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Effect of Varied Modes of Yogic Practices on Eye Hand Co-Ordination and Memory of Professional College Students

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Abstract

The purpose of the study was to find out the effect of varied modes of yogic practices on eye hand co-ordination and memory of professional college students. It was hypothesized that there would be significant differences on eye hand co-ordination and memory due to the effect of varied modes of yogic practices among professional college students. For the present study 60 polytechnic male students from KLN Polytechnic College, Madurai, Tamilnadu were selected at random and their age ranged from 15 to 17 years. For the present study pre test – post test random group design which consists of a control group and two experimental groups were used. The subjects were randomly assigned to three equal groups of twenty each and named as experimental group 'I', experimental group 'II' and control group. Group I underwent asana, pranayama & meditation, Group II underwent suryanamaskar, pranayama & yoga nidra and the control group has not undergone any training. Eye hand co-ordination was assessed by alternate hand wall test and memory was assessed by object identifying test. The data was collected before and after twelve weeks of training. Analysis of covariance (ANCOVA) was used to test the adjusted mean difference among the three groups. When the adjusted post test was significant, the Scheffe's post-hoc test was used to find out the paired mean differences. The level of significance was set at 0.05. The asana, pranayama & meditation group had positive impact on eye hand co-ordination and memory among professional college students. The suryanamaskar, pranayama & yoga nidra group had positive impact on eye hand co-ordination and memory among professional college students.

Keywords: Asana, Pranayama, Yoga Nidra, Suryanamaskar, Memory.

Introduction

Yoga is one of India's wonderful gifts to mankind. It refers to the union of body and mind. Yoga is simple and easy to practice, acceptable to the people of all walks of life. One of its valuable qualities is that it builds up a store of physical health through the practice of a system of exercises called asana which keep the body cleansed and fit. Yoga postures are the physical positions that co-ordinate breath with movement and withholding the position to stretch and strengthen different parts of the body. Yogic practice is the ideal complement to other forms of physical exercises such as running, cycling and swimming. Yogic postures systematically work on all the major muscle groups, including the back, neck and shoulders, deep abdominal, hip and ankles, feet, wrists and hands. By their very nature, yogic practice affect, all the muscle groups and organs as they simultaneously impart strength, increase flexibility and bring nourishment to internal organs. Although most postures are not aerobic in nature, they do in fact send oxygen to the cell by way of conscious deep breathing and sustained stretching and contraction of different muscle groups. Yoga can help to check any imbalance in muscular development and will enable both mind and body to function efficiently. The meaning of the Sanskrit word 'asana' is 'a steady and comfortable posture'. It is often believed that asana are physical exercises. And of course this is true; they do have a profound influence on the body, but this does not convey their full significance. Each person is made up of three aspects: body, mind and consciousness, which merge together to constitute our whole being. Asana aim at influencing all these three aspects and moulding and yoking them into one harmonious whole. The prime aim of asanas is to help us tread the path to higher consciousness So we can begin to understand and know relationship with existence. We cannot even consider attaining higher awareness if we are ill with disease, aches and pains or mental depression. Therefore the initial purpose of practicing asanas is to eliminate these afflictions and disturbances.

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Methodology

The purpose of the study was to find out the effect of varied modes of yogic practices on eye hand co-ordination and memory of professional college students.

It was hypothesized that there would be significant differences on eye hand co-ordination and memory due to the effect of varied modes of yogic practices among professional college students. For the present study 60 polytechnic male students from KLN Polytechnic College, Madurai, Tamilnadu were selected at random and their age ranged from 15 to 17 years. For the present study pre test – post test random group design which consists of a control group and two experimental groups were used. The subjects were randomly assigned to three equal groups of twenty each and named as experimental group 'I', experimental group 'II' and control group. Group I underwent asana, pranayama & meditation, Group II underwent suryanamaskar, pranayama & yoga nidra and control group has not undergone any training. Eye hand co-ordination was assessed by alternate hand wall test and memory was assessed by object identifying test. The data was collected before and after twelve weeks of training. Analysis of covariance (ANCOVA) was used to test the adjusted mean difference among the three groups. When the adjusted post test was significant, the Scheffe's post-hoc test was used to find out the paired mean differences. The level of significance was set at 0.05.

Results

The findings pertaining to analysis of co-variance between experimental and control groups on eye hand co-ordination and memory of professional college students for pre-post test respectively have been presented in table I to IV.

Table I. Computation of analysis of covariance of mean of experimental and control groups on eye hand co-ordination

	APMG	SPYNG	CG	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	25.45	26.10	25.78	**BG**	2.53	2	1.26	1.02
				WG	70.20	57	1.23	
Post-Test Means	32.45	33.35	26.01	**BG**	145.60	2	72.80	10.82*
				WG	383.25	57	6.72	
Adjusted Post-Test Means	32.37	33.21	26.02	**BG**	120.66	2	60.33	9.78*
				WG	345.17	56	6.16	

B- Between Group Means * - Significant
W- Within Group Means (Table Value for 0.05 Level for df 2 & 57 = 3.15)
df- Degrees of Freedom (Table Value for 0.05 Level for df 2 & 56 = 3.16)

An examination of table - I indicated that the pre test means of asana, pranayama & meditation group, suryanamaskar, pranayama & yoga nidra group and control groups were 25.45, 26.10 and 25.78 respectively. The obtained F-ratio for the pre-test was 1.02 and the table F-ratio was 3.15. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 2 and 57. This proved that there were no significant difference between the experimental and control groups indicating that the process of randomization of the groups was perfect while assigning the subjects to groups. The post-test means of the asana, pranayama & meditation group, suryanamaskar, pranayama & yoga nidra group were 32.45, 33.35 and 26.01 respectively. The obtained F-ratio for the post-test was 10.82 and the table F-ratio was 3.15. Hence the post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 57. This proved that the differences between the post test means of the subjects were significant. The adjusted post-test means of the asana, pranayama & meditation group, suryanamaskar, pranayama & yoga nidra group were 32.37, 33.21 and 26.02 respectively. The obtained F-ratio for the adjusted post-test means was 9.78 and the table F-ratio was 3.16. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 56. This proved that there was a significant difference among the means due to the experimental trainings on speed. Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe's post hoc test. The results were presented in Table-II.

Table II. The scheffe's test for the differences between the adjusted post test paired means on eye hand co-ordination

Adjusted Post-test means			Mean Difference	Required CI
APMG	SPYNG	CG		
19.47	19.45	---	0.02	1.97
19.47	---	16.42	3.05*	
---	19.45	16.42	3.03*	

**** Significant at 0.05 level of confidence***

The multiple comparisons showed in Table II proved that there existed significant differences between the adjusted means of asana, pranayama & meditation group and control group (3.05), suryanamaskar, pranayama & yoga nidra group and control group (3.03). There was no significant difference between asana, pranayama & meditation group and suryanamaskar, pranayama & yoga nidra group (0.02) at 0.05 level of confidence with the confidence interval value of 1.97. The pre, post and adjusted means on speed were presented through bar diagram for better understanding of the results of this study in figure-I.

Figure I. Pre post and adjusted post test differences of the experimental and control groups on eye hand co-ordination

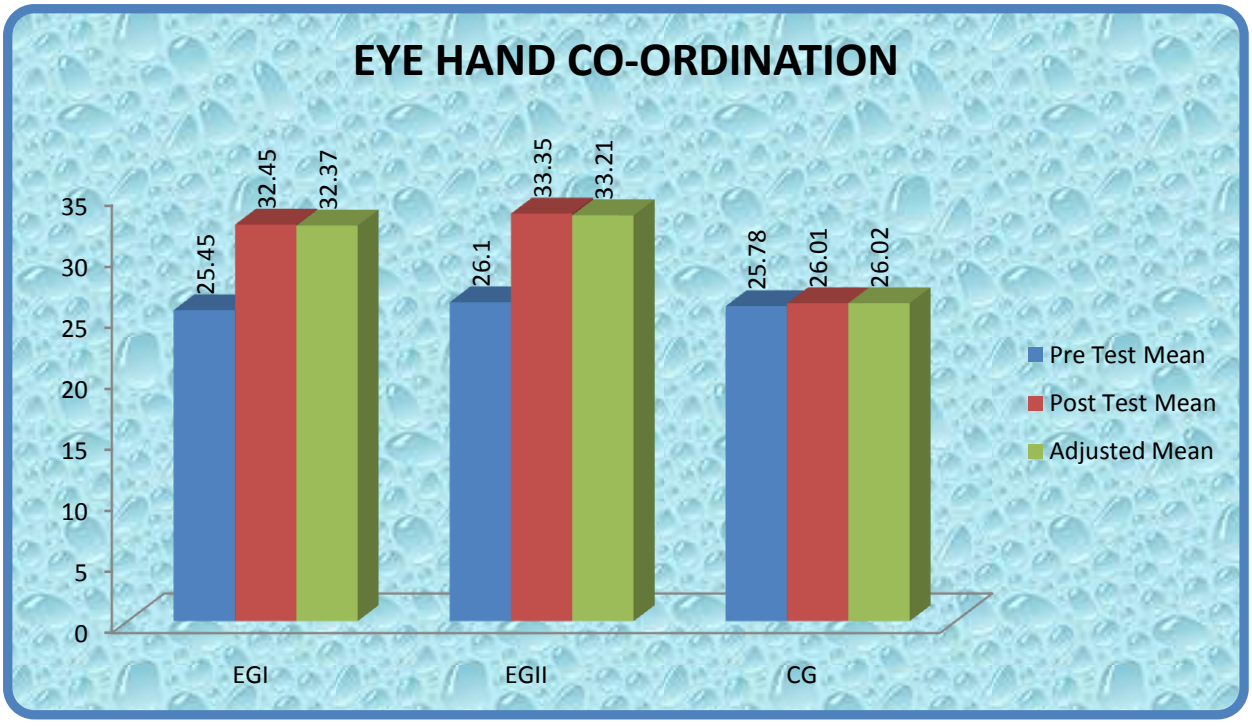


Table III. Computation of analysis of covariance of mean of experimental and control groups on memory

	APMG	SPYNG	CG	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	8.15	8.10	8.00	**BG**	0.23	2	0.11	0.21
				WG	30.35	57	0.53	
Post-Test Means	11.65	11.75	8.05	**BG**	177.73	2	88.86	107.20*
				WG	47.25	57	0.82	
Adjusted Post-Test Means	11.64	11.75	8.05	**BG**	176.32	2	88.16	104.51*
				WG	47.24	56	0.84	

B- Between Group Means * - Significant
W- Within Group Means (Table Value for 0.05 Level for df 2 & 57 = 3.15)
df- Degrees of Freedom (Table Value for 0.05 Level for df 2 & 56 = 3.16)

An examination of table - III indicated that the pre test means of asana, pranayama & meditation group, suryanamaskar, pranayama & yoga nidra group were 8.15, 8.10 and 8.00 respectively. The obtained F-ratio for the pre-test was 0.21 and the table F-ratio was 3.16. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 2 and 57. This proved that there were no significant difference between the experimental and control groups indicating that the process of randomization of the groups was perfect while assigning the subjects to groups. The post-test means of the asana, pranayama & meditation group, suryanamaskar, pranayama & yoga nidra group were 11.65, 11.75 and 8.05 respectively. The obtained F-ratio for the post-test was 107.20 and the table F-ratio was 3.15. Hence the post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 57. This proved that the differences between the post test means of the subjects were significant. The adjusted post-test means of the asana, pranayama & meditation group, suryanamaskar, pranayama & yoga nidra group were 11.64, 11.75 and 8.05 respectively. The obtained F-ratio for the adjusted post-test means was 104.51 and the table F-ratio was 3.16. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 56. This proved that there was a significant difference among the means due to the experimental trainings on explosive strength. Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe's post hoc test. The results were presented in table IV.

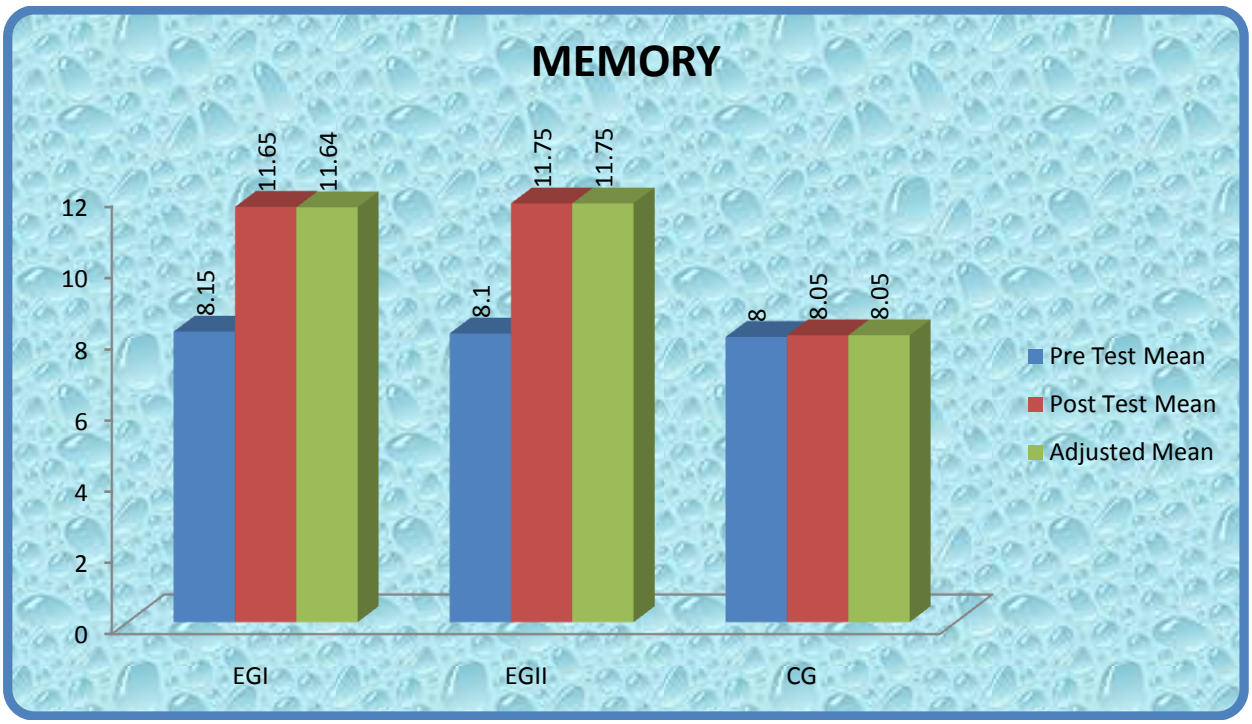
Table IV. The scheffe's test for the differences between the adjusted post test paired means on memory

Adjusted Post-test means			Mean Difference	Required CI
APMG	**SPYNG**	**CG**		
11.64	11.75	---	0.11	0.72
11.64	---	8.05	3.59*	
---	11.75	8.05	3.70*	

**** Significant at 0.05 level of confidence***

The multiple comparisons showed in Table IV proved that there existed significant differences between the adjusted means of asana, pranayama & meditation group and control group (3.59), suryanamaskar, pranayama & yoga nidra group and control group (3.70). There was no significant difference between asana, pranayama & meditation group and suryanamaskar, pranayama & yoga nidra group (0.11) at 0.05 level of confidence with the confidence interval value of 0.72. The pre, post and adjusted means on explosive strength were presented through bar diagram for better understanding of the results of this study in figure-II.

Figure II. Pre post and adjusted post test differences of the experimental and control groups on memory



Discussions on Findings

In the case of eye hand co-ordination and memory the results between pre and post (12 weeks) test has been found significantly higher in experimental groups in comparison to control group. The findings of the present study have strongly indicates that asana, pranayama & meditation group and suryanamaskar, pranayama & yoga nidra group have produced significant effect on eye hand co-ordination and memory.

Conclusions

On the basis of the findings and within the limitations of the study the following conclusions were drawn:

1. The asana, pranayama & meditation group had positive impact on eye hand co-ordination and memory among professional college students.
2. The suryanamaskar, pranayama & yoga nidra group had positive impact on eye hand co-ordination and memory among professional college students.

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