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Effect of Yogasana and Pranayama on Selected Psychological and Physical Fitness Variables among School Boys

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Abstract

The purpose of the present study was to find out the influence of yogasana and pranayama on selected psychological variable (anxiety and aggression) and physical fitness variables (flexibility and muscular endurance). To achieve this purpose, thirty boys from various higher secondary schools around Cuddalore, Tamilnadu, India served as subjects. These subjects were divided into two groups group I was experimental (n=15) and group II acted as control (n = 15). The control group was not engaged in yogasana and pranayama training. The experimental group was engaged in yogasana and pranayama training. The pre and post-test data were analysed by analysis of co-variance (ANCOVA), the process by which pre-test mean differences can be adjusted to the pre – test means. Since, only two groups were involved in this study, the Scheffe's post-hoc test was not used whenever the 'F' ratio for adjusted post-test mean was found to be significant. In all the cases 0.05 level of confidence was selected to reject the null hypothesis. Yogasana and pranayama training showed a significant decrease in anxiety and aggression. Yogasana and pranayama training showed a significant improvement in flexibility and muscular endurance.

Keywords: Anxiety, Aggression, Flexibility, Muscular Endurance, School Boys.

Introduction

The practice of yoga started thousands and thousands of years ago, when the world was rich in resources; and man was self contented. The satisfaction in life made him look into the origin of the Universe. The inquisitiveness in man took him to Yoga. Archaeologists found out evidence from Mohenjo-Daro and Harappa that people of Indus civilization period which was dated 5000 BC had practiced Yoga. Only when Aryas entered India they introduced the Vedas-Rig, Yajur, Sama, and Athervana with three components in each Veda viz., Mantras Brahmanas (action synchronizing the Manthras). Upanishads is the philosophy of Mantras and Brahmas. Aranyaka is other section which deals with Sanyasa-seeking peace through penance and meditation by going deep into the forests. Rig Veda is the oldest among Vedas. Vyasar was responsible for organizing these four in order. Rig is hymns. Yajur is Yagam (praying, creating sacred fire and putting all holy things in it) Sama is song or music. Atharvana is thanthram / manthram. Even those days, there were people who disputed the existence of God. Lokhayats were prominent among them. Unfortunately this group could not have a leader. All in that group were leaders. That was why it did not become a religion like Buddhism and Jainism.

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Methodology

To achieve the purpose of the study 30 boys studying at, various higher secondary schools around Cuddalore, Tamilnadu, India were selected as subjects and their age ranged between 15 to 17 years. Subjects were selected at random by lot procedure. They were asked to undergo medical checkup and were found to be normal, healthy and fit enough to undergo training. Group I undergo training (n = 15) and Group II acted as control (n = 15). The data were collected with the help of trained physical education scholars. The investigation reviewed the available scientific literature pertaining to yogasana and pranayama from books, journal, periodical and research articles. Resorting from the review of literature and discussions with the experts and considering the feasibility criteria of the study and the relevance of the variables of the present study. In the present study yogasana and pranayama is consider as independent variables. The following are dependent variables: Anxiety, Aggression, Flexibility and Muscular Endurance.

Statistical Analysis

The data collected from experimental and control groups prior to and after experimentation on selected psychological and physical fitness variables – i.e., anxiety, aggression, flexibility and muscular

endurance were statistically examined for significant differences, if any, by applying the analysis of covariance (ANCOVA).

Results

Table I. Analysis of covariance for the data on anxiety of experimental and control groups

	Experimental Group	Control Group	Source of Variance	Sum of Square	df	Mean Square	'F' ratio
Pre-test Mean	37.90	39.81	Between	61.27	1	61.27	1.30
S.D.	2.29	3.01	Within	1321.85	28	47.21	
Post-test Mean	36.21	29.96	Between	92.85	1	92085	20.23*
S.D.	2.63	2.88	Within	128.53	28	4.59	
Adjusted Post-test Mean	35.22	39.59	Between	96.11	1	96.11	15.40*
			Within	168.58	27	6.24	

*Significant .05 level of confidence, (The table values required for significance at .05 level of confidence with df 1 and 28 and 1 and 27 were 4.20 and 4.21 respectively).

Table –I indicated that the pre-test mean of anxiety between the experimental group and control group were 37.90 ± 2.29 and 39.81 ± 3.01 respectively. The 'F' ratio of 1.30 indicated that the pre-test means was not significant at the 0.05 level of confidence. The post-test mean of anxiety between the experimental group and control group were 36.21 ± 2.63 and 39.96 ± 2.88 respectively. The 'F' ratio of 20.23 indicated that the post-test means was significant at the 0.05 level of confidence. The adjusted post-test means of anxiety between the experimental group and control group were 35.22 and 39.59 respectively. The obtained 'F' ratio was 15.40 and it was higher than the tabulated 'F' ratio for degree of freedom 1 and 27 was 4.21. It was concluded that there was a significant improvement after the experimental period.

Table II. Analysis of covariance for the data on aggression of experimental and control groups

	Experimental Group	Control Group	Source of Variance	Sum of Square	df	Mean Square	'F' ratio
Pre-test Mean	13.57	13.98	Between	0.02	1	0.02	0.05
S.D.	1.28	1.25	Within	12.31	28	0.44	
Post-test Mean	12.98	13.99	Between	20.23	1	20.23	44.96*
S.D.	1.56	1.29	Within	12.47	28	0.45	
Adjusted Post-test Mean	12.56	13.87	Between	42.69	1	42.69	61.87*

			Within	18.63	27	0.69

*Significant .05 level of confidence. (The table values required for significance at .05 level of confidence with df 1 and 28 and 1 and 27 were 4.20 and 4.21 respectively).

Table –II indicated that the pre-test mean of aggression between the experimental group and control group were 13.57 ± 1.28 and 13.98 ± 1.25 respectively. The 'F' ratio of 0.05 indicated that the pre-test means was not significant at the 0.05 level of confidence. The post-test mean of aggression between the experimental group and control group were 12.98 ± 1.56 and 13.99 ± 1.29 respectively. The 'F' ratio of 44.96 indicated that the post-test means was significant at the 0.05 level of confidence. The adjusted post-test means of aggression between the experimental group and control group were 12.56 and 13.87 respectively. The obtained 'F' ratio was 61.87 and it was higher than the tabulated 'F' ratio for degree of freedom 1 and 27 was 4.21. It was concluded that there was a significant improvement after the experimental period.

Table III. Analysis of covariance for the data on flexibility of experimental and control groups

	Experimental Group	**Control Group**	**Source of Variance**	**Sum of Square**	**df**	**Mean Square**	**'F' ratio**
Pre-test Mean	22.16	22.02	Between	0.14	1	0.14	0.103
S.D.	1.00	1.31	Within	38.07	28	1.36	
Post-test Mean	24.43	22.44	Between	7.73	1	7.73	4.99*
S.D.	1.05	1.41	Within	43.38	28	1.55	
Adjusted Post-test Mean	25.36	22.51	Between	9.83	1	9.83	32.70*
			Within	8.12	27	0.301	

*Significant .05 level of confidence, (The table values required for significance at .05 level of confidence with df 1 and 28 and 1 and 27 were 4.20 and 4.21 respectively).

Table –III shows that the pre-test mean of flexibility between the experimental group and control group were 22.16 ± 1.00 and 22.02 ± 1.31 respectively. The 'F' ratio of 0.103 indicated that the pre-test means was not significant at the 0.05 level of confidence. The post-test mean of flexibility between the experimental group and control group were 24.43 ± 1.05 and 22.44 ± 1.41 respectively. The 'F' ratio of 4.99 indicated that the post-test means was significant at the 0.05 level of confidence. The adjusted post-test means of flexibility between the experimental group and control group were 25.36 and 22.51 respectively. The obtained 'F' ratio was 32.70 and it was higher than the tabulated 'F' ratio for degree of freedom 1 and 27 was 4.21. It was concluded that there was a significant improvement after the experimental period.

Table IV. Analysis of covariance for the data on muscular endurance of experimental and control groups

	Experimental Group	Control Group	Source of Variance	Sum of Square	df	Mean Square	'F' ratio
Pre-test Mean	25.04	24.48	Between	3.92	1	3.92	0.104
S.D.	6.51	5.76	Within	1813.20	48	37.78	
Post-test Mean	27.68	25.32	Between	69.62	1	69.62	1.87
S.D.	6.23	5.97	Within	1786.88	48	37.23	
Adjusted Post-test Mean	27.41	25.59	Bet ween	41.43	1	41.23	16.76*
			Within	116.20	47	2.47	

*Significant .05 level of confidence, (The table values required for significance at .05 level of confidence with df 1 and 28 and 1 and 27 were 4.20 and 4.21 respectively).

Table –IV shows that the pre-test mean of muscular endurance between the experimental group and control group were 25.04 ± 6.51 and 24.48 ± 5.76 respectively. The 'F' ratio of 0.104 indicated that the pre-test means was not significant at the 0.05 level of confidence. The post-test mean of muscular endurance between the experimental group and control group were 27.68 ± 6.23 and 25.32 ± 5.97 respectively. The 'F' ratio of 1.87 indicated that the post-test means was significant at the 0.05 level of confidence. The adjusted post-test means of muscular endurance between the experimental group and control group were 27.41 and 25.59 respectively. The obtained 'F' ratio was 16.76 and it was higher than the tabulated 'F' ratio for degree of freedom 1 and 27 was 4.21. It was concluded that there was a significant improvement after the experimental period.

Conclusions

1. Yogasana and pranayama training showed a significant decrease in anxiety and aggression.
2. Yogasana and pranayama training showed a significant improvement in flexibility and muscular endurance.

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