OF SPEED



4.4.1.1 DISCUSSIONS ON FINDINGS OF SPEED

The results presented in Table X showed the obtained adjusted means on speed among yogic practices group was 7.65, aerobic exercises group was 7.55 combined (yogic practices and aerobic exercises) group was 7.28 and followed by control group with a mean value of 7.95. The differences among pre test scores, post test scores and adjusted mean scores of the subjects were statistically treated using ANCOVA and the obtained F values were 2.44, 5.29 and 5.17 respectively. It was found that obtained F value on pre test scores were not significant and the obtained F values on post test and adjusted means were significant at 0.05 level of confidence, as these were greater than the required F value of 2.78.

The post hoc analysis of obtained ordered adjusted means proved that there were significant differences between control group and combined (yogic practices and aerobic exercises) group and the differences were significant at 0.05 level. It was found that there was no significant differences between control group and yogic practices group, control group and aerobic exercises group, yogic practices group and aerobic exercises group, yogic practices and combined (yogic practices and aerobic practices) group, aerobic exercises and combined (yogic practices and aerobic exercises)group.

Further the post hoc analysis showed that there was significant difference among the experimental group in comparison to the control group which clearly indicating that combined training i.e. yogic practices and aerobic exercises was considered significantly better, subsequently aerobic exercises and followed by yogic practices in improving speed performance of women basketball players. The findings of the study are in line with the study undertaken by **Reddy et al., (2012), Tiken et al., (2002)** and **Bari Shaikh, (2013).**

4.4.2 RESULTS ON MUSCULAR STRENGTH

The fitness variable, muscular strength was measured through pushups. The results on the effect of yogic practices, aerobic exercises, combined (yogic practices and aerobic exercises) groups and control group were presented in Table –XII.

TABLE - XII

COMPUTATION OF ANALYSIS OF COVARIANCE ON MUSCULAR STRENGTH

(Scores in Numbers)

Test	Yogic practices group	Aerobic exercises group	Combined (yogic practices and aerobic exercises) group	Control group	Source of Variance	Sum of Squares	df	Mean squares	F Ratio
Pretest Mean	18.27	18.33	18.40	17.93	Between	1.93	3	0.64	2.18
STD	1.16	1.11	1.06	1.39	Within	78.80	56	1.41	
Post test Mean	22.00	23.40	23.87	17.80	Between	343.00	3	114.33	57.30*
STD	1.25	1.35	1.60	1.42	Within	111.73	56	2.00	
Adjusted Mean	21.99	23.38	23.83	17.87	Between	322.49	3	107.50	55.33*
					Within	106.86	55	1.94	
Mean gain	3.73	5.07	5.47	0.13					

Table F-ratio at 0.05 level of confidence for 3 and 55 (df), 3 and 56(df) was 2.78.
* Significant

Table XII showed the pre test mean scores of muscular strength of yogic practices group was 18.27, aerobic exercises group was 18.33, combined (yogic practices and aerobic exercises) group was 18.40 and control group was 17.93.The post test means showed differences due to experimental training and mean values recorded were 22.00, 23.40, 23.87 and 17.80 respectively.

As shown in table XII the obtained F value on the scores of the pre test means 2.18 was less than required value 2.78, which proved that the random assignment of the subjects were successful and their scores in muscular strength before the training were equal and there was no significant differences.

The post test scores analysis proved that there was significant difference between the groups, as the obtained F value 57.30 was greater than the required F value of 2.78. This proved that the differences between the post test means of the subjects were significant.

Taking into consideration the pre and post test scores among the group's adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value of 55.33 was greater than the required F value of 2.78. This showed that there were significant differences among the adjusted means on women basketball players.

Since significant improvements were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in table – XIII.

TABLE - XIII

SCHEFFE'S CONFIDENCE INTERVAL TEST SCORES ON MUSCULAR STRENGTH

(Scores in Numbers)

Control group	Yogic practices group	Aerobic exercises Group	Combined (yogic practices and aerobic exercises) group	Mean Difference	CD at 5% Level
17.87	21.99			4.12*	1.47
17.87		23.38		5.50*	
17.87			23.83	5.95*	
	21.99	23.38		1.38	
		23.38	23.83	0.50	
	21.99		23.83	1.83*	

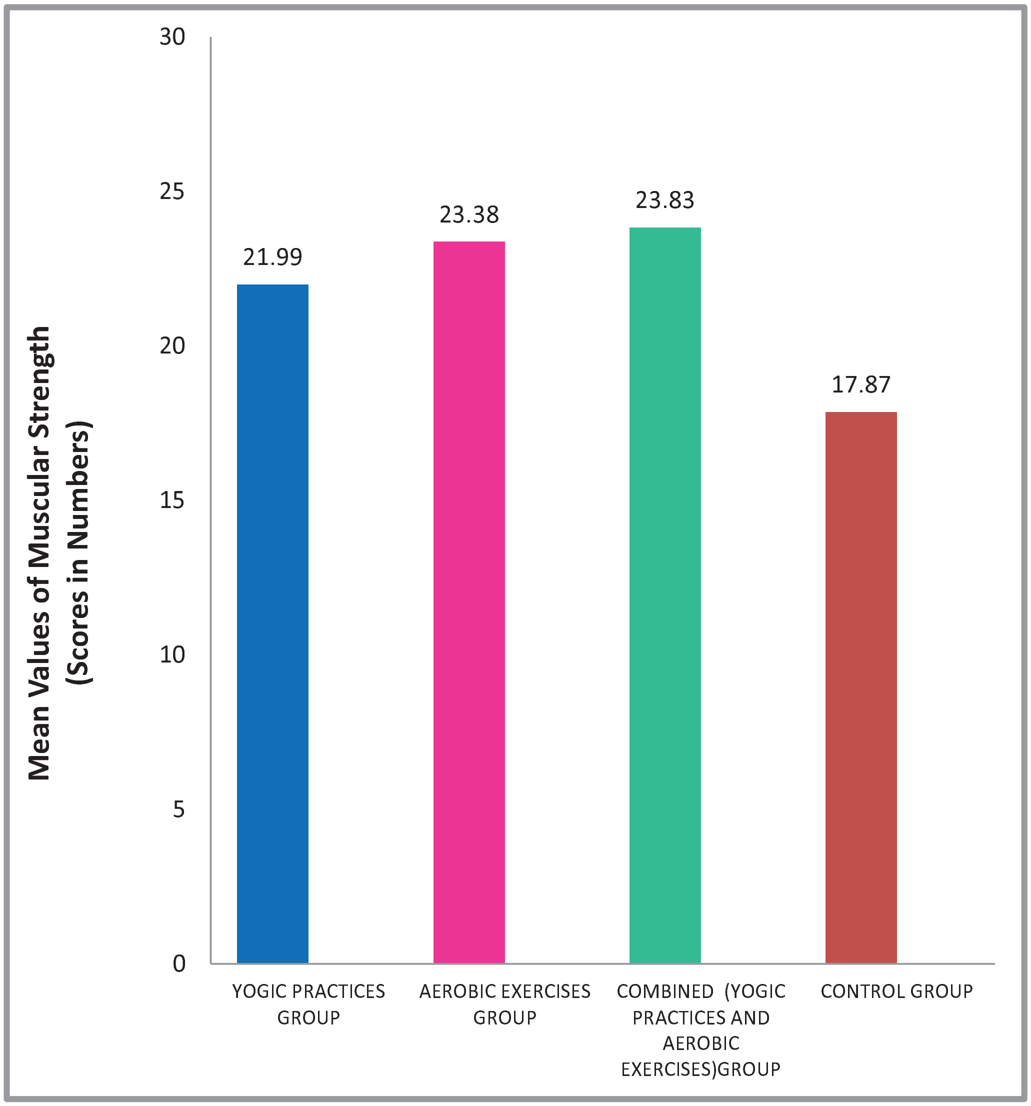
* Significant at 0.05 level.

The post hoc analysis of obtained ordered adjusted means proved that there were significant differences between control group and yogic practices group, control group and aerobic exercises group, control group and combined (yogic practices and aerobic exercises) group and yogic practices group and combined (yogic practices and aerobic exercises) group. As the confidence interval required to be significant at 0.05 levels was 1.47 and the obtained values were greater than the required value, it was observed that the significant difference were found existed. It was further seen that there was no significant difference between yogic practices group and aerobic exercises group, aerobic exercises group and combined (yogic practices and aerobic exercises) group.

The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Figure -33.

FIGURE -33

BAR DIAGRAM ON ADJUSTED MEANS OF MUSCULARSTRENGTH



4.4.2.1 DISCUSSION ON FINDINGS OF MUSCULAR STRENGTH

The results presented in table XII showed the obtained adjusted means on muscular strength among yogic practices group was 21.99, aerobic exercises group was 23.38 and combined (yogic practices and aerobic exercises) group was 23.83 and followed by control group with a mean value of 17.87.The differences among the pre test scores, post test scores and adjusted mean scores of the subjects were statistically treated using ANCOVA and the obtained F values were 2.18, 57.30 and 55.33 respectively. It was found that obtained F value on pre test scores were not significant and the obtained F values on post test and adjusted means were significant at 0.05 level of confidence, as these were greater than the required F value of 2.78.

The post hoc analysis of obtained ordered adjusted means proved that there were significant differences between control group and yogic practices group, control group and aerobic exercises group, control group and combined(yogic practices and aerobic exercises) group, yogic practices group and combined (yogic practices and aerobic exercises) group and the difference were significant at 0.05 level. It was found that there was no significant difference between yogic practices group and aerobic exercises group, aerobic exercises group and combined (yogic practices and aerobic exercises)group.

Further, the post hoc analysis showed that there was significant differences among the experimental groups in comparison to the control group which clearly indicating that combined training i.e., yogic practices and aerobic exercises was considered significantly better, subsequently aerobic exercises and followed by yogic practices in gaining the performance of muscular strength of women basketball players. The findings of the study are in favour of the study undertaken by **Chen et al., (2009**) and **Arent et al., (2010).**

4.4.3 RESULTS ON FLEXIBILITY

The physical fitness variable, flexibility was measured through Sit & reach test. The results on the effect of yogic practices, aerobic exercises, combined (yogic practices and aerobic exercises) groups and control group were presented in Table-XIV.

TABLE - XIV

COMPUTATION OF ANALYSIS OF COVARIANCE ON FLEXIBILITY

(Scores in Centimeters)

Test	Yogic practices group	Aerobic exercises group	Combined (yogic practices and aerobic exercises) group	Control group	Source of Variance	Sum of Squares	df	Mean squares	F Ratio
Pre test Mean	16.53	15.67	16.07	15.87	Between	6.20	3	2.07	2.69
STD	2.64	2.02	2.09	2.61	Within	311.73	56	5.57	
Post test Mean	21.40	19.93	25.33	17.20	Between	517.67	3	172.56	23.44*
STD	2.75	2.05	1.35	3.99	Within	412.27	56	7.36	
Adjusted Mean	21.16	20.11	25.32	17.28	Between	498.53	3	166.18	26.76*
					Within	341.49	55	6.21	
Mean gain	4.87	4.27	9.27	1.33					

Table F-ratio at 0.05 level of confidence for 3 and 55 (df), 3 and 56(df) was 2.78.
* Significant

Table XIV showed the pre test mean scores of flexibility of yogic practices group was 16.53, aerobic exercises group was 15.67,combined(yogic practices and aerobic exercises)group was 16.07 and control group was 15.87.The post test means showed differences due to experimental training and mean values recorded were 21.40,19.93,25.33 and 17.20 respectively.

As shown in table XIV the obtained F value on the scores of pre test means 2.69 was less than the required value 2.78, which proved that the random assignment of the subjects were successful and their scores in flexibility before the training were equal and there was no significant differences.

The post test scores analysis proved that there was a significant difference between the groups, as the obtained F value 23.44 was greater than the required F value of 2.78. This proved that the differences between the post test means of the subjects were significant.

Taking into consideration the pre and post test scores among the group's adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value of 26.76 was greater than the required F value of 2.78. This showed that there were significant differences among the adjusted means on women basketball players.

Since significant improvements were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in table –XV.

TABLE - XV

SCHEFFE'S CONFIDENCE INTERVAL TEST SCORES ON FLEXIBILITY

(Scores in centimeters)

Control group	Yogic practices group	Aerobic exercises Group	Combined (yogic practices and aerobic exercises) group	Mean Difference	CD at 5% Level
17.28	21.16			3.88*	2.63
17.28		20.11		2.83*	
17.28			25.32	8.04*	
	21.16	20.11		1.05	
		20.11	25.32	5.21*	
	21.16		25.32	4.16*	

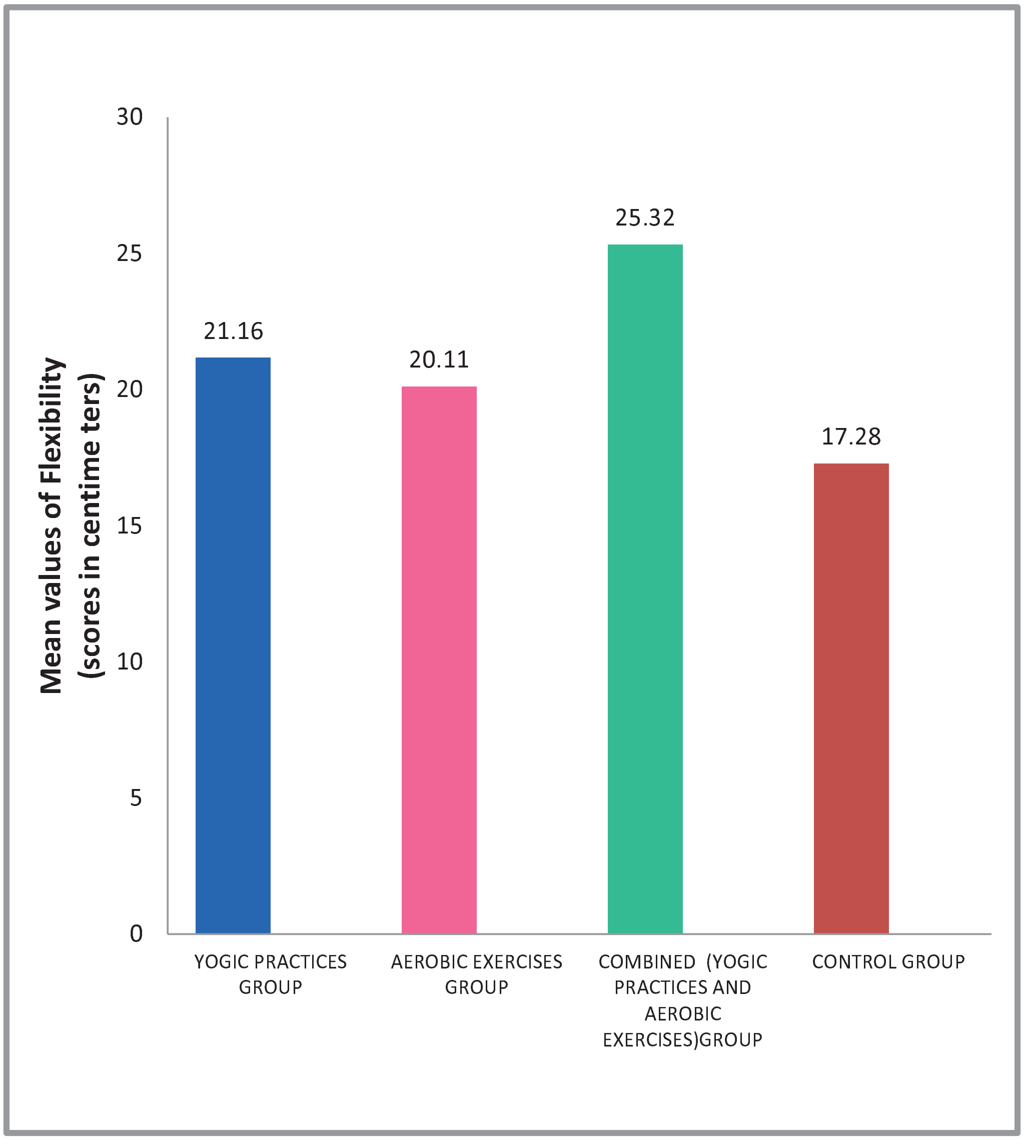
* Significant at 0.05 level.

The post hoc analysis of obtained ordered adjusted means proved that there were significant differences between control group and yogic practices group, control group and aerobic exercises group, control group and combined (yogic practices and aerobic exercises) group, aerobic exercises group and combined (yogic practices and aerobic exercises) group and yogic practices group and combined (yogic practices and aerobic exercises) group. As the confidence interval required to be significant at 0.05 level was 2.63 and the obtained values were greater than the required value, it was observed that the significant differences were found to be existed. It was further seen that there was no significant difference between yogic practices group and aerobic exercises group.

The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Figure -34

FIGURE -34

BAR DIAGRAM ON ORDERD ADJUSTED MEANS OF FLEXIBILITY



4.4.3.1 DISCUSSION ON FINDINGS OF FLEXIBILITY

The results presented in table XIV showed the obtained adjusted means on flexibility among yogic practices group was 21.16, aerobic exercises group was 20.11 and combined (yogic practices and aerobic exercises) group was 25.32 and followed by control group with a mean value of 17.28.The differences among pre test scores, post test scores and adjusted mean scores of the subjects were statistically treated using ANCOVA and the obtained F values were 2.69, 23.44 and 26.76respectively. It was found that obtained F value on pre test scores were not significant and the obtained F values on post test and adjusted means were significant at 0.05 level of confidence, as these were greater than the required F value of 2.78.

The post hoc analysis of obtained ordered adjusted means proved that there were significant differences between control group and yogic practices group, control group and aerobic exercises group, control group and combined (yogic practices and aerobic exercises) group, aerobic exercises group and combined (yogic practices and aerobic exercises) group, yogic practices group and combined (yogic practices and aerobic exercises) group and the difference were at 0.05 level. It was found that there was no significant difference between yogic practices and aerobic exercises groups.

Further, the post hoc analyses showed that there was significant differences among the experimental groups in comparison to the control groups which clearly indicating that combined training i.e., yogic practices and aerobic exercises was considered significantly better, subsequently yogic practices and followed by aerobic exercises in gaining the performance of flexibility of women basketball players. The findings of the study are in favour of the study undertaken by **Okuneye, et al., (2010) Ravikumar (2001), Maity and Samanta (2001) and Tiken, et al., (2002).**

4.4.4 RESULTS ON VO_2 MAX

The Physiological variable, VO_2 max was measured through Cooper's 12 minutes run/walk test. The results on the effect of yogic practices, aerobic exercises, combined (yogic practices and aerobic exercises) group and control group were presented in Table -XVI.

TABLE - XVI

COMPUTATION OF ANALYSIS OF COVARIANCE ON VO_2 MAX

(Scores in ml/kg/mm)

Test	Yogic practices group	Aerobic exercises group	Combined (yogic practices and aerobic exercises) group	Control group	Source of Variance	Sum of Squares	df	Mean squares	F Ratio
Pre test Mean	37.86	38.33	38.98	40.25	between	48.55	3	16.18	1.46
STD	3.85	4.85	5.50	5.08	within	1320.93	56	23.59	
Post test Mean	45.09	44.74	46.37	40.31	between	313.78	3	104.59	5.07*
STD	3.35	4.48	5.13	4.98	within	1154.46	56	20.62	
Adjusted Mean	45.84	45.13	46.27	39.26	between	471.73	3	157.24	21.25*
					within	406.91	55	7.40	
Mean gain	7.23	6.41	7.39	0.05					

Table F-ratio at 0.05 level of confidence for 3 and 55 (df), 3 and 56(df) was 2.78.
* Significant

Table XVI showed the pre test mean scores of skill performance of VO_2 max of yogic practices group was 37.86, aerobic exercises group was 38.33, combined (yogic practices and aerobic exercises) group was 38.98 and control group was 40.25.The post test means showed differences due to experimental trainings and mean values recorded were 45.09, 44.74, 46.37 and 40.31 respectively.

As shown in table XVI the obtained F value on the scores of pre test means 1.46 was less than the required value 2.78, which proved that the random assignment of the subject were successful and their scores in VO_2 max before the training were equal and there was no significant differences.

The post test scores analysis proved that there was significant difference between the groups, as the obtained F value 5.07 was greater than the required F value of 2.78. This proved that the differences between the post test means of the subjects were significant.

Taking into consideration the pre and post test scores among the group's adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value of 21.25 was greater than the required F value of 2.78. This showed that there were significant differences among the adjusted means on the women basketball players.

Since significant improvements were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in table – XVII.

TABLE- XVII

SCHEFFE'S CONFIDENCE INTERVAL TEST SCORES ON VO_2 MAX

(Scores in ml/kg/mm)

Control group	Yogic practices group	Aerobic exercises Group	Combined (yogic practices and aerobic exercises) group	Mean Difference	CD at 5% Level
39.26	45.84			6.58*	2.87
39.26		45.13		5.87*	
39.26			46.27	7.02*	
	45.84	45.13		0.71	
	45.84		46.27	0.43	
		45.13	46.27	1.14	

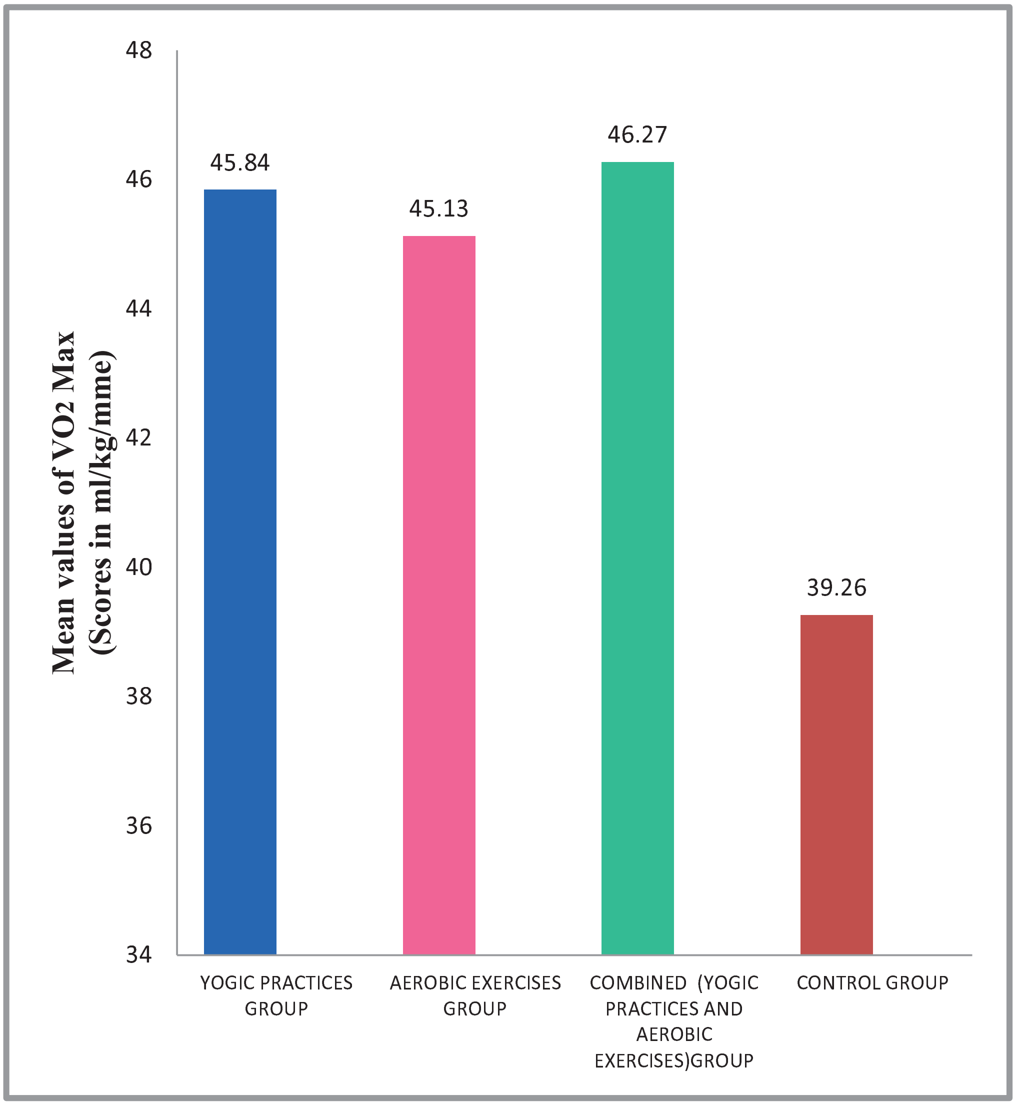
* Significant at 0.05 level.

The post hoc analysis of obtained ordered adjusted means proved that there were significant differences between control group and yogic practices group, control group and aerobic exercises group, control group and combined (yogic practices and aerobic exercises) group. As the confidence interval required to be significant at 0.05 level was 2.87 and the obtained values were greater than the required value, it was observed that the significant differences were found to be existed. It was further seen that there were no significant differences between yogic practices group and aerobic exercises group, yogic practices group and combined (yogic practices and aerobic exercises) group, aerobic exercises group and combined (yogic practices and aerobic exercises) groups.

The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Figure -35.

FIGURE – 35

BAR DIAGRAM ON ORDERD ADJUSTED MEANS OF VO_2 MAX



4.4.4.1 DISCUSSION ON FINDINGS OF VO_2 MAX

The results presented in table XVI showed the obtained adjusted means on VO_2 max among yogic practices group was 45.84, aerobic exercises group was 45.13 and combined (yogic practices and aerobic exercises) group was 46.27 and followed by control group with a mean value of 39.26.The differences among pre test scores, post test scores and adjusted mean scores of the subjects were statistically treated using ANCOVA and the obtained F values were 1.46, 5.07 and 21.25 respectively. It was found that obtained F value on pre test scores were not significant and the obtained F values on post test and adjusted means were significant at 0.05 level of confidence, as these were greater than the required F value of 2.78.

The post hoc analysis of obtained ordered adjusted means proved that there were significant differences between control group and yogic practices group, control group and aerobic exercises group, control group and combined (yogic practices and aerobic exercises) group and the differences were significant at 0.05 level. It was further found that there was no significant differences between yogic practices group and aerobic exercises group, yogic practices group and combined (yogic practices and aerobic exercises) group, aerobic exercises group and combined (yogic practices and aerobic exercises) group.

Further the post hoc analyses showed that there was significant difference among the experimental groups in comparison to the control group, which clearly indicating that combined training i.e., yogic practices and aerobic exercises had significantly produced better performance followed by yogic practices group then aerobic exercises group in improving VO_2 max performance of women basketball players. The findings of the study are in favour of the study undertaken by **Ray et al., (2001), Lohan and Rajesh (2002), Madanmohan et al., (2003).**

4.4.5 RESULTS ON VITAL CAPACITY

The Physiological variable, vital capacity was measured through Spiro meter. The results on the effect of yogic practices, aerobic exercises, combined (yogic practices and aerobic exercises) groups and control group were presented in Table –XVIII.

TABLE-XVIII

COMPUTATION OF ANALYSIS OF COVARIANCE ON VITAL CAPACITY

(Scores in Liters)

Test	Yogic practices group	Aerobic exercises group	Combined (yogic practices and aerobic exercises) group	Control group	Source of Variance	Sum of Squares	df	Mean squares	F Ratio
Pretest Mean	3.07	3.23	3.12	3.08	between	0.24	3	0.08	1.10
STD	0.34	0.30	0.32	0.23	Within	5.03	56	0.09	
Post test Mean	3.42	3.45	3.54	3.12	between	1.52	3	0.51	7.67*
STD	0.32	0.18	0.24	0.27	Within	3.70	56	0.07	
Adjusted Mean	3.44	3.40	3.54	3.14	between	1.33	3	0.44	10.16*
					Within	2.39	55	0.04	
Mean gain	0.34	0.22	0.42	0.03					

Table F-ratio at 0.05 level of confidence for 3 and 55 (df), 3 and 56(df) was 2.78.
* Significant.

Table XVIII showed pre test mean scores of vital capacity of yogic practices group was 3.07, aerobic exercises group was 3.23, combined (yogic practices and aerobic exercises) group was 3.12 and control group was 3.08. The post test means showed differences due to experimental training and mean values recorded were 3.42, 3.45, 3.54 and 3.12 respectively.

As shown in table XVIII the obtained F value on the scores of pre test means 1.10 was less than the required value 2.78, which proved that the random assignment of the subjects were successful and their scores in vital capacity before the training were equal and there was no significant differences.

The post test scores analysis proved that there was significant difference between the groups, as the obtained F value 7.67 was greater than the required F value of 2.78. This proved that the differences between the post test means of the subjects were significant.

Taking into consideration the pre and post test scores among the group's adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value of 10.16 was greater than the required F value of 2.78. This showed that there were significant differences among the adjusted means on the women basketball players.

Since significant improvements were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in table –XIX.

TABLE - XIX

SCHEFFE'S CONFIDENCE INTERVAL TEST SCORES ON VITAL CAPACITY

(Scores in liters)

Control group	Yogic practices group	Aerobic exercises Group	Combined (yogic practices and aerobic exercises) group	Mean Difference	CD at 5% Level
3.14	3.44			0.30*	0.22
3.14		3.40		0.26*	
3.14			3.54	0.40*	
	3.44	3.40		0.04	
	3.44		3.54	0.10	
		3.40	3.54	0.14	

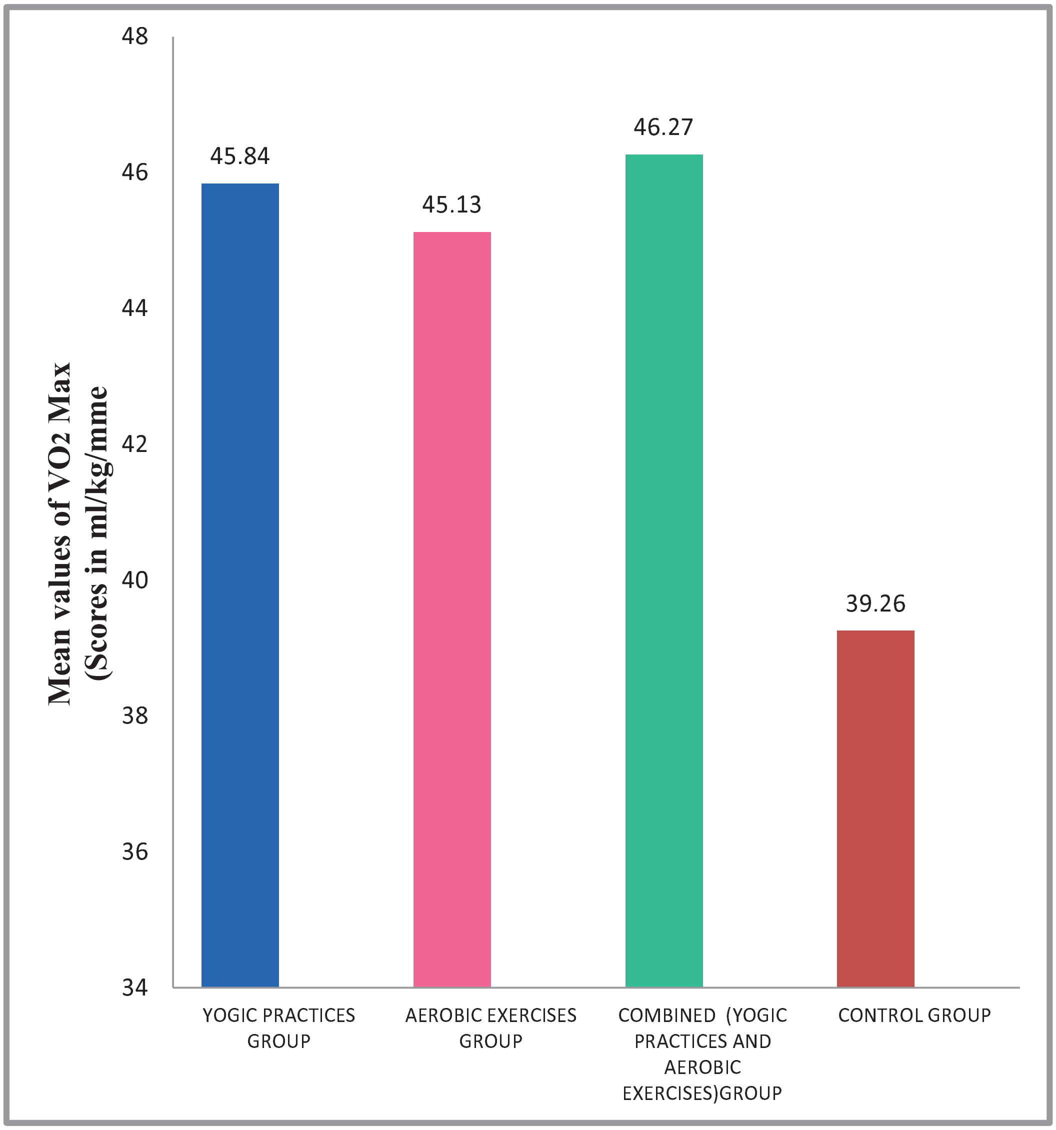
* Significant at 0.05 level.

The post hoc analysis of obtained ordered adjusted means proved that there were significant differences between control group and yogic practices group, control group and aerobic exercises group and control group and combined (yogic practices and aerobic exercises) group. As the confidence interval required to be significant at 0.05 level was 0.22 and the obtained values were greater than the required value, it was observed that significant differences were found to be existed. It was further seen that there was no significant difference found between yogic practices group and aerobic exercises group, yogic practices and combined (yogic practices and aerobic exercises) group and aerobic exercises and combined (yogic practices and aerobic exercises) group.

The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Figure -36.

FIGURE -36

BAR DIAGRAM ON ORDERED ADJUSTED MEANS OF VITAL CAPACITY



4.4.5.1 DISCUSSION ON FINDINGS OF VITAL CAPACITY

The results presented in table XVIII showed the obtained adjusted means on vital capacity among yogic practices group was 3.44, aerobic exercises group was 3.40 and combined (yogic practices and aerobic exercises) group was 3.54 and followed by control group with a mean value of 3.14. The differences among pre test scores, post test scores and adjusted mean scores of the subjects were statistically treated using ANCOVA and the obtained F values were 1.10, 7.67 and 10.16. It was found that obtained F value on pre test scores were not significant and the obtained F values on post test and adjusted means were significant at 0.05 level of confidence, as these were greater than the required F value of 2.78.

The post hoc analysis of obtained ordered adjusted means proved that there were significant differences between control group and yogic practices group, control group and aerobic exercises group, control group and combined (yogic practices and aerobic exercises) group and the differences were significant at 0.05 level. It was found that there was no significant difference between yogic practices group and aerobic exercises group, yogic practices group and combined (yogic practices and aerobic exercises)group, aerobic exercises group and combined (yogic practices and aerobic exercises) group.

Further the post hoc analysis showed that there was significant difference among the experimental groups in comparison to the control group, which clearly indicating that combined training of yogic practices and aerobic exercises had significantly produced better performance followed by yogic practices then aerobic exercises in improving the volume of vital capacity of women basketball players. The findings of the study are in favour of the study undertaken by **Singh and Deol, (2012)** and **Toy (2008).**

4.4.6 RESULTS ON RESPIRATORY RATE

The Physiological variable respiratory rate was measured through expirograph. The results on the effect of yogic practices, aerobic exercises, combined (yogic practices and aerobic exercises) groups and control group were presented in Table -XX.

TABLE - XX

COMPUTATION OF ANALYSIS OF COVARIANCE ON RESPIRATORY RATE

(Scores in Numbers per Minutes)

Test	Yogic practices group	Aerobic exercises group	Combined (yogic practices and aerobic exercises) group	Control group	Source of Variance	Sum of Squares	df	Mean squares	F Ratio
Pretest Mean	26.27	25.80	27.47	25.07	between	45.65	3	15.22	2.55
STD	2.15	1.97	2.61	2.91	within	334.00	56	5.96	
Post test Mean	22.60	23.60	22.53	24.53	between	40.32	3	13.44	2.91*
STD	1.88	3.45	1.96	2.59	within	258.67	56	4.62	
Adjusted Mean	22.54	23.78	21.85	25.10	between	82.28	3	27.43	8.98*
					within	167.88	55	3.05	
Mean gain	3.67	2.20	4.93	0.53					

Table F-ratio at 0.05 level of confidence for 3 and 55 (df), 3 and 56(df) was 2.78.
* Significant.

Table XX showed the pre test mean scores of respiratory rate of yogic practices group was 26.27, aerobic exercises group was 25.80, combined (yogic practices and aerobic exercises) group was 27.47 and control group was 25.07.The post test means showed differences due to experimental trainings and mean values recorded were 22.60, 23.60, 22.53 and 24.53 respectively

As shown in table XX the obtained F value on the scores of pre test means 2.55 was less than the required value 2.78, which proved that the random assignment of the subjects were successful and their scores in respiratory rate before the training were equal and there was no significant differences.

The post test scores analysis proved that there was significant difference between the groups, as the obtained F value 2.91 was greater than the required F value of 2.78. This proved that the differences between the post test means of the subjects were significant.

Taking into consideration the pre and post test scores among the group's adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value of 8.98 was greater than the required F value of 2.78. This showed that there were significant differences among the adjusted means on the women basketball players.

Since significant improvements were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in table XXI.

TABLE - XXI

SCHEFFE'S CONFIDENCE INTERVAL TEST SCORES ON RESPIRATORY RATE

(Scores in Numbers per Minutes)

Control group	Yogic practices group	Aerobic exercises Group	Combined (yogic practices and aerobic exercises) group	Mean Difference	CD at 5% Level
25.10	22.54			2.56*	1.84
25.10		23.78		1.32	
25.10			21.85	3.25*	
	22.54	23.78		1.24	
	22.54		21.85	0.69	
		23.78	21.85	1.94*	

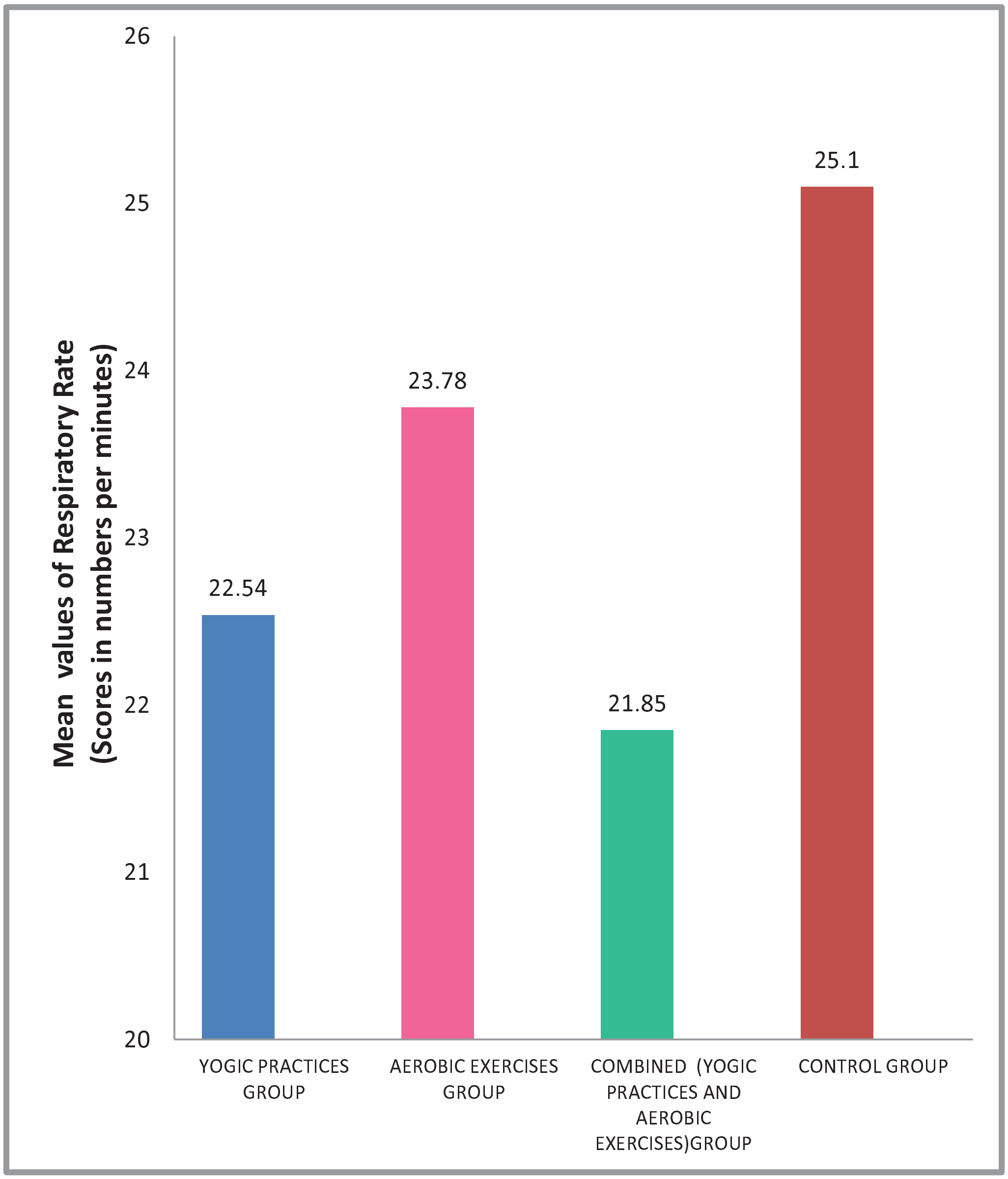
*Significant at 0.05 level.

The post hoc analysis of obtained ordered adjusted means proved that there was significant difference between control group and yogic practices group, control group and combined (yogic practices and aerobic exercises) group and aerobic exercises group and combined (yogic practices and aerobic exercises) group. As the confidence interval required to be significant at 0.05 level was 1.84 and the obtained value was greater than the required value, it was observed that the significant difference was found to be existed. It was further seen that there was no significant differences found between control group and aerobic exercises group, yogic practices group and aerobic exercises group and yogic practices group and combined (yogic practices and aerobic exercises) group.

The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Figure-37.

FIGURE -37

BAR DIAGRAM ON ORDERED ADJUSTED MEANS OF RESPIRATORY RATE



4.4.6.1 DISCUSSION ON THE FINDINGS OF RESPIRATORY RATE

The results presented in table XX showed the obtained adjusted means on respiratory rate among yogic practices group was22.54, aerobic exercises group was 23.78 and combined (yogic practices and aerobic exercises) group was 21.85 and followed by control group with a mean value of 25.10.The differences among pre test scores, post test scores and adjusted mean scores of the subjects were statistically treated using ANCOVA and the obtained F values were 2.55, 2.91 and 8.98. It was found that obtained F value on pre test scores were not significant and the obtained F values on post test and adjusted means were significant at 0.05 level of confidence, as these were greater than the required F value of 2.78.

The post hoc analysis of obtained ordered adjusted means proved that there was significant difference between control group and yogic practices group, control group and combined (yogic practices and aerobic exercises) group and aerobic exercises group and combined (yogic practices and aerobic exercises) group. It was also found that there were no significant differences between control group and aerobic exercises group, , yogic practices group and aerobic exercises group and yogic practices group and combined (yogic practices and aerobic exercises) group.

Further the post hoc analyses showed that there was significant difference among the experimental groups in comparison to the control group, which clearly indicating that combined training i.e., yogic practices and aerobic exercises group was significantly considered better followed by yogic practices group then aerobic exercises group in improving the respiratory rate of women basketball players. The findings of the study are in favour of the study undertaken by **Dhungel et al., (2008), JohnParthiban, (2011)** and **Selvalakshmi ,(2007).**

4.4.7 RESULTS ON ANXIETY

The Psychological variable, anxiety was measured through anxiety Spielberger Questionnaire. The results on the effect of yogic practices, aerobic exercises, combined (yogic practices and aerobic exercises) groups and control group were presented in Table -XXII.

TABLE - XXII

COMPUTATION OF ANALYSIS OF COVARIANCE ON ANXIETY

(Scores in Scores)

Test	Yogic practices group	Aerobic exercises group	Combined (yogic practices and aerobic exercises) group	Control group	Source of Variance	Sum of Squares	df	Mean squares	F Ratio
Pretest Mean	38.67	37.93	38.80	37.87	between	10.58	3	3.53	2.56
STD	3.09	2.87	2.93	3.14	within	506.40	56	9.04	
Post test Mean	35.13	37.33	34.07	36.33	between	90.85	3	30.28	3.24*
STD	3.31	3.35	2.63	2.87	within	523.33	56	9.35	
Adjusted Mean	34.88	37.61	33.72	36.66	between	135.29	3	45.10	9.68*
					within	256.10	55	4.66	
Mean gain	3.53	0.60	4.73	1.53					

Table F-ratio at 0.05 level of confidence for 3 and 55 (df), 3 and 56(df) was 2.78.
* Significant.

Table XXII showed the pre test mean scores of anxiety of yogic practices group was 38.67, aerobic exercise group was 37.93, combined (yogic practices and aerobic exercises) group was 38.80 and control group was 37.87.The post test means showed differences due to experimental trainings and mean values recorded were 35.13, 37.33, 34.07 and 36.33 respectively.

As shown in table XXII the obtained F value on the scores of the pre test means 2.56 was less than the required value 2.78, which proved that the random assignment of the subjects were successful and their scores in anxiety before the training were equal and there was no significant differences.

The post test scores analysis proved that there was significant difference between the groups, as the obtained F value 3.24 was greater than the required F value of 2.78. This proved that the differences between the post test means of the subjects were significant.

Taking into consideration the pre and post test scores among the group's adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value of 9.68 was greater than the required F value of 2.78. This showed that there were significant differences among the adjusted means on the women basketball players.

Since significant improvements were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in table –XXIII.

TABLE - XXIII

SCHEFFE'S CONFIDENCE INTERVAL TEST SCORES ON ANXIETY

(Scores in Scores)

Control group	Yogic practices group	Aerobic exercises Group	Combined (yogic practices and aerobic exercises) group	Mean Difference	CD at 5% Level
36.66	34.88			1.78	2.28
36.66		37.61		0.95	
36.66			33.72	2.94*	
	34.88	37.61		2.73*	
	34.88		33.72	1.16	
		37.61	33.72	3.89*	

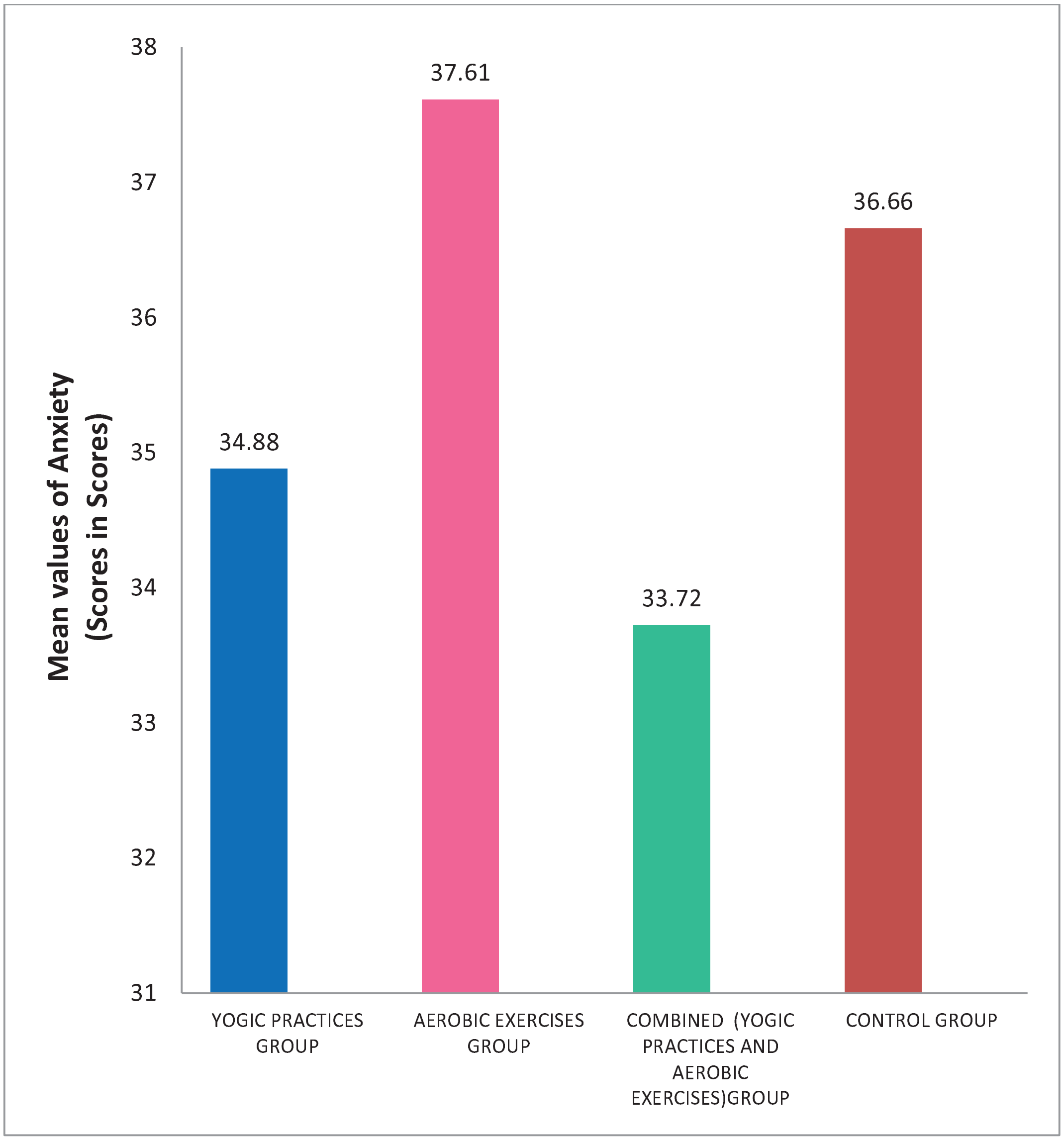
* Significant at 0.05 level.

The post hoc analysis of obtained ordered adjusted means proved that there were significant differences between control group and combined (yogic practices and aerobic exercises) group, yogic practices group and aerobic exercises group and aerobic exercises group and combined (yogic practices and aerobic exercises) group. As the confidence interval required to be significant at 0.05 level was 2.28 and the obtained values were greater than the required value, it was observed that the significant were found to be existed. It was further same that there was no significant differences between control group and yogic practices group, control group and aerobic exercises group and yogic practices group and combined (yogic practices and aerobic exercises) group.

The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Figure -38.

FIGURE -38

BAR DIAGRAM ON ORDERED ADJUSTED MEANS OF ANXIETY



4.4.7.1 DISCUSSION ON FINDINGS OF ANXIETY

The results presented in table XXII showed the obtained adjusted means on anxiety among yogic practices group was 34.88, aerobic exercises group was 37.61 and combined (yogic practices and aerobic exercises) group was 33.72 and followed by control group with a mean value of 36.66.The differences among pre test scores, post test scores and adjusted mean scores of the subjects were statistically treated using ANCOVA and the obtained F values were 2.56, 3.24 and 9.68. It was found that obtained F value on pre test scores were not significant and the obtained F values on post test and adjusted means were significant at 0.05 level of confidence, as these were greater than the required F value of 2.78.

The post hoc analysis of obtained ordered adjusted means proved, that there was a significant difference between control group and combined (yogic practices and aerobic exercises) group. Yogic practices group and aerobic exercises group and aerobic exercises group and combined (yogic practices and aerobic exercises) group. It was found that there was no significant difference between control group and yogic practices group, control group and aerobic exercises group and yogic practices group and combined (yogic practices and aerobic exercises) group.

Further the post hoc analysis showed that there was significant differences among the experimental groups in comparison to the control group, which clearly indicating that combined training i.e., yogic practices and aerobic exercises group was significantly found to have produced better performance followed by yogic practices group in reducing the level of anxiety of women basketball players. The findings of the study are in favour of the study undertaken by **Mehrotra et.al, (2011), Reddy (2013), Ranjita Mehrotra (2012) and Mehrotra et.al, (2011).**

4.4.8 RESULTS ON AGGRESSION

The Psychological variable, aggression was measured through **Buss & Perry** Questionnaire. The results on the effect of yogic practices, aerobic exercises, combined (yogic practices and aerobic exercises) groups and control group were presented in Table-XXIV.

TABLE - XXIV

COMPUTATION OF ANALYSIS OF COVARIANCE ON AGGRESSION

(Scores in Scores)

Test	Yogic practices group	Aerobic exercises group	Combined (yogic practices and aerobic exercises) group	Control group	Source of Variance	Sum of Squares	df	Mean squares	F Ratio
Pretest Mean	87.20	89.40	89.07	86.33	between	97.73	3	32.58	1.96
STD	9.79	8.01	6.81	6.98	within	3570.27	56	63.75	
Post test Mean	84.07	86.80	85.47	85.53	between	56.13	3	18.71	2.89*
STD	9.04	6.56	6.90	6.63	within	3026.80	56	54.05	
Adjusted Mean	84.76	85.59	84.54	86.98	between	54.19	3	18.06	2.80*
					within	354.42	55	6.44	
Mean gain	3.13	2.60	3.60	0.80					

Table F-ratio at 0.05 level of confidence for 3 and 55 (df), 3 and 56(df) was 2.78.
* Significant.

Table XXIV showed the pre test mean scorers of aggression of yogic practices group was 87.20, aerobic exercise group was 89.40, combined (yogic practices and aerobic exercises) group was 89.07 and control group was 86.33.The post test means showed differences due to experimental trainings and mean values recorded were 84.07, 86.80, 85.47 and 85.53 respectively.

As shown in table XXIV the obtained F value on the scores of the pre test means 1.96 was less than the required value 2.78, which proved that the random assignment of the subjects were successful and their scores in aggression before the training were equal and there was no significant differences.

The post test scores analysis proved that there was a significant difference between the groups, as the obtained F value 2.89 was greater than the required F value of 2.78. This proved that the differences between the post test means of the subjects were significant.

Taking into consideration the pre and post test scores among the group's adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value of 2.80 was greater than the required F value of 2.78. This showed that there were significant differences among the adjusted means on the women basketball players.

Since significant improvements were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in table –XXV.

TABLE –XXV

SCHEFFE'S CONFIDENCE INTERVAL TEST SCORES ON AGGRESSION

(Scores in Scores)

Control group	Yogic practices group	Aerobic exercises Group	Combined (yogic practices and aerobic exercises) group	Mean Difference	CD at 5% Level
86.98	84.76			2.22*	1.68
86.98		85.59		1.39	
86.98			84.54	2.43*	
	84.76	85.59		0.83	
	84.76		84.54	0.22	
		85.59	84.54	1.05	

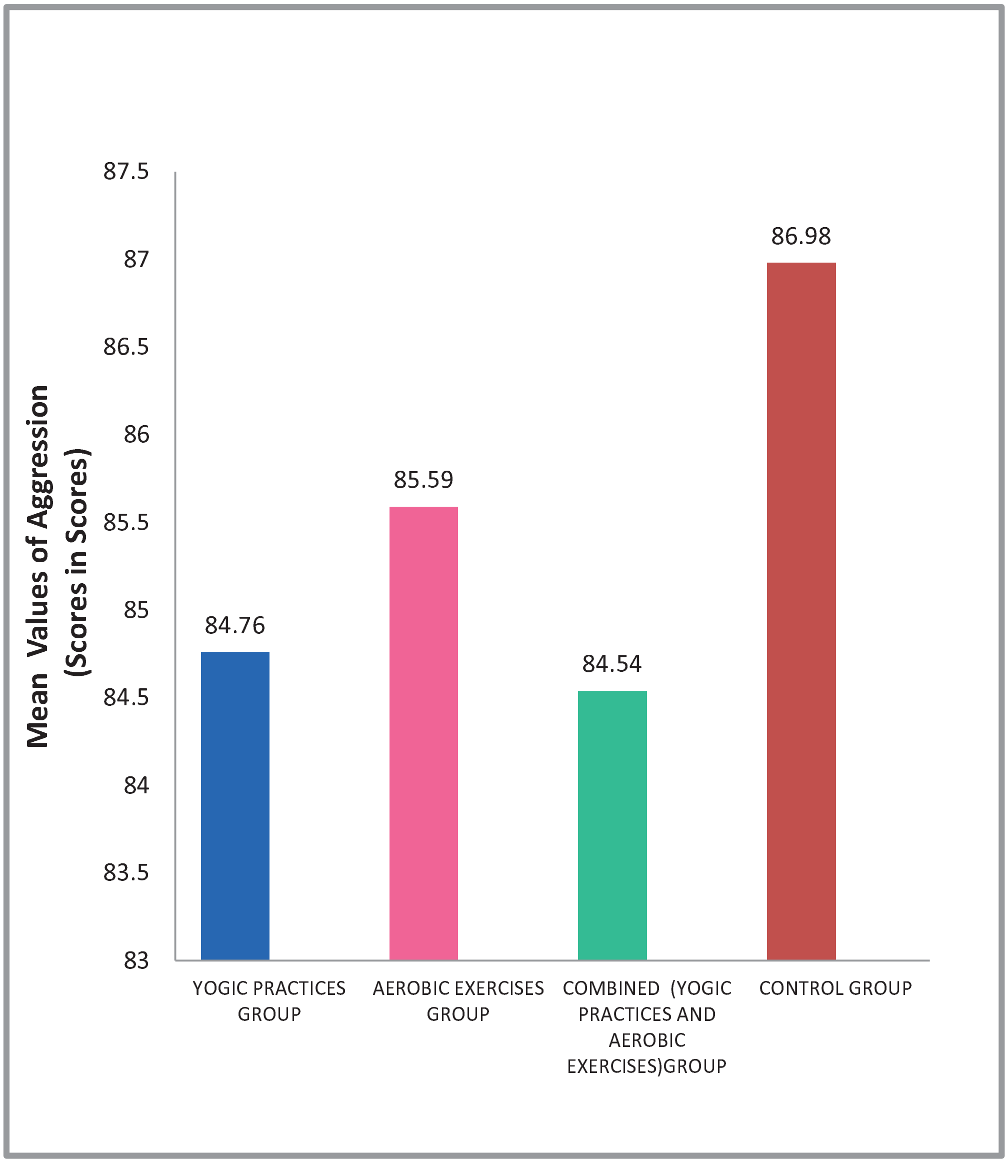
* Significant at 0.05 level.

The post hoc analysis of obtained ordered adjusted means proved that there were significant differences between control group and yogic practices group, control group and combined (yogic practices and aerobic exercises) group. As the confidence interval required to be significant at 0.05 level was 1.68 and the obtained values were greater than the required value, it was observed that the significant differences were found to be existed. It was further seen that there was no significant differences found between control group and aerobic exercises group, yogic practices group and aerobic exercises group, yogic practices group and combined (yogic practices and aerobic exercises) group and aerobic exercises group and combined (yogic practices and aerobic exercises) group .

The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Figure -39.

FIGURE -39

BAR DIAGRAM ON ORDERED ADJUSTED MEANS OF AGGRESSION



4.4.8.1 DISCUSSION ON THE FINDINGS OF AGGRESSION

The results presented in table XXIV showed that the obtained adjusted means on aggression among yogic practices group was 84.76, aerobic exercises group was 85.59 and combined (yogic practices and aerobic exercises) group was 84.54 and followed by control group with a mean value of 86.98.The differences among pre test scores, post test scores and adjusted mean scores of the subjects were statistically treated using ANCOVA and the obtained F values were 1.96, 2.89 and 2.80. It was found that obtained F value on pre test scores were not significant and the obtained F values on post test and adjusted means were significant at 0.05 level of confidence, as these were greater than the required F value of 2.78.

The post hoc analysis of obtained ordered adjusted means proved that there were significant differences between control group and yogic practices group, control group and combined (yogic practices and aerobic exercises) group. It was found that there was no significant difference between control group and aerobic exercises group, yogic practices group and aerobic exercises group, yogic practices group and combined (yogic practices and aerobic exercises) group, aerobic exercises group and combined (yogic practices and aerobic exercises) group.

Further the post hoc analysis showed that there was significant differences among the experimental groups in comparison to the control group which clearly indicating that combined i.e., yogic practices and aerobic exercises was considered significantly favouring better performance followed by yogic practices then aerobic exercises in decreasing the level of aggression on women basketball players. The findings of the study are in favour of the study undertaken by **Deshpande (2012),** Deshpande **(2012)** and **Perry et al., (2003)**.

4.4.9 RESULTS ON DRIBBLING

The skill performance variable, dribbling was measured through Dribble test. The results on the effect of yogic practices, aerobic exercises, combined (yogic practices and aerobic exercises) groups and control group were presented in Table XXVI.

TABLE -XXVI

COMPUTATION OF ANALYSIS OF COVARIANCE OF DRIBBLING

(Scores in Seconds)

Test	Yogic practices group	Aerobic exercises group	Combined (yogic practices and aerobic exercises) group	Control group	Source of Variance	Sum of Squares	df	Mean squares	F Ratio
Pre test Mean	17.86	17.60	17.60	17.73	between	0.73	3	0.24	0.07
STD	1.84	2.02	1.72	1.66	within	185.90	56	3.32	
Post test Mean	23.33	20.86	23.73	18.40	between	324.18	3	108.06	34.78*
STD	1.95	1.72	1.79	1.68	within	174	56	3.11	
Adjusted Mean	14.21	17.48	20.28	17.12	between	344.40	3	114.8	112.23*
					within	56.28	55	1.02	
Mean gain	5.47	3.27	6.13	0.67					

Table F-ratio at 0.05 level of confidence for 3 and 55(df), 3 and 56(df) was 2.78.
* Significant.

Table XXVI showed the pre test mean scores of skill performance of dribbling of yogic practices group was17.86, aerobic exercises group was17.60,combined (yogic practices and aerobic exercises)group was 17.60 and control group17.73.The post test means showed differences due to experimental training and mean values recorded were 23.33, 20.86,23.73and 18.40respectively.

As shown in table XXVI the obtained F value on the scores of pre test means 0.07was less than the required value 2.78, which proved that the random assignment of the subjects were successful and their scores in dribbling before the training were equal and there was no significant differences.

The post test scores analysis proved that there was a significant difference between the groups, as the obtained F value 34.78 was greater than the required F value of 2.78. This proved that the differences between the post test means of the subjects were significant.

Taking into consideration the pre and post test scores among the group's adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value of 112.23 was greater than the required F value of 2.78. This showed that there were significant differences among the adjusted means on the women basketball players.

Since the significant improvements were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in table –XXVII.

TABLE XXVII

SCHEFFE'S CONFIDENCE INTERVAL TEST SCORES ON DRIBBLING

(Scores in Seconds)

Control group	Yogic practices group	Aerobic exercises Group	Combined (yogic practices and aerobic exercises) group	Mean Difference	CD at 5% Level
17.12	14.21			2.91*	0.94
17.12		17.48		0.36	
17.12			20.28	3.16*	
	14.21	17.48		3.59*	
	14.21		20.28	6.07*	
		17.48	20.28	2.80*	

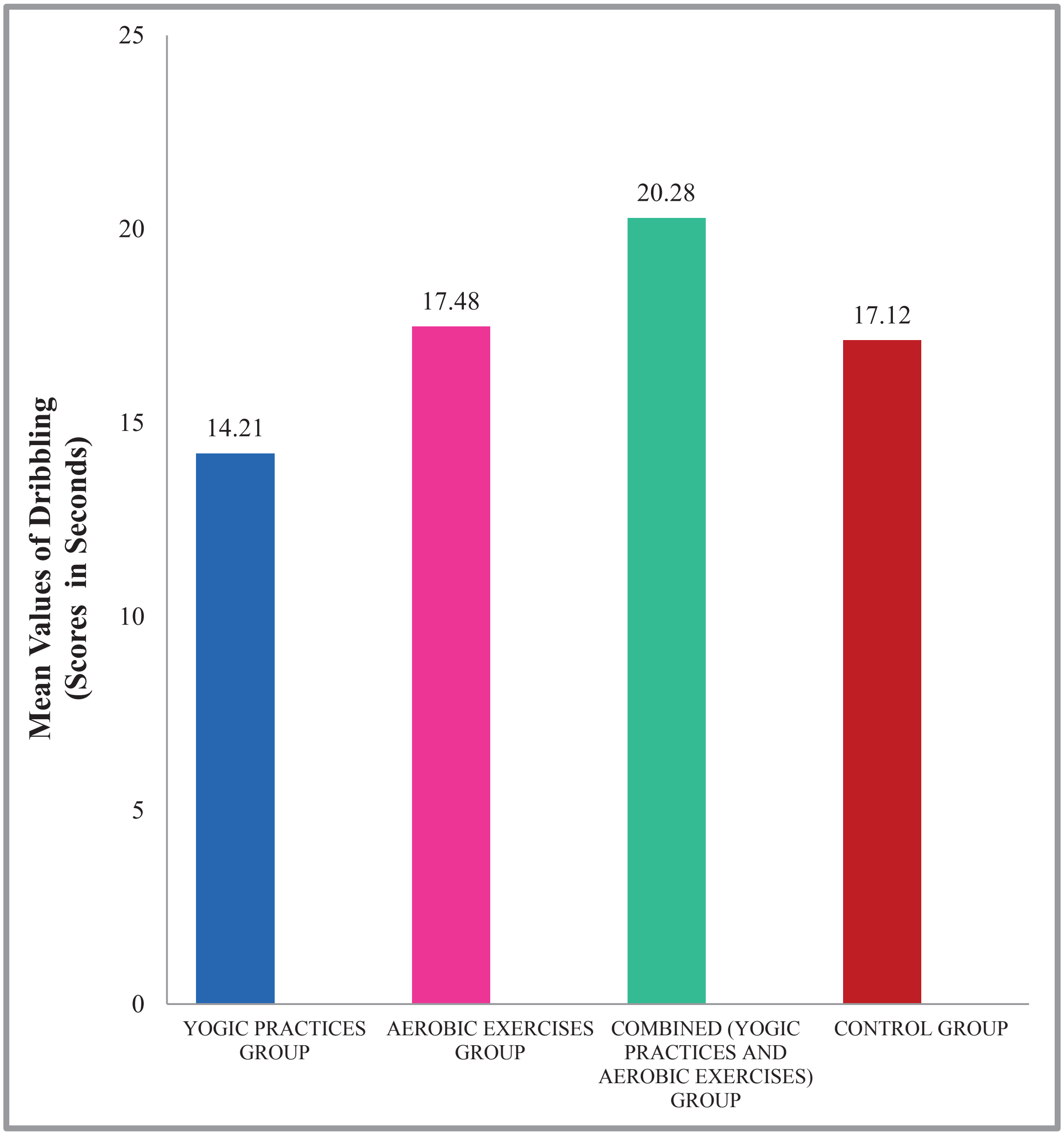
* Significant at 0.05 level.

The post hoc analysis of obtained ordered adjusted means proved that there were significant differences between control group and yogic practices group, control group and combined (yogic practices and aerobic exercises) group, yogic practices group and aerobic exercises group, yogic practices group and combined (yogic practices and aerobic exercises) group, aerobic exercises group and combined (yogic practices and aerobic exercises) group. As the confidence interval required to be significant at 0.05 level was 0.94 and the obtained values were greater than the required value, it was observed that the significant differences were found to be existed. It was further seen that there was no significant difference between control group and aerobic exercises group.

The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Figure -40.

FIGURE – 40

BAR DIAGRAM ON ADJUSTED MEANS OF DRIBBLING



4.4.9.1 DISCUSSION ON FINDINGS OF DRIBBLING

The results presented in table XXVI showed the obtained adjusted means on dribbling among yogic practices group was14.21, aerobic exercises group was 17.48 and combined **(**yogic practices and aerobic exercises**)** group was 20.28 and followed by control group with a mean value of 17.12.The differences among pre test scores, post test scores and adjusted mean scores of the subjects were statistically treated using ANCOVA and the obtained F values were 0.07, 34.78 and 112.23. It was found that obtained F value on pre test scores were not significant and the obtained F values on post test and adjusted means were significant at 0.05 level of confidence, as these were greater than the required F value of 2.78.

The post hoc analysis of obtained ordered adjusted means proved that there were significant differences between control group and yogic practices group, control group and combined **(**yogic practices and aerobic exercises**)** group, yogic practices group and aerobic exercises group, yogic practices group and combined (yogic practices and aerobic exercises) group, aerobic exercises group and combined **(**yogic practices and aerobic exercises**)** group. It was further found that there was no significant difference existed between control group and aerobic exercises group.

Further the post hoc analyses showed that there was significant difference among the experimental groups in comparison to the control group, which clearly indicating that combined (yogic practices and aerobic exercises) group and aerobic exercises group had significantly produced better performance followed by aerobic exercises than yogic practices in enhancing the dribbling performance of women basketball players. The findings of the study are in favour of the study undertaken by **Ahmed and El- Aal (2012) Karkare** and **Awasare (2012)** and **Sisodiya and Abhinav (2012).**

4.4.10 RESULTS ON PASSING

The skill performance variable, passing was measured through accuracy test. The results on the effect of yogic practices, aerobic exercises, combined (yogic practices and aerobic exercises) groups were presented in Table –XXVIII.

TABLE - XXVIII

COMPUTATION OF ANALYSIS OF COVARIANCE ON PASSING
(Scores in Numbers)

Test	Yogic practices group	Aerobic exercises group	Combined (yogic practices and aerobic exercises) group	Control group	Source of Variance	Sum of Squares	df	Mean squares	F Ratio
Pre test Mean	23.21	22.81	22.72	22.91	between	2.06	3	0.69	2.29
STD	0.94	0.26	0.20	0.45	within	16.77	56	0.30	
Post test Mean	29.92	30.56	31.40	23.89	between	527.13	3	175.71	178.47*
STD	1.35	0.37	0.23	1.38	within	55.13	56	0.98	
Adjusted Mean	29.94	30.55	31.39	23.89	between	525.23	3	175.08	174.80*
					within	55.09	55	1.00	
Mean gain	6.71	7.74	8.68	0.98					

Table F-ratio at 0.05 level of confidence for 3 and 55 (df), 3 and 56(df) was 2.78.
* Significant.

Table XXVIII showed the pre test mean scores of skill performance of dribbling of yogic practices group was 23.21, aerobic exercise group was 22.81, combined (yogic practices and aerobic exercises) groups was 22.72 and control group was 22.91.The post test means showed differences due to experimental training and mean values recorded were 29.92, 30.56, 31.40 and 23.89 respectively.

As shown in table XXVIII the obtained F value on the scores of pre test means 2.29 was less than the required value 2.78, which proved that the random assignment of the subjects were successful and their scores in passing before the training were equal and there was no significant differences.

The post test scores analysis proved that there was significant difference between the groups, as the obtained F value 178.47was greater than the required F value of 2.78. This proved that the differences between the post test means of the subjects were significant.

Taking into consideration the pre and post test scores among the group's adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value of 174.80 was greater than the required F value of 2.78. This showed that there were significant differences among the adjusted means on the women basketball players.

Since the significant improvements were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in table –XXIX.

TABLE- XXIX

SCHEFFE'S CONFIDENCE INTERVAL TEST SCORES ON PASSING

(Scores in Numbers)

Control group	Yogic practices group	Aerobic exercises Group	Combined (yogic practices and aerobic exercises) group	Mean Difference	CD at 5% Level
23.89	29.94			6.05*	1.06
23.89		30.55		6.66*	
23.89			31.39	7.50*	
	29.94	30.55		0.61	
	29.94		31.39	1.45*	
		30.55	31.39	0.84	

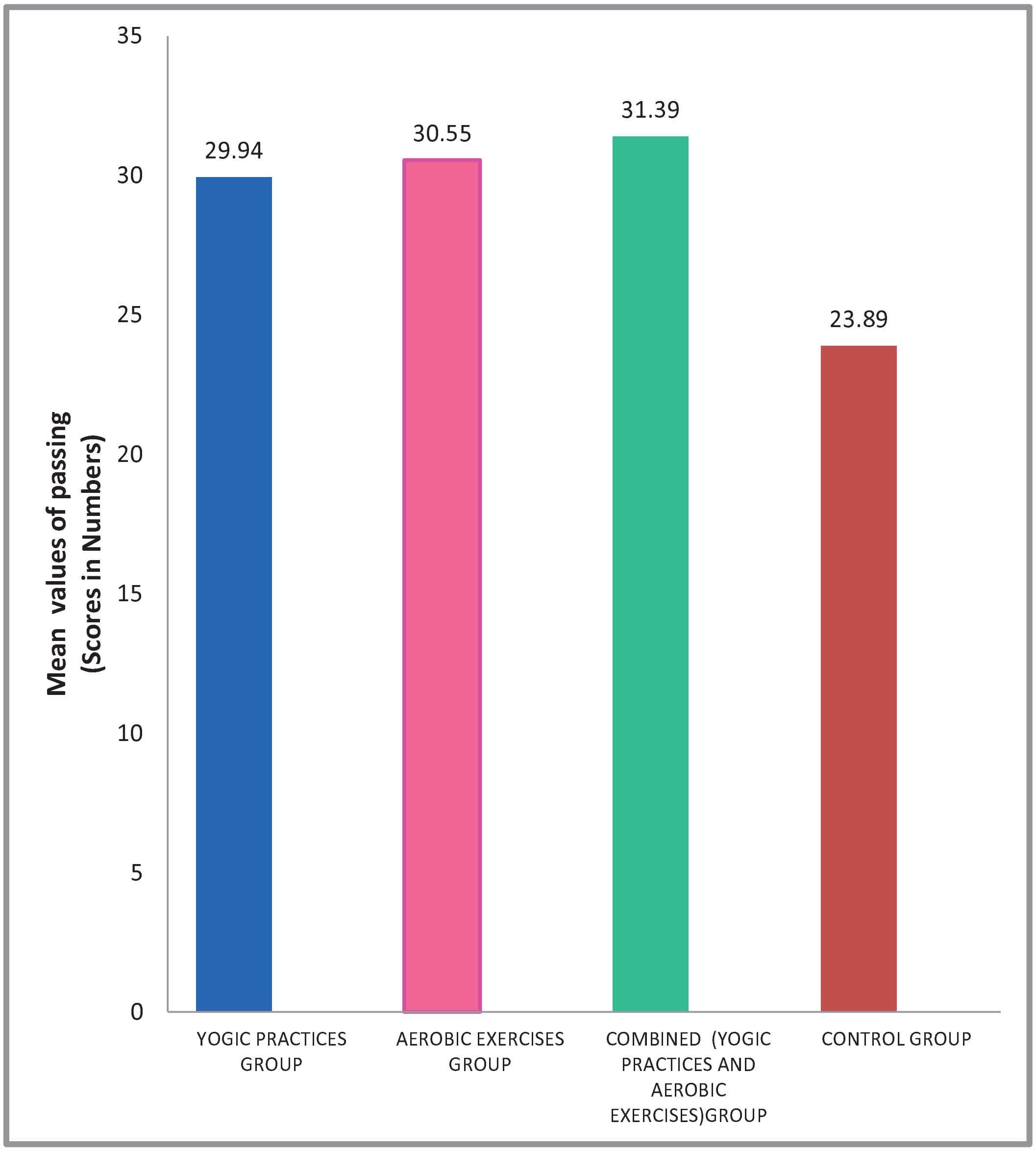
* Significant at 0.05 level.

The post hoc analysis of obtained level ordered adjusted means proved that there were significant differences between control group and yogic practices group, control group and aerobic exercises group, control group and combined (yogic practices and aerobic exercises) group, yogic practices group and combined (yogic practices and aerobic exercises) group. As the confidence interval required to be significant at 0.05 level was 1.06 and the obtained values were greater than the required value, it was observed that the significant differences were found to be existed. It was further found that there was no significant differences existed between yogic practices group and aerobic exercises group, aerobic exercises group and combined (yogic practices and aerobic exercises) group.

The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Figure -41.

FIGURE – 41

BARDIAGRAM ON ORDERED ADJUSTED MEANS OF PASSING



4.4.10.1 DISCUSSION ON THE FINDINGS OF PASSING

The results presented in table XXVIII showed the obtained adjusted means on passing among yogic practices group was 29.94, aerobic exercises group was 30.55 and combined (yogic practices and aerobic exercises) group was 31.39 and followed by control group with a mean value of 23.89.The differences among pre test scores, post test scores and adjusted mean scores of the subjects were statistically treated using ANCOVA and the obtained F values were 2.29, 178.47 and 174.80. It was found that obtained F value on pre test scores were not significant and the obtained F values on post test and adjusted means were significant at 0.05 level of confidence, as these were greater than the required F value of 2.78.

The post hoc analysis of obtained ordered adjusted means proved that there were significant differences between control group and yogic practices group, control group and aerobic exercises group, control group and combined (yogic practices and aerobic exercises) group, yogic practices group and combined (yogic practices and aerobic exercises) group and the differences were significant at 0.05 level. It was found that there was no significant difference existed between yogic practices group and aerobic exercises group and aerobic exercises group and combined (yogic practices and aerobic exercises) group.

Further the post hoc analysis showed that there was significant difference among the experimental groups in comparison to the control group, which clearly indicating that combined yogic practices and aerobic exercises group had significantly produced better performance followed by aerobic exercises group and then yogic practices group in enhancing passing performance of women basketball players. The findings of the study are in favour of the study undertaken by **Singh and Bilaspur (2012), Ahmed and El- Aal (2012) and Raja Singh Rogland (2006).**

4.4.11 RESULTS ON SHOOTING

The skill performance variable, shooting was measured through lay-up shot test. The results on the effect of yogic practices, aerobic exercises, combined (yogic practices and aerobic exercises) groups and control group were presented in Table -XXX.

TABLE - XXX

COMPUTATION OF ANALYSIS OF COVARIANCE ON SHOOTING

(Scores in Numbers)

Test	Yogic practices group	Aerobic exercises group	Combined (yogic practices and aerobic exercises) group	Control group	Source of Variance	Sum of Squares	df	Mean squares	F Ratio
Pre test Mean	19.47	19.47	19.60	19.87	between	1.60	3	0.53	0.10
STD	1.92	2.44	2.74	1.76	within	284.80	56	5.09	
Post test Mean	24.27	26.00	26.67	20.26	between	371.40	3	123.80	22.60*
STD	2.60	2.61	2.22	1.83	within	307.20	56	5.49	
Adjusted Mean	20.49	22.22	22.78	20.13	between	401.32	3	133.77	55.30*
					within	133.11	55	2.42	
Mean gain	4.80	6.53	7.07	0.40					

Table F-ratio at 0.05 level of confidence for 3 and 55 (df), 3 and 56(df) was 2.78.
* Significant.

Table XXX showed the pre test mean scores of shooting of yogic practices group was 19.47, aerobic exercise group was 19.47, combined (yogic practices and aerobic exercises) group was 19.60 and control group was19.87.The post test means showed differences due to experimental trainings and mean values recorded were 24.27, 26.00, 26.67and 20.26 respectively.

As shown in table XXX the obtained F value on the scores of the pre test means 0.10 was less than the required value 2.78, which proved that the random assignment of the subjects were successful and their scores in shooting before the training were equal and there was no significant differences.

The post test scores analysis proved that there was a significant difference between the groups, as the obtained F value 22.60 was greater than the required F value of 2.78. This proved that the differences between the post test means of the subjects were significant.

Taking into consideration the pre and post test scores among the group's adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value of 55.30 was greater than the required F value of 2.78. This showed that there were significant differences among the adjusted means on the women basketball players.

Since the significant improvements were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in table –XXXI.

TABLE- XXXI

SCHEFFE'S CONFIDENCE INTERVAL TEST SCORES ON SHOOTING

(Scores in Numbers)

Control group	Yogic practices group	Aerobic exercises Group	Combined (yogic practices and aerobic exercises) group	Mean Difference	CD at 5% Level
20.13	20.49			0.36	1.44
20.13		22.22		2.09*	
20.13			22.78	2.68*	
	20.49	22.22		1.73*	
	20.49		22.78	2.29*	
		22.22	22.78	0.56	

*indicates significance at 0.05level.

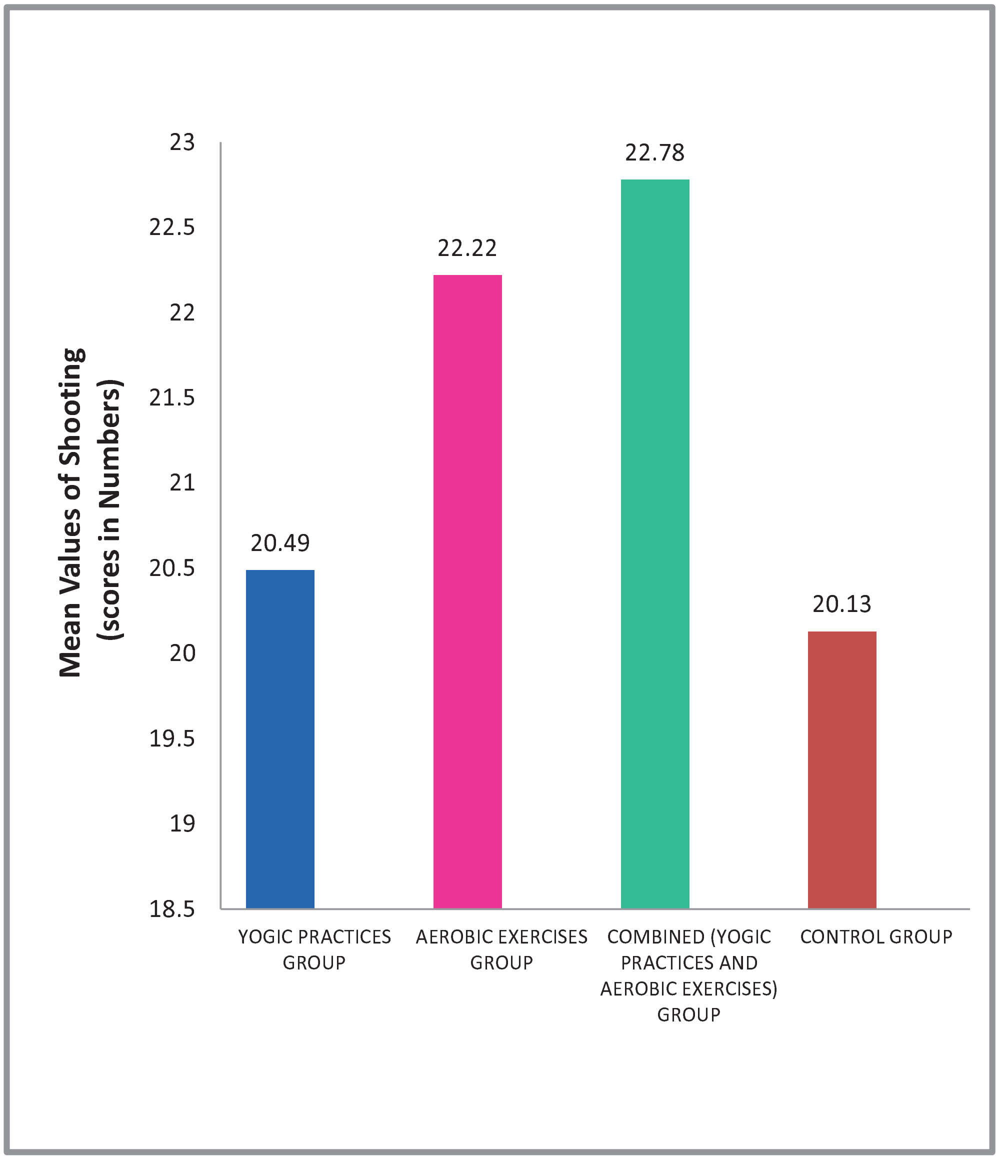
The post hoc analysis of obtained ordered adjusted means proved that there were significant differences between control group and aerobic exercises group, control group and combined (yogic practices and aerobic exercises) group, yogic practices group and aerobic exercises group, yogic practices group and combined (yogic practices and aerobic exercises) group. As the confidence interval required to be significant at 0.05 level was 1.14 and the obtained values were greater than the required value, it was observed that the significant were found to be existed.

It was further found that there was no significant difference between control group and yogic practices group, aerobic exercises group and combined (yogic practices and aerobic exercises) group.

The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Figure -42.

FIGURE – 42

BARDIAGRAM ON ORDERED ADJUSTED MEANS OF SHOOTING



4.4.11.1 DISCUSSION ON THE FINDINGS OF SHOOTING

The results presented in table XXX showed the obtained adjusted means on shooting among yogic practices group was20.49, aerobic exercises group was 22.22 and combined (yogic practices and aerobic exercises) group was 22.78 and followed by control group with a mean value of 20.13.The differences among pre test scores, post test scores and adjusted mean scores of the subjects were statistically treated using ANCOVA and the obtained F values were 0.10, 22.60 and 55.30 respectively. It was found that obtained F value on pre test scores were not significant and the obtained F values on post test and adjusted means were significant at 0.05 level of confidence, as these were greater than the required F value of 2.78.

The post hoc analysis of obtained ordered adjusted means proved that there were significant differences between control group and aerobic exercises group, control group and combined (yogic practices and aerobic exercises) group, yogic practices group and aerobic exercises group, yogic practices group and combined (yogic practices and aerobic exercises) group. The differences were significant at 0.05 level. It was found that here was no significant difference between control group and yogic practices group and aerobic exercises group and combined (yogic practices and aerobic exercises) group.

Further the post hoc analysis showed that there was significant difference among the experimental groups in comparison to the control group, which clearly indicating that combined (yogic practices and aerobic exercises) group was considered significantly better performance followed by aerobic exercises group and than yogic practices group in increasing shooting performance of women basketball players than yogic practices. The findings of the study are in favour of the study undertaken by **Stolk (2012)**, **Parimalam (2011)** and **Dominic (2008)**.

4.5 DISCUSSION ON HYPOTHESES

1. The first hypothesis stated that there would be significant improvement on selected physical fitness variables namely speed, muscular strength, flexibility due to the influence of isolated and combined effects of yogic practices and aerobic exercises among women basketball players. The results presented in Table X, XI, XII, XIII, XIV and XV proved that the influence of isolated and combined effects of yogic practices and aerobic exercises significantly improved the physical fitness variables namely speed, muscular strength and flexibility of women basketball players. Hence the formulated research hypothesis was accepted and the null hypothesis was rejected at 0.05level.

2. The second hypothesis stated that there would be significant improvement on selected physiological variables namely VO_2 max, vital capacity, respiratory rate due to the influence of isolated and combined effects of yogic practices and aerobic exercises among women basketball players. The results presented in Table XVI, XVII, XVIII, XIX, XX and XXI proved that the influence of isolated and combined effects of yogic practices and aerobic exercises significantly improved the physiological variables namely VO_2 max, vital capacity and respiratory rate of women basketball players. Hence the formulated research hypothesis was accepted and the null hypothesis was rejected at 0.05 level.

3. The third hypothesis stated that there would be significant improvement on the selected psychological variables namely anxiety and aggression due to the influence of isolated and combined effects of yogic practices and aerobic exercises among women basketball players. The results presented in Table XXII, XXIII, XXIV and XXV proved that the influence of isolated and combined effect of yogic practices and aerobic exercises significantly improved, The psychological variables namely anxiety and aggression of women

basketball players. Hence the formulated research hypothesis was accepted and the null hypothesis was rejected at 0.05 level.

4. The fourth hypothesis stated that there would be significant improvement on the selected skill performance variables namely passing, dribbling and shooting due to the influence of isolated and combined effects of yogic practices and aerobic exercises among women basketball players. The result presented in Table XXVI, XXVII, XXVIII, XXIX, XXX and XXXI proved that the influence of isolated and combined effects of yogic practices and aerobic exercises significantly improved the skill performance variables namely dribbling, passing and shooting of women basketball players. Hence the formulated research hypothesis was accepted and the null hypothesis was rejected at 0.05 level.

5. The fifth hypothesis stated that there would be significant differences on the selected physical fitness, physiological, psychological and skill performance variables among the experimental groups. The results presented from Table X to XXXI proved that the combined effects of yogic practices and aerobic exercises had a greater significant improvement on selected physical (speed, muscular strength and flexibility), physiological (VO_2 max, vital capacity and respiratory rate), psychological variables (anxiety and aggression) and skill performance (dribbling, passing and shooting) variables than the isolated effect of yogic practices and aerobic exercises on women basketball players. Further on comparison, the isolated effects of yogic practices had better impact on improving flexibility, VO_2 max, vital capacity, respiratory rate, anxiety and aggression. Whereas an aerobic exercise is proved to be of greater influence on speed, muscular strength, dribbling, passing and shooting than yogic practices. Hence the formulated hypothesis was accepted and the null hypothesis was rejected at 0.05 level.