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A Pilot Study on the Effect of Yogic Practices on Physiological Parameter of Stress Among Middle Aged Police Men

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Abstract: The purpose of this study was to find out the efficacy of Yogic Practices on Systolic blood pressure among middle aged men suffering with Stress. For the purpose of the study, 30 Middle aged police men suffering with stress were selected randomly using random sampling method from Kerala between the age group of 35 to 45 years. They were divided into two groups I (Experimental), and II (Control) with 15 subjects each. It was hypothesized that there would be significant differences among the middle-aged men with stress on selected physiological variable such as Systolic blood pressure than the control group. Preliminary test was conducted for two Groups on Systolic blood pressure before the start of the training program. Group I subjects were given Yogic practices for 60 min, 6 days a week for a total period of eight weeks. Group II (Control Group) were in active rest. After the experimental period, the two groups were retested again on the same selected dependent variables. Analysis of co-variance (ANCOVA) was used to find out the significant differences between the experimental group and the control group. The test of significance was fixed at 0.05 level of confidence. Experimental Group showed significant differences on selected physiological variable such as Blood Pressure (decreased) than the Control Group due to Yogic practices among middle aged men with Stress. The hypothesis was accepted at 0.05 level of confidence. Hence it is concluded that Yogic practices are beneficial to the middle-aged men suffering with Stress to maintain healthy Blood Pressure Levels.

Keywords: Yoga, Stress, Systolic Blood Pressure, Depression

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Introduction

More than 76 million US adults are estimated to have hypertension according to current estimates; less than half of these people have

their blood pressure under control. Uncontrolled hypertension is regarded to be the root cause of 49% of ischemic heart disease and 62% of

cerebrovascular illness, and it was estimated that in 2010 it cost the US \$93.5 billion in lost productivity due to missed days of work and medical expenses. The current high prevalence of uncontrolled hypertension is a result of a number of factors, including prescription costs, drug interactions, and non-adherence to medication regimens. Alternative, less expensive methods to reduce blood pressure that have lower risk of drug interactions and which may convey the benefits of long-term adherence are much needed. One alternative medical practise that may help with blood pressure control is yoga. Yoga is usually regarded as an ancient tradition (dating back between 5,000 and 8,000 years) that includes postures, breath control, and meditation. Yoga can help in bringing down the stress levels thereby bringing back the elevated blood pressure levels to normal range.

Thirthalli *et al.* (2013) worked on the effect of yoga practices as an antidepressant, as well as its role on lowering the serum cortisol levels. 54 depressive patients were chosen, 32 patients received yoga with or without medication and 16 received medication only. The duration of the study was 3 months. Hamilton Depression Rating Scale (HDRS) with serum cortisol measurements were taken before and after the intervention. The study results showed significant drop in cortisol levels in patients who received yoga with or without medication; compared to drug only group, the results of the study supported that yoga may act as anti-stress agent thereby reducing the cortisol levels.

Telles *et al.* (2017) investigated on the efficacy of 15 min of alternate nostril yoga breathing in improving the performance in a vigilance test without an increase in blood pressure. Fifteen healthy male volunteers participated in the study (group mean age $\pm$ SD, 22.4 $\pm$ 2.4 years). Participants were assessed on 3 separate days in 3 different sessions. These were (i) alternate nostril yoga breathing, (ii) breath awareness, and (iii) sitting quietly as a control. Blood pressure and the digit vigilance test were simultaneously

assessed before and after each session. Systolic blood pressure ($p < 0.01$), mean arterial blood pressure ($p < 0.05$), and the time taken to complete the digit vigilance test ($p < 0.05$) significantly decreased following alternate-nostril yoga breathing. The time taken to complete the digit vigilance test differed significantly between sessions ($p < 0.05$). The time taken to complete the digit vigilance test was also significantly decreased after sitting quietly ($p < 0.01$). The results of the study supported that Alternate-nostril yoga breathing appears to improve performance in the digit vigilance test, along with a reduction in systolic blood pressure.

However, there are only a few studies conducted on the effect of yogic practices on stressed middle aged police men. This study aims at finding role of yoga practices on blood pressure levels in middle age police men. The objective of the study was to find out whether there would be any significant difference on physiological variable due to practice of yoga, among middle aged police men suffering with Stress. The purpose of the study was to find out the effect of yogic practices on selected variable such as Blood Pressure among Middle Aged Stressed Police men. Stress is a prevalent illness that is linked to increased morbidity and a lower quality of life. Yoga is an ancient form of treatment that has been shown to be effective in treating a variety of chronic conditions that afflict people in general.

It was hypothesized that there would be significant differences due to yogic practices on selected variables such as Systolic blood pressure among Middle Aged Stressed Police men than control group.

The delimitations of this study are -- (i) The study was delimited to police men living in Kerala only, (ii) The age group of subjects was ranged from 35 to 45 years only, (iii) The independent variable chosen was Yogic Practices only, and (iv) The dependent variables chosen are systolic blood pressure only.

The limitations of this study are-- (i) The

Table 1: Computation of Analysis of Covariance of experimental group and control group on systolic blood pressure (scores in mmHg)

TEST	GROUP 1	GROUP II CONTROL GROUP	SOURCE OF VARIANCE	DEGREES OF FREEDOM	SUM OF SQUARES	MEAN SUM OF SQUARES	F-RATIO
Pre	136.47	134.53	Between	1	28.03	28.03	2.33
			Within	28	337.47	12.05	
Post	130.00	135.93	Between	1	264.03	264.03	31.74*
			Within	28	232.93	8.32	
Adjusted Post	129.98	135.95	Between	1	246.39	246.39	28.57*
			Within	27	232.84	8.62	

*Significant at 0.05 level of confidence; (Table F-ratio at 0.05 level of confidence for 1 and 28 (df) =4.2, 1 and 27 (df) =4.21)

factors like life style, body structure, and social activities were not taken in to consideration for this study, (ii) The factors like family heredity and motivational factors were not taken into consideration for this study, (iii) Certain factors like environmental and climatic conditions, economical background and also day to day work were not taken into consideration, and (iv) The factors like diet, medication and personal habits were not taken in to consideration for the study.

Materials and Methods

To achieve the purpose of the study, 46 old aged stressed police men were identified from Kerala, and after filtering, 30 subjects aged between 35-45 were randomly assigned to both experimental (n=15) and control group (n=15). Experimental Group was given yoga training for 8 weeks, Six days a week for a duration of one hour in the morning. The control group was in active rest. Systolic Blood Pressure test were taken for both groups before and after intervention. Analysis of co-variance (ANCOVA) was used to find out the significant differences among the groups. The test of significance was fixed at 0.05 level of confidence.

Yogic practices involving sukshma vyama, Vrikshasana, Garudasana, Vakrasana, ardhmaten-drasan gomukhasana Shashangasan, Nadi Shuddi, Seetali Brahmari Ujjayi, Seetkari Omkara chanting and Yoga Nidra were given to Group I (Experimental Group). Group II (Control Group) subjects were permitted to undergo their routine and normal lifestyle normal activities during the training period (Swami Sathyananda Saraswathi, 2002).

Results and Discussion

Table 1 and Figure 1 depict the systolic blood pressure in control and experimental group. The obtained F value on pre test scores 2.33 was lesser than the recommended F value of 4.2 to be significant at 0.05 level. This shows that there was no significant difference between the groups before the training period. There are significant differences between groups after the completion of training program, as obtained F value 31.74 was greater than the required F value of 4.21. This proved that the differences between the post-test means of the subject were significant. On account of adjusted pre-post-test mean scores,

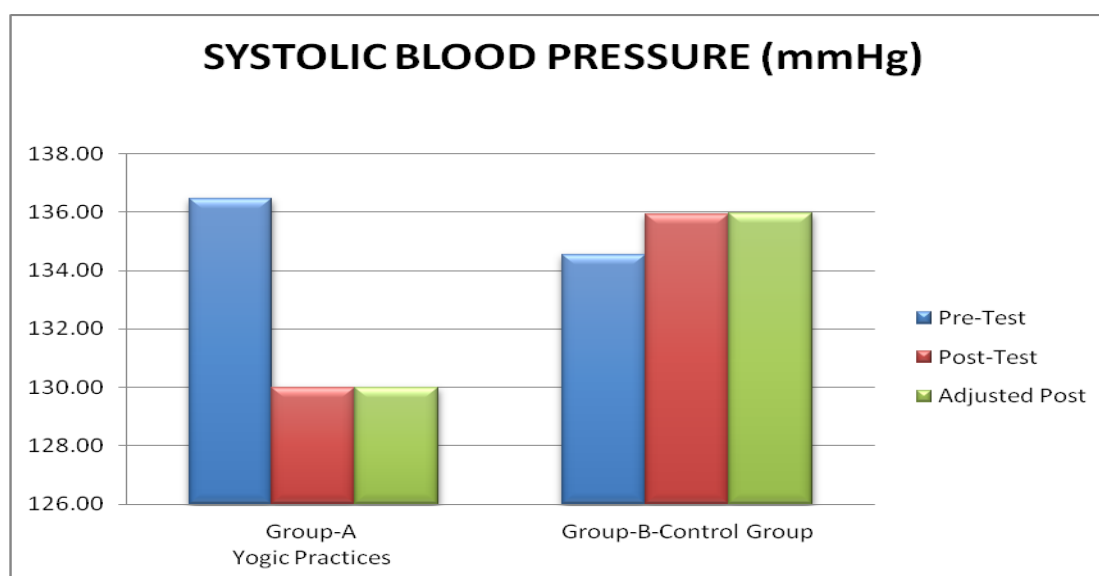


Fig. 1: Mean differences among the experimental and control group on systolic blood pressure.

the obtained F value 28.57 was greater than the required F value of 4.21. This proved that there was a significant difference among the means due to eight weeks of yogic practices on Systolic Blood Pressure.

The outcome of the study exhibits that Systolic Blood Pressure Levels decreased significantly due to Yogic Practices for Group-I than Group II. Hence the hypothesis was accepted at 0.05 level of confidence. The above findings were also substantiated by the observations made by Thirthalli *et al.* (2013) and Telles *et al.* (2017).

It was hypothesized that there would be significant differences on selected physiological variable such as Systolic Blood Pressure due to Yogic practices among middle aged stressed police men than the control group. The results proved that there were significant differences on Systolic Blood Pressure (decreased) than the control group among aged stressed police men due to Yogic Practices.

Conclusion

It was concluded that Yoga practices (Group A) significantly decreased Systolic Blood Pressure among Aged Stressed Police men. Hence Yogic practices are beneficial for middle aged stressed police men to maintain their overall wellbeing and living a stress-free life.

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