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Effect of Specific Yoga Programme and Aerobic Programme on Selected Physiological Variables of Working Women

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Abstract

The purpose of the study was to find out the effect of specific yoga programme and aerobic programme on selected physiological variables of working women. The For this study, 60 working women of Coimbatore District, Tamil Nadu, India in different colleges were selected as subjects. They were selected from various colleges in Coimbatore city, Tamil Nadu. The age of the subjects ranged from 30 to 40 years. The study was formulated as a true random group design. The subjects (n=60) were randomly assigned to three equal groups of twenty middle aged women each namely, specific yoga programme (SYP, Group I), Aerobic programme (AP, Group II) and control group. The subjects were tested in order to find out physiological variables namely vital capacity, percent body fat and blood pressure. Specific yoga programme group (SYP, Group I), Aerobic programme group (AP, Group II) participated in specific yoga programme, and Aerobic programme for a period of twelve weeks except Saturdays and Sundays of each week. Analysis of Covariance (ANCOVA) was applied to determine the significance of mean difference between the three groups namely specific yoga programme group, aerobic programme group and control. It was concluded that the effect of specific yoga programme and aerobic programme showed a statistically positive sign over the course of the training period on the selected physiological variables such as vital capacity, percent body fat, systolic blood pressure, diastolic blood pressure of working women.

Keywords: Yoga, Aerobic, Blood Pressure, Vital Capacity, Women.

Introduction

Yoga is a light, which once lit, will never dim, the better your practice, the brighter the flame'. The younger, the old, the extremely aged, even the sick and the infirm obtain perfection in yoga by constant practice. In short, yoga is a way to achieve total health, peace, bliss and wisdom. Physical, mental and spiritual aspects of yoga help to make one's life purposeful, useful and noble. Yoga is an art, science and philosophy, which influence the life of man at every level. Therefore, the influence of yoga must be felt in every movement of our day to day lives. Yoga is a scientific method of life and also integrated educational system of our body, mind and soul. This was practiced by the Indian thousands years of ago but it is one of the universal truths and rectified lot of problems today as there were in the ancient times.

Aerobic exercise is physical exercise of relatively low intensity that depends primarily on the aerobic energy generating process. Aerobic literally means requiring free oxygen and refers to the use of oxygen to adequately meet energy demands during exercise via aerobic metabolism. Generally, light to moderate intensity activities that are sufficiently supported by aerobic metabolism can be performed for extended periods of time. The intensity should be between 60 and 85% of maximum heart rate. Aerobic exercise is a moderate intensity workout that extends over a certain period of time and uses oxygen in this process. Aerobics has become the most happening workout trend among the youth. There are different types of aerobics like fitness walking, jogging, swimming, kickboxing, inline skating, bicycling etcetera. It helps to strengthen lower back and works a great deal in enhancing cardiovascular development (Stoll & Jennifer, 1989).

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Methodology

The purpose of the study was to find out the effect of specific yoga programme and aerobic programme on selected physiological variables of working women. For this study, 60 working women of Coimbatore District,Tamil Nadu, India in different colleges were selected as subjects. They were selected from various colleges in Coimbatore city, Tamil Nadu. The age of the subjects ranged from 30 to 40 years. The study was formulated as a true random group design. The subjects (n=60) were randomly assigned to three equal groups of twenty middle aged women each namely, specific yoga programme (SYP, Group I), Aerobic

programme (AP, Group II) and control group. The subjects were tested in order to find out physiological variables namely vital capacity, percent body fat and blood pressure. Wet Spiro meter was used to find out the vital capacity, Skinfold caliper was used to find out the percent body fat and Digital blood pressure monitor was used to find out the blood pressure. Specific yoga programme group (SYP, Group I), Aerobic programme group (AP, Group II) participated in specific yoga programme, and Aerobic programme for a period of twelve weeks except Saturdays and Sundays of each week. Analysis of Covariance (ANCOVA) was applied to determine the significance of mean difference between the three groups namely specific yoga programme group, aerobic programme group and control.

Tools and Techniques

Wet Spiro meter was used to find out the vital capacity, Skinfold caliper was used to find out the percent body fat and digital blood pressure monitor was used to find out the blood pressure.

Table I. Specific yoga training programme schedule

Week	Training components	No. of exercises	Duration of training components in minutes	No. of Repetition	Density between training components in minutes	Total duration in minutes
First week	Asanas	4	20	2	3	60
	Pranayama	4	20	1	2	
	Meditation	1	15	1		
Second week	Asanas	4	20	2	3	60
	Pranayama	4	20	1	2	
	Meditation	1	15	1		
Third week	Asanas	6	20	2	3	60
	Pranayama	5	20	1	2	
	Meditation	1	15	1		
Fourth week	Asanas	6	20	2	3	60
	Pranayama	5	20	1	2	
	Meditation	1	15	1		
Fifth week	Asanas	8	25	2	3	60
	Pranayama	6	15	1	2	
	Meditation	1	15	1		
Sixth week	Asanas	8	25	2	3	60
	Pranayama	6	15	1	2	
	Meditation	1	15	1		
Seventh week	Asanas	10	25	1	3	60
	Pranayama	6	15	1	2	
	Meditation	1	15	1		
Eighth week	Asanas	10	25	1	3	60
	Pranayama	6	15	1	2	
	Meditation	1	15	1		
Ninth week	Asanas	12	30	1	3	60
	Pranayama	6	15	1	2	
	Meditation	1	10	1		
Tenth week	Asanas	12	30	1	3	60
	Pranayama	6	15	1	2	
	Meditation	1	10	1		
Eleventh week	Asanas	15	35	1	3	60
	Pranayama	7	10	1	2	
	Meditation	1	10	1		
Twelfth week	Asanas	15	35	1	3	60
	Pranayama	7	10	1	2	
	Meditation	1	10	1		

Table II. Aerobic training programme schedule

Week	Trag. components	No. of exe.	Duration of training comp. in minutes	No. of Repe.	No. of Sets	Density between sets in minutes	Density between training comp. in minutes	Trag. Int.	Weekly int.	Total duration in min.
First week	Warm up	8	10	1	1					60
	Walking		20	1	1		3	40%	40%	
	Aerobic dance	4	20	2	2	2		40%		
	Warm down	8	10	1	1					
second week	Warm up	8	10	1	1					60
	Walking		20	1	1		3	40%	40%	
	Aerobic dance	4	20	2	2	2		40%		
	Warm down	8	10	1	1					
Third week	Warm up	8	10	1	1					60
	Walking		25	1	1		3	50%	50%	
	Aerobic dance	5	15	2	2	2		50%		
	Warm down	8	10	1	1					
Fourth week	Warm up	8	10	1	1					60
	Walking		25	1	1		3	50%	50%	
	Aerobic dance	5	15	2	2	2		50%		
	Warm down	8	10	1	1					
Fifth week	Warm up	8	10	1	1					60
	Walking		20	1	1		3	60%	60%	
	Aerobic dance	7	20	2	2	2		60%		
	Warm down	8	10	1	1					
Sixth week	Warm up	8	10	1	1					60
	Walking		20	1	1		3	60%	60%	
	Aerobic dance	7	20	2	2	2		60%		
	Warm down	8	10	1	1					
Seventh week	Warm up	8	10	1	1					60
	Walking		20	1	1		3	65%	65%	
	Aerobic dance	7	20	2	2	2		65%		
	Warm down	8	10	1	1					
Eighth week	Warm up	8	10	1	1					60
	Walking		20	1	1		3	65%	65%	
	Aerobic dance	7	20	2	2	2		65%		
	Warm down	8	10	1	1					
Ninth week	Warm up	8	10	1	1					60
	Walking		20	1	1		3	70%	70%	

	Aerobic dance	**10**	**20**	**2**	**2**	**2**		**70%**		
	Warm down	**8**	**10**	**1**	**1**					
Tenth week	**Warm up**	**8**	**10**	**1**	**1**					**60**
	Walking		**20**	**1**	**1**		**3**	**75%**	**75%**	
	Aerobic dance	**10**	**20**	**2**	**2**	**2**		**75%**		
	Warm down	**8**	**10**	**1**	**1**					
Eleventh week	**Warm up**	**8**	**10**	**1**	**1**					**60**
	Walking		**15**	**1**	**1**		**3**	**80%**	**80%**	
	Aerobic dance	**12**	**25**	**2**	**2**	**2**		**80%**		
	Warm down	**8**	**10**	**1**	**1**					
Twelfth week	**Warm up**	**8**	**10**	**1**	**1**					**60**
	Walking		**10**	**1**	**1**		**3**	**80%**	**80%**	
	Aerobic dance	**15**	**30**	**2**	**2**	**2**		**80%**		
	Warm down	**8**	**10**	**1**	**1**					

Statistical Technique and its Justification

The following statistical techniques were used for the analysis of data in this study. Analysis of Covariance (ANCOVA) was applied to determine the significance of mean difference between the three groups namely specific yoga programme group, aerobic programme group and control. When F-ratio was found to be significant, the Scheffe's post hoc test was applied to test the significance of pairs of the adjusted final group means. In all cases, the criterion for statistical significance was set at 0.05 level of confidence (P<0.05).

Results

Table III. Computation of analysis of covariance of specific yoga programme group aerobic programme group and control group on vital capacity

	SYP Group	**AP Group**	**Control Group**	**Source of Variance**	**Sum of Squares**	**df**	**Mean Squares**	**F-ratio**
Pre-Test Means	2.840	2.860	2.820	**BG**	0.016	2	0.008	0.046
				WG	9.813	57	0.172	
Post-Test Means	3.047	3.230	2.927	**BG**	0.928	2	0.464	6.325*
				WG	4.182	57	0.073	
Adjusted Post-Test Means	3.048	3.220	2.937	**BG**	0.813	2	0.406	12.293*
				WG	1.851	56	0.033	

BG- Between Group Means *Significant
WG- Within Group Means (Table Value for 0.05 Level for df 2 & 57 = 3.158)
df- Degrees of Freedom (Table Value for 0.05 Level for df 2 & 56 = 3.161)

An examination of table – III indicates that the results of ANCOVA for pretest scores of the specific yoga programme group, aerobic programme group and control group. The obtained F-ratio for the pre-test is 0.046 (P>0.05) indicating that the random sampling is successful and the table F-ratio is 3.158. Hence the pre-test mean F-ratio is insignificant at 0.05 level of confidence for the degree of freedom 2 and 57. The obtained F-ratio for the post-test is 6.325 (P<0.05) and the table F-ratio is 3.158. Hence the post-test mean F-ratio is significant at 0.05 level of confidence for the degree of freedom 2 and 57. The adjusted post-test means of specific yoga programme group, aerobic programme group and control group are 3.048, 3.220 and 2.937 respectively. The obtained F-ratio for the adjusted post-test means is 12.293 (P < 0.05) and the table F-ratio is 3.161. Hence the adjusted post-test mean vital capacity F-ratio is significant at 0.05 level of confidence for the degree of freedom 2 and 56. Pre test, post test and adjusted post test mean difference of the specific yoga programme group, aerobic programme group and control group on vital capacity is presented in Figure I.

Figure I. Bar diagram showing the pretest posttest and adjusted posttest mean differences of specific yoga programme group aerobic programme group and control group on vital capacity

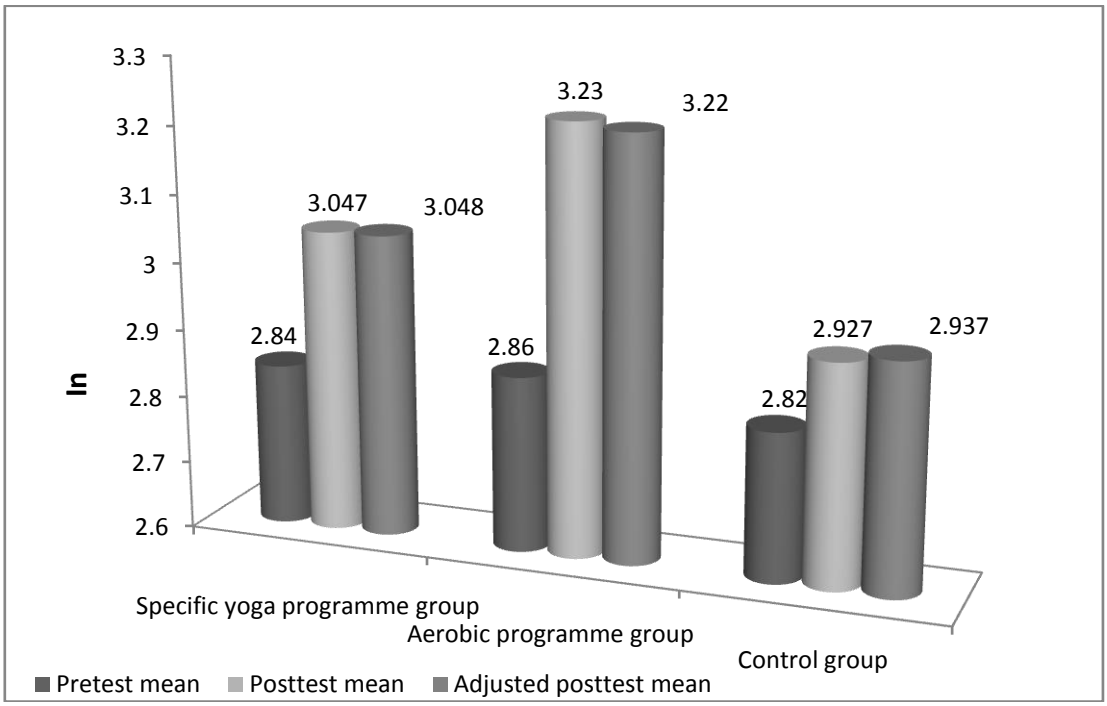

Table IV. The scheffe's test for the differences between the adjusted post test paired means on vital capacity

SYP Group	AP Group	Control Group	Mean Difference	CI value
3.048	3.220	---	0.172*	0.102
---	3.220	2.937	0.283*	
3.048	---	2.937	0.111*	

*Significant

Table - IV shows the ordered adjusted means and difference between the means of the specific yoga programme group, aerobic programme group and control group. The mean values of specific yoga programme group aerobic programme group and control group are 3.048, 3.220 and 2.937 respectively. The mean differences between specific yoga programme group aerobic programme group and control group are 0.172, 0.283 and 0.111 respectively. Hence there is a significant difference seen between specific yoga programme group and aerobic programme group; aerobic programme group and control group; specific yoga programme group and control group. The result of the study indicates that the aerobic programme group has more significant improvement in vital capacity than the specific yoga programme group and control group.

Table V. Computation of analysis of covariance of specific yoga programme group aerobic programme group and control group on percent body fat

	SYP Group	AP Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	F-ratio
Pre-Test Means	26.365	26.690	26.310	**BG**	1.687	2	0.844	0.138
				WG	349.442	57	6.131	
Post-Test Means	24.560	25.535	26.250	**BG**	28.786	2	14.393	3.449*
				WG	237.864	57	4.173	
Adjusted Post-Test Means	24.627	25.361	26.357	**BG**	30.177	2	15.088	18.297*
				WG	46.180	56	0.825	

An examination of table – V indicates that the results of ANCOVA for pretest scores of the specific yoga programme group, aerobic programme group and control group. The obtained F-ratio for the pre-test is 0.138 (P>0.05) indicating that the random sampling is successful and the table F-ratio is 3.158. Hence the pre-test mean F-ratio is insignificant at 0.05 level of confidence for the degree of freedom 2 and 57. The obtained F-ratio for the post-test is 3.449 (P<0.05) and the table F-ratio is 3.158. Hence the post-test mean F-ratio is significant at 0.05 level of confidence for the degree of freedom 2 and 57. The adjusted post-test means of specific yoga programme group, aerobic programme group and control group are 24.627, 25.361 and 26.357 respectively. The obtained F-ratio for the adjusted post-test means is 18.297 (P < 0.05) and the table F-ratio is 3.161. Hence the adjusted post-test mean percent body fat F-ratio is significant at 0.05 level of confidence for the degree of freedom 2 and 56. Pre test, post test and adjusted post test mean difference of the specific yoga programme group, aerobic programme group and control group on percent body fat is presented in Figure II.

Figure II. Bar diagram showing the pretest posttest and adjusted posttest mean differences of specific yoga programme group aerobic programme group and control group on percent body fat

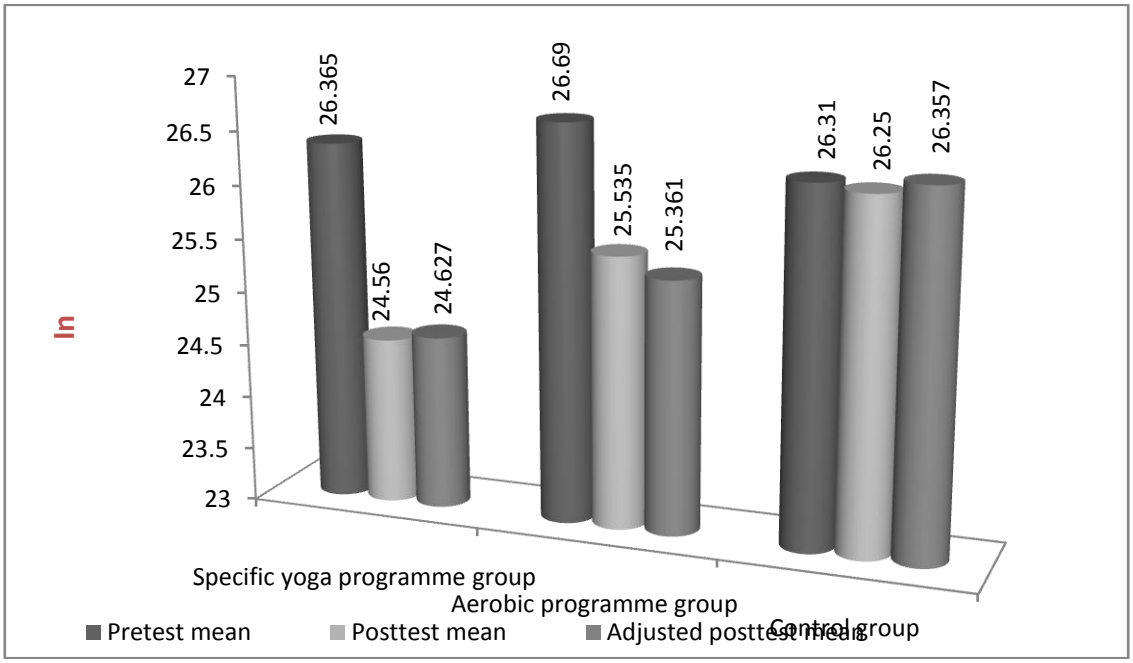

Table VI. The scheffe's test for the differences between the adjusted post test paired means on percent body fat

SYP Group	AP Group	Control Group	Mean Difference	CI value
24.627	25.361	---	0.734*	0.510
---	25.361	26.357	0.996*	
24.627	---	26.357	1.730*	

*Significant

Table - VI shows the ordered adjusted means and difference between the means of the specific yoga programme group, aerobic programme group and control group. The mean values of specific yoga programme group aerobic programme group and control group are 24.627, 25.361 and 26.357 respectively. The mean differences between specific yoga programme group aerobic programme group and control group are 0.734, 0.996 and 1.730 respectively. Hence there is a significant difference seen between specific yoga programme group and aerobic programme group; aerobic programme group and control group; specific yoga programme group and control group. The result of the study indicates that the specific yoga programme group has more significant reduction in percent body fat than the aerobic programme group and control group.

Table VII. Computation of analysis of covariance of specific yoga programme group aerobic programme group and control group on systolic blood pressure

	SYP Group	AP Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	F-ratio
Pre-Test Means	140.70	140.90	140.90	**BG**	0.533	2	0.26	0.001
				WG	30067.80	57	527.50	
Post-Test Means	125.60	121.60	141.15	**BG**	4266.70	2	2133.35	9.93*
				WG	12242.15	57	214.77	
Adjusted Post-Test Means	125.70	121.60	141.10	**BG**	4250.76	2	2125.38	29.39*
				WG	4049.46	56	72.31	

An examination of table – VII indicates that the results of ANCOVA for pretest scores of the specific yoga programme group, aerobic programme group and control group. The obtained F-ratio for the pre-test is 0.001 (P>0.05) indicating that the random sampling is successful and the table F-ratio is 3.158. Hence the pre-test mean F-ratio is insignificant at 0.05 level of confidence for the degree of freedom 2 and 57. The obtained F-ratio for the post-test is 9.93 (P<0.05) and the table F-ratio is 3.158. Hence the post-test mean F-ratio is significant at 0.05 level of confidence for the degree of freedom 2 and 57. The adjusted post-test means of specific yoga programme group, aerobic programme group and control group are 125.70, 121.60 and 141.10 respectively. The obtained F-ratio for the adjusted post-test means is 29.39 (P < 0.05) and the table F-ratio is 3.161. Hence the adjusted post-test mean systolic blood pressure F-ratio is significant at 0.05 level of confidence for the degree of freedom 2 and 56. Pre test, post test and adjusted post test mean difference of the specific yoga programme group, aerobic programme group and control group on systolic blood pressure is presented in Figure III.

Figure III. Bar diagram showing the pretest posttest and adjusted posttest mean differences of specific yoga programme group aerobic programme group and control group on systolic blood pressure

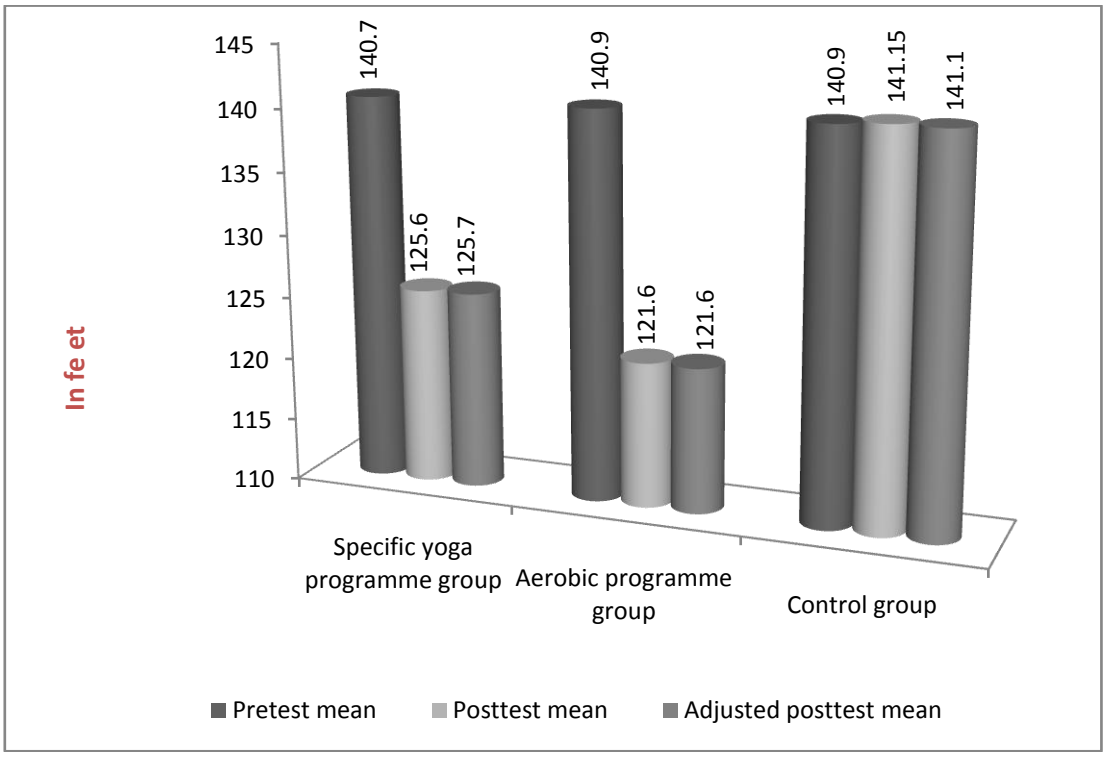

Table VIII. The scheffe's test for the differences between the adjusted post test paired means on systolic blood pressure

SYP Group	AP Group	Control Group	Mean Difference	CI value
125.70	121.60		4.10*	4.780
	121.60	141.10	19.50*	
125.70		141.10	15.40*	

*Significant

Table -VIII shows the ordered adjusted means and difference between the means of the specific yoga programme group, aerobic programme group and control group. The mean values of specific yoga programme group aerobic programme group and control group are 125.70, 121.60 and 141.10 respectively. The mean differences between specific yoga programme group aerobic programme group and control group are 4.10, 19.50 and 15.40 respectively. Hence there is a significant difference seen between specific yoga programme group and aerobic programme group; aerobic programme group and control group; specific yoga programme group and control group. The result of the study indicates that the aerobic programme group has more significant reduction in systolic blood pressure than the specific yoga programme group and control group.

Table IX. Computation of analysis of covariance of specific yoga programme group aerobic programme group and control group on diastolic blood pressure

	SYP Group	AP Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	F-ratio
Pre-Test Means	85.65	85.05	85.90	**BG**	7.63	2	3.81	0.10
				WG	2135.30	57	37.46	
Post-Test Means	81.65	82.40	86.05	**BG**	221.63	2	110.81	4.19*
				WG	1504.30	57	26.39	
Adjusted Post-Test Means	81.57	82.70	85.82	**BG**	193.14	2	96.57	8.07*
				WG	669.33	56	11.95	

An examination of table – IX indicates that the results of ANCOVA for pretest scores of the specific yoga programme group, aerobic programme group and control group. The obtained F-ratio for the pre-test is 0.10 (P>0.05) indicating that the random sampling is successful and the table F-ratio is 3.158. Hence the pre-test mean F-ratio is insignificant at 0.05 level of confidence for the degree of freedom 2 and 57. The obtained F-ratio for the post-test is 4.19 (P<0.05) and the table F-ratio is 3.158. Hence the post-test mean F-ratio is significant at 0.05 level of confidence for the degree of freedom 2 and 57. The adjusted post-test means of specific yoga programme group, aerobic programme group and control group are 81.57, 82.70 and 85.82 respectively. The obtained F-ratio for the adjusted post-test means is 8.07 (P < 0.05) and the table F-ratio is 3.161. Hence the adjusted post-test mean diastolic blood pressure F-ratio is significant at 0.05 level of confidence for the degree of freedom 2 and 56. Pre test, post test and adjusted post test mean difference of the specific yoga programme group, aerobic programme group and control group on diastolic blood pressure is presented in Figure IV.

Figure IV. Bar diagram showing the pretest posttest and adjusted posttest mean differences of specific yoga programme group aerobic programme group and control group on diastolic blood pressure

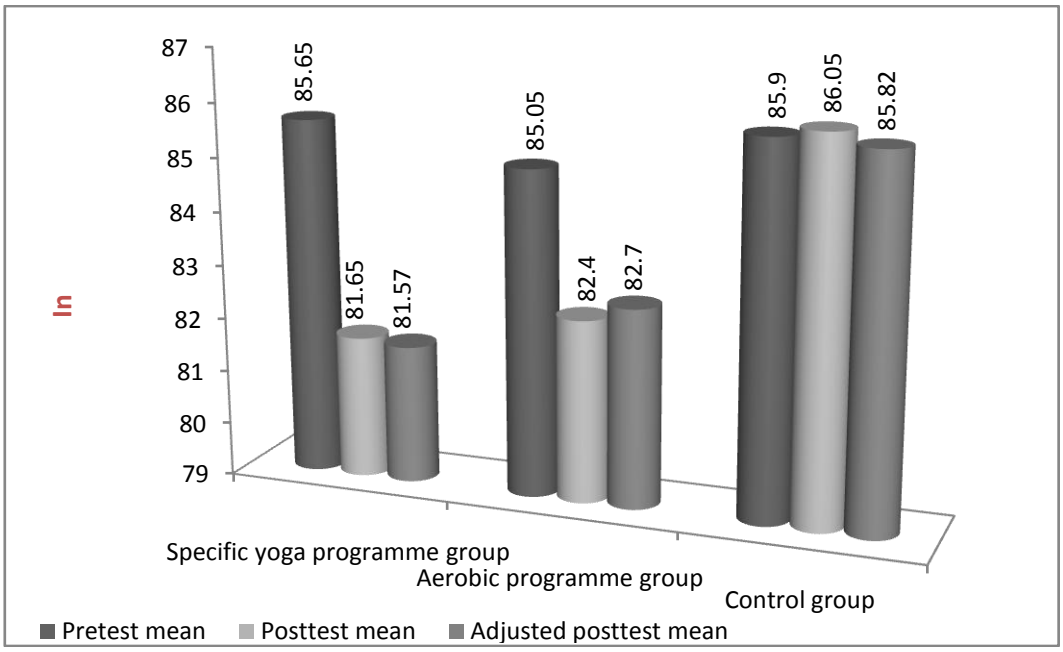

Table X. The scheffe's test for the differences between the adjusted post test paired means on diastolic blood pressure

SYP Group	AP Group	Control Group	Mean Difference	CI value
81.57	82.7	---	1.13	1.943
---	82.7	85.82	3.12*	
81.57	---	85.82	4.25*	

*Significant

Table -X shows the ordered adjusted means and difference between the means of the specific yoga programme group, aerobic programme group and control group. The mean values of specific yoga programme group aerobic programme group and control group are 81.57, 82.70 and 85.82 respectively. The mean differences between specific yoga programme group aerobic programme group and control group are 1.13, 3.12 and 4.25 respectively. Hence there is a significant difference seen between aerobic programme group and control group; specific yoga programme group and control group and also there is no significant difference between specific yoga programme group and aerobic programme group. The result of the study indicates that the specific yoga programme group and aerobic programme group have more significant reduction in diastolic blood pressure than the control group.

Discussion on Findings

Vital capacity

The results of the study indicate that there was significant improvement in vital capacity due to the effect of specific yoga programme, aerobic programme between pre test and post test. However there was no statistically significant change in vital capacity of control group. The results of the analysis reveal that the specific yoga programme group, aerobic programme group and control group had significantly differed in vital capacity. Specific yoga programme group and aerobic programme group produced significant improvement in vital capacity than the control group. The results of the study indicate specific yoga programme group had produced more significant improvement in vital capacity than the aerobic programme group. In the current trend the rational use of yoga practice and aerobic practice are needed to improve the vital capacity. The dependability in formative the significant contribution of specific yoga programme and aerobic programme on vital capacity in this study was similar to the finding of other studies using yoga and aerobic programme.

Shenbagavalli & Divya (2010) reported that specific yogic exercises programme and combination of specific yogic exercises with autogenic training is significantly effective in promoting vital capacity. Sakthignanavel (1998) suggested that the aerobic group had significant improvement in vital capacity.

Percent body fat

The results of the study indicate that specific yoga programme and aerobic programme significantly

reduce body fat. However there was no statistically significant change in percent body fat of control group. The results of the analysis reveal that the specific yoga programme group, aerobic programme group and control group had significantly differed in percent body fat. Specific yoga programme group and aerobic programme group had significant reduction in percent body fat than the control group. The results of the study indicate specific yoga programme group had significant reduction the percent body fat than the aerobic programme group. In the current trend the rational use of yoga practice and aerobic practice are needed to decrease the body fat. The dependability in formative the significant contribution of specific yoga programme and aerobic programme on percent body fat in this study was similar to the finding of other studies using yoga and aerobic programme. Aranga&Kulothungan (2011) recommended that the high intensity aerobic exercises were significantly decrease percentage of body fat. Thakur &Bandopadhyay (2012) suggested that the percentage of body fat, was improved significantly due to yogic treatment.

Shenbagavalli&Divya (2010) reported that specific yogic exercises programme and combination of specific yogic exercises with autogenic training is significantly effective in promoting percent body fat. Goulopoulou, et al. (2010) submitted that the aerobic training had remarkable changes in body weight, body composition, fitness level, and glycemic control. Ravikumar (2009) commended that muscular strength and endurance, muscular flexibility, cardio vascular endurance & body composition significantly improved after yogic group and aerobic exercise group than the control group.

Systolic and diastolic blood pressure

The results of the study indicate that specific yoga programme and aerobic programme significantly reduce systolic and diastolic blood pressure. However there was no statistically significant change in systolic and diastolic blood pressure of control group. The results of the analysis reveal that the specific yoga programme group, aerobic programme group and control group had significantly differed in systolic and diastolic blood pressure. Specific yoga programme group and aerobic programme group had significant reduction in systolic and diastolic blood pressure than the control group. The results of the study indicate that specific yoga programme group had significant reduction the systolic and diastolic blood pressure than the aerobic programme group. In the current trend the rational use of yoga practice and aerobic practice are needed to decrease the systolic and diastolic blood pressure. The dependability in formative the significant contribution of specific yoga programme and aerobic programme on systolic and diastolic blood pressure in this study was similar to the finding of other studies using yoga and aerobic programme. Indla & Pandurang (2011) reported that due to yoga practice systolic blood pressure was lowered to a highly significant level ($P < 0.001$). The diastolic blood pressure was reduced significantly ($P < 0.001$). Shantha (2007) stated that the yogasanas and aerobic training significantly reduce the blood pressure. Uthirapathy (2005) detailed that the yogic practices and aerobic exercises significantly reduce resting heart rate, systolic blood pressure, diastolic blood pressure, blood sugar and serum cholesterol level.

Conclusions

1. It was concluded that the effect of specific yoga programme and aerobic programme showed a statistically positive sign over the course of the training period on the selected physiological variables such as vital capacity, percent body fat, systolic blood pressure, diastolic blood pressure of working women.
2. It was concluded that the effect of specific yoga programme group showed a statistically significant reduction in percent body fat than the aerobic programme group and control group.
3. It was concluded that the effect of aerobic programme group showed a statistically significant improvement in vital capacity than the specific yoga group and control group.
4. It was concluded that the effect of aerobic programme group showed a statistically significant reduction in systolic blood pressure than the specific yoga programme group and control group.
5. It was concluded that the effect of specific yoga programme group and aerobic programme group showed a statistically significant reduction in diastolic blood pressure than the control group.

Recommendation for Further Research

1. It is also recommended that both specific yoga programme and aerobic programme may be included as a routine in a daily life.
2. It is also recommended that both specific yoga programme and aerobic programme will be used for the college level women.
3. It is also recommended that various types of variables such as physical fitness variables and hematological variable may be used for the working women.
4. It is also recommended that the same type of training schedule may be adapted to the college level women.

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