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Effect of Yogic Practices and Physical Exercises on Flexibility Self-Confidence and Blood Pressure

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Abstract

The aim of the study present was to find out the effect of yogic practices and physical exercises on physical, mental and physiological fitness of middle aged men. The purpose of the present study was to find the effect of yogic practice and physical exercises on flexibility, self-confidence and blood pressure (both systolic and diastolic). Forty-five middle aged men in 35 and 40 years of age group from in and around Annamalainagar, Chidambaram were selected as subjects. They were divided into three equal groups, each group consisted of fifteen subjects, in which group – I underwent yogic practices, group – II underwent physical exercises and group – III acted as control which did not participate any training apart from their day to day activities. The period of training for the present study was six days (Monday to Saturday) in a week for thirteen weeks. Prior to and after the training period the subjects were tested for flexibility, self-confidence and blood pressure (systolic and diastolic). The flexibility was measured by administering sit and reach test, self-confidence was measured by using Taylor's Manifest Self-confidence Scale and blood pressure (both systolic and diastolic) was measured by using sphygmomanometer. The analysis of covariance (ANCOVA) was applied as statistical tool and whenever the 'F' ratio for adjusted post-test means were significant, the Scheffé S test was used as post-hoc test to find out any significant difference between the training groups. It was concluded from the result of the study that yogic practices and physical exercises groups have improved ($P < 0.05$) all the criterion variables, such as, flexibility, self-confidence and decreased the blood pressure (both systolic and diastolic). Moreover there was no significant difference ($P > 0.05$) was found between the experimental groups on selected criterion variables.

Keywords: Yogic Practices, Physical Exercise, Flexibility, Self-Confidence, Blood Pressure.

Introduction

Yoga is a complete science of life that originated in India many thousands of years ago. It is the oldest system of personal development in the world, encompassing body, mind and spirit.[1] Yoga is not an ancient myth buried in oblivion. It is the most valuable inheritance of the present. It is the essential need of today and the culture of tomorrow.[2] The yoga postures (known as asanas), help to stretch and relax the muscles and skeletal system. The physical release through these soothing movements can help create a sense of calmness and well-being.[3] Physical exercise is any bodily activity that develops and maintains physical fitness and overall health.[4] Frequent and regular aerobic exercise has been shown to help prevent or treat serious and life-threatening chronic conditions such as high blood pressure, obesity, heart disease, Type 2 diabetes, insomnia, and depression.[5]

Rasch and Burkey (1978) [6] in their book, they stated that "flexibility is not a general factor but is highly specific to each joint. The socio-psychological concept of self-confidence relates to self-assuredness in one's personal judgment, ability, power, etc., sometimes manifested excessively.[7] Blood pressure (BP) is a force exerted by circulating blood on the walls of blood vessels, and is one of the principal vital signs.

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Methodology

This study under investigation involves the experimentation of yogic practices and physical exercises on flexibility, self-confidence and blood pressure (systolic and diastolic). Forty five middle aged men those who were living around Annamalainagar, Chidambaram with age between 35 and 40 years were selected as subjects. The selected forty five subjects were randomly divided into three groups of fifteen each, out of which group - I (n = 15) underwent yogic practice, group - II (n = 15) underwent physical exercise training and group - III (n = 15) remained as control. The training programme was carried out for six days (Monday to Saturday) per week during morning session only (6 am to 8 am) for thirteen weeks. Flexibility was measured by administering sit and reach test, self-confidence was measured by using Taylor's Manifest Self-confidence Scale and blood pressure was measured

by using sphygmomanometer. The analysis of covariance (ANCOVA) was used to find out the significant difference if any, between the experimental groups on selected criterion variables separately. In all the cases, 0.05 level of confidence was fixed to test the significance, which was considered as an appropriate. Since, there were three groups involved, the Scheffé *S* test was applied as post hoc test.

Results

The data collected prior to and after the experimental periods on flexibility, self-confidence and blood pressure (systolic and diastolic) on yogic practices group, physical exercises group and control group were analysed and presented in the following table -I.

Table I. Analysis of Covariance and 'F' ratio for Flexibility, Self-confidence and Blood Pressure (systolic and diastolic) for Yoga Practice Group, Physical Exercise Group and Control Groups

Variable Name	Group Name	Yoga Practice Group	Physical Exercise Group	Control Group	'F' Ratio
Flexibility (in inches)	**Pre-test Mean ± S.D**	3.22 ± 0.899	3.561 ± 0.632	3.483 ± 0.496	0.227
	Post-test Mean ± S.D.	4.552 ± 0.521	4.422 ± 0.38	3.397 ± 0.373	25.876*
	Adj. Post-test Mean	4.586	4.356	3.411	55.439*
Self-confidence (in points)	**Pre-test Mean ± S.D**	26.11 ± 0.981	26.36± 0.886	26.28 ± 0.868	0.996
	Post-test Mean ± S.D.	24.36 ± 0.63	24.89 ± 1.001	27.85 ± 0.796	22.594*
	Adj. Post-test Mean	24.163	24.819	27.143	38.86*
Systolic Blood Pressure (mmHg)	**Pre-test Mean ± S.D**	119.56 ± 5.12	118.33 ± 4.98	119.25 ± 4.26	1.096
	Post-test Mean ± S.D.	117.16 ± 3.89	116.69 ± 4.81	120.39 ± 4.83	32.86*
	Adj. Post-test Mean	116.896	116.993	120.159	49.568*
Diastolic Blood Pressure (mmHg)	**Pre-test Mean ± S.D**	77.53 ± 2.77	78.09 ± 3.54	77.97 ± 3.41	0.983
	Post-test Mean ± S.D.	75.28 ± 2.31	76.96 ± 3.87	78.56 ± 3.51	22.93*
	Adj. Post-test Mean	75.793	76.086	78.335	33.86*

* Significant at .05 level of confidence. (The table value required for significance at .05 level of confidence with df 2 and 43 and 2 and 42 were 3.21 and 3.22 respectively).

The data are presented in the above table – I and the result shows that there was a significant improvement was occurred on all criterion variables such as, flexibility, self-confidence, systolic and diastolic blood pressure after the yogic practices and physical exercises when compared with the control group. Further to determine which of the paired means has a significant improvement, Scheffĕ *S* test was applied as post-hoc test. The result of the follow-up test is presented in Table - II.

Table II. Scheffĕ S Test for the Difference Between the Adjusted Post-Test Mean of Flexibility, Self-confidence and Blood Pressure (systolic and diastolic)

Adjusted Post-test Mean of Flexibility				
Yoga Practice Group	**Physical Exercise Group**	**Control Group**	**Mean Difference**	**Confidence interval at .05 level**
4.586		3.411	1.175*	0.88963
4.586	4.356		0.023	0.88963
	4.356	3.411	0.945*	0.88963
Self-confidence				
24.163		27.143	2.98*	1.39541
24.163	24.819		0.656	1.39541
	24.819	27.143	2.324*	1.39541
Systolic Blood Pressure				
116.896		120.159	3.263*	1.79618
116.896	116.993		0.097	1.79618
	116.993	120.159	3.166*	1.79618
Diastolic Blood Pressure				
75.793		78.335	2.542*	1.00956
75.793	76.086		0.293	1.00956
	76.086	78.335	2.249*	1.00956

* Significant at 0.05 level of confidence.

Before applying the experiment, all the subjects in yoga practice, physical exercise and control groups were attended the pre-test, which was conducted a day prior to the commencement of the training and the data were collected on flexibility, self-confidence and blood pressure (systolic and diastolic). After eight weeks of training the post-test was conducted one day after the training period to find out any changes in the criterion variables. The analysis of covariance (ANCOVA) was used to find out the significant difference if any, among the experimental groups and control group on selected criterion variables separately. In all the cases, .05 level of confidence was fixed to test the significance, which was considered as an appropriate. Since there was three groups were involved in this study, the Scheffĕ *S* test was used as pos-hoc test and it was shown in Table - II.

After applying the analysis of covariance, the result of this study showed that there was a significant difference among yoga practice, physical exercise and control groups on the changes in flexibility, self-confidence and blood pressure after eight weeks of training. The criterion variables such as, flexibility and self-confidence was improved for both the yoga practice group and physical exercise group and systolic and diastolic blood pressure has significantly decreased after the yoga practice, physical exercise period. Further, comparing the adjusted post-test means of all the criterion variables, such as, flexibility, and self-confidence both the training groups were significantly increased the performance after the training period, when compared with the control group.

Conclusions

Flexibility and self-confidence has improved for both the experimental groups, such as yogic practice group and physical exercise group, when compared with the control group. The blood pressure has also decreased in yogic practice group and physical exercise group when compared with the control group. But there was no significant difference was found between the experimental groups on selected criterion variables. There are so many evidences shows that selected yogasana practices and physical exercises has enhanced the health related physical fitness such as, muscular strength, endurance, flexibility, body composition and pulmonary function.[8,9,12,15,18] Moreover performing yogasana postures which helps to reduction in self-confidence.[10,11,17] It is also evident that both physical exercises and yogic practices were reduced the self-confidence level.[16] Blood pressure was also reduced significantly after the selected yogic practices which will avert the hyper or hypotension for normal human beings who were attained the above 40 years of age.[13] Involving the physical activity improves the muscle strength, balance and endurance for people who were attained 40 years of age.[14]

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