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Effects of Yoga Power Yoga and Pilates on Selected Physical Variables of College Women Students

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ABSTRACT

The present study was designed to determine the effects of yoga power yoga and Pilates on selected physical variables of College women students. To attain the purpose, sixty (N=60) women College students studying in Euphrasia Training College for women, Kattor, Kerala, India during the year 2014-2015 were randomly selected as subjects. The subjects were assigned at random into four groups of fifteen each (n=15). Group-I underwent Yoga Practice, Group-II underwent Power yoga Practice, Group-III underwent Pilates Exercise and Group-IV acted as Control. The dependent variables selected for this study were Flexibility and Muscular Endurance. Flexibility was assessed by Sit and Reach test, Muscular Endurance was assessed by Bent Knee Sit-ups. All the subjects were tested prior to and immediately after the training for all the selected variables. Data were collected and statistically analyzed using ANCOVA. Scheffe's post hoc test was applied to determine the significant difference between the paired means. In all the cases 0.05 level of significance was fixed. The results of the study showed that there was a significant difference was found among all the Experimental groups namely Yoga Practice, Power yoga Practice and Pilates Exercise groups had significantly increase in the Flexibility and Muscular Endurance. Further the results of the study showed Pilates Exercises group was found to be better than the Yoga Practice group and Power yoga Practice group in Flexibility and Muscular Endurance.

KEYWORDS : Yoga Practice, Power yoga Practice and Pilates Exercise, Flexibility, Muscular Endurance

INTRODUCTION

Sport specific training is simply fitness and performance training designed specifically for athletic performance enhancement. Training programs for athletic performance enhancement could include such areas as strength, speed, power, endurance, flexibility, mobility, agility, mental preparedness (including goal setting), sleep, recovery/regeneration techniques and strategies, nutrition, rehabilitation, pre-habilitation, and injury risk reduction***(Dary, 1998).***

Yoga has been practiced in India for over two millennia. Stories and legends from ancient times testify to the existence of yoga, and to the practitioners and divinities associated with it. Indian literature is a storehouse of knowledge about yoga covering every conceivable level. Roughly in chronological order are the vocals (books of Scriptural knowledge), the Upanishada (philosophical cosmologies), and their commentaries; then the Puranas (ancient cosmologies), and the two epics, the Ramayana and the Mahabharatha. The Mahabharatha contains within itself that masterpiece of Indian scripture the Bhagavad Gita. Towards the end of Vedic period comes the aphoristic literature, with the "Yoga Aphorisms" of Patanjali of special interest to yoga students. These are, besides, whole bodies of works both ancient (Pre-Christian) and more modern dealing with various aspects of yoga and yoga philosophy, testifying to the continued relevance of yoga as a discipline ***(Mira-Mehta, 1994).***

Power Yoga is a discipline of regular practice for strengthening the core muscle groups, increasing flexibility and overall range of motion, enhancing your coordination and getting rid of stress. Reducing stress alone, has been proven to greatly reduce weight gain, so in combination with one of the best calorie-burning workouts, Power Yoga stands above all other workouts for weight loss.

Pilates is a form of exercise, developed by Joseph Pilates, which emphasizes the balanced development of the body through core strength, flexibility, and awareness in order to support efficient, graceful movement ***(Otto et al., 2004).***

METHODOLOGY

The study was conducted on sixty (N=60) women College students studying in Euphrasia Training College for women, Kattor, Kerala, India during the year 2014-2015 were selected as subjects. Subjects were randomly assigned equally into four groups. Group-I underwent Yoga Practice, Group-II underwent Power yoga, Group-III underwent Pilates and Group-IV acted as Control. The experimental groups underwent the respective training for a period of 12 weeks (3 days/week), whereas the control remain as normal with the sedentary life.

Among the various Physical fitness parameters only Flexibility and Muscular Endurance were selected as dependent variables. Flexibility was assessed by Sit and Reach test, Muscular Endurance was assessed by Bent Knee Sit-ups. All the four groups were tested on selected Flexibility and Muscular Endurance were analyzed before and after the training period.

ANALYSIS OF THE DATA

The data collected from the experimental groups and control group on prior and after experimentation on selected variables were statistically examined by analysis of covariance (ANCOVA) was used to determine differences, if any among the adjusted post test means on selected criterion variables separately. Whenever they obtained f-ratio value in the simple effect was significant the Scheffe's test was applied as post hoc test to determine the paired mean differences, if any. In all the cases 0.05 level of significance was fixed.

The Analysis of covariance (ANCOVA) on Flexibility and Muscular Endurance of Experimental Groups and Control group have been analyzed and presented in Table -1.

Table – 1 of Analysis of Covariance for Experimental Groups and Control Group on Flexibility and Muscular Endurance

Certain Variables	Adjusted Post test Means				Source of Variance	Sum of Squares	df	Mean Squares	'F' Ratio
	Yoga Practice Group (I)	Power Yoga Practice Group (II)	Pilates Exercise Group (III)	Control Group (IV)					
Flexibility	21.10	21.69	24.19	17.70	Between With in	319.79 74.24	3 55	106.60 1.35	78.97*
Muscular Endurance	17.38	17.96	18.90	14.56	Between With in	156.70 41.37	3 55	52.23 0.75	69.44*

**** Significant at.05 level of confidence***

(The table value required for Significance at 0.05 level with df 3 and 55 is 2.77)

Table-1 shows that the adjusted post test mean value of Flexibility for yoga practice group, power yoga practice group, Pilates exercises group and control group is 21.10, 21.69, 24.19 and 17.70 respectively. The obtained F-ratio of 78.97 for the adjusted post test mean is more than the table value of 2.77 for df 3 and 55 required for significance at 0.05 level of confidence.

Further the table-1 showed that the adjusted post test mean value of Muscular Endurance for yoga practice group, power yoga practice group, Pilates exercises group and control group is 17.38, 17.96, 18.90 and 14.56 respectively. The obtained F-ratio of 69.44 for the adjusted post test mean is more than the table value of 2.77 for df 3 and 55 required for significance at 0.05 level of confidence.

The results of the study indicate that there are significant differences among the adjusted post test means of experimental groups on the increase of Flexibility and Muscular Endurance

To determine which of the paired means had a significant difference, Scheffe's test was applied as Post hoc test and the results are presented in Table-2.

Table - 2
The Scheffe's test for the differences between the adjusted post tests paired means on Flexibility and Muscular Endurance

Certain Variables	Adjusted Post test Means				Mean Difference	Confidence Interval
	Yoga Practice Group (I)	Power Yoga Practice Group (II)	Pilates Exercise Group (III)	Control Group (IV)		
Flexibility	21.10	21.69	--	--	0.59	0.73
	21.10	--	24.19	--	3.09*	0.73
	21.10	--	--	17.70	3.40*	0.73
	--	21.69	24.19	--	3.99*	0.73
	--	21.69	--	17.70	4.20*	0.73
	--	--	24.19	17.70	3.99*	0.73
Muscular Endurance	17.38	17.96	--	--	0.58*	0.54
	17.38	--	18.40	--	1.02*	0.54
	17.38	--	--	14.56	2.82*	0.54
	--	17.96	18.40	--	0.44*	0.54
	--	17.96	--	14.56	3.40*	0.54
	--	--	18.40	14.56	3.84*	0.54

**** Significant at.05 level of confidence***

Table-2 shows that the adjusted post test mean differences on Flexibility between yoga practice group and Pilates exercise group, yoga practice group and Control group, power yoga practice group and Pilates exercise group, power yoga practice group and control group, Pilates exercise group and Control group are 3.09, 3.40, 3.99, 4.20 and 3.99 respectively and they are greater than the confidence interval value 0.73, which shows significant differences at 0.05 level of confidence. The values between yoga practice group and power yoga practice group is 0.59, which is lesser than the confidence interval so it showed insignificant differences.

The results of the study further have revealed that there is a significant difference in Flexibility between the adjusted post test means of yoga practice group and Pilates exercise group, yoga practice group and Control group, power yoga practice group and Pilates exercise group, power yoga practice group and control group, Pilates exercise group and Control group. The values between yoga practice group and power yoga practice group, showed insignificant differences.

Further the Table-2 shows that the adjusted post test mean differences on Flexibility between yoga practice group and power yoga practice group, yoga practice group and Pilates exercise group, yoga practice group and Control group, power yoga practice group and Pilates exercise group, power yoga practice group and control group, Pilates exercise group and Control group are 0.58, 1.02, 2.82, 0.44, 3.40 and 3.84 respectively and they are greater than the confidence interval value 0.54, which shows significant differences at 0.05 level of confidence.

The results of the study further have revealed that there is a significant difference in Muscular Endurance between the adjusted post test means of yoga practice group and power yoga practice group, yoga practice group and Pilates exercise group, yoga practice group and Control group, power yoga practice group and Pilates exercise group, power yoga practice group and control group, Pilates exercise group and Control group.

However, the improvement in Flexibility and Muscular Endurance was significantly higher for Pilate's exercise group than other Experimental groups.

It may be concluded that the Pilate's exercise group has exhibited better than the other experimental groups in improving Flexibility and Muscular Endurance.

The adjusted post test mean values of experimental groups on Flexibility and Muscular Endurance are graphically represented in the Figure -1 & 2.

Figure-1
Bar diagram on ordered adjusted means of Flexibility (In Centimeters)

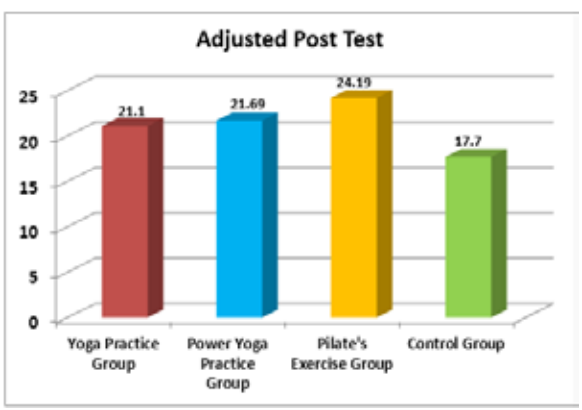
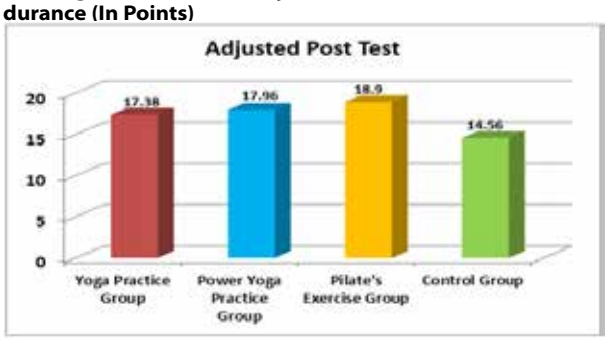


Figure-2
Bar diagram on ordered adjusted means of Muscular Endurance (In Points)



CONCLUSION

From the analysis of the data, the following conclusions were drawn.

Significant differences in achievement were found between Yoga Practice group, Power yoga Practice group, Pilate's exercises group

and Control group in the selected criterion variables such as Flexibility and Muscular Endurance.

The Experimental groups namely, Yoga Practice group, Power yoga Practice group, Pilate's exercises group and Control group had significantly improved in Physical variables such as Flexibility and Muscular Endurance.

The Pilates Exercises was found to be better than the Yoga Practice group, Power yoga Practice group, Pilate's exercises group and Control group in increasing Flexibility and Muscular Endurance.

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