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M Rangarajan

Research Scholar, Centre for
Yoga Studies, Annamalai
University, Annamalai Nagar,
Tamil Nadu, India

Dr. P Anandhan

Assistant Professor, Department
of Physical Education,
Annamalai University,
Annamalai Nagar, Tamil Nadu,
India

Influence of asana pranayama with mudra on stress among hypertensive Indian paramilitary personnel

M Rangarajan and Dr. P Anandhan

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Abstract

Stress is the main factor contributing to hypertension among paramilitary personnel. Such disorders improve from yoga therapy, which also has less adverse effects. The aim of the present study is to find the influence of asana pranayama with mudra on stress among hypertensive Indian paramilitary personnel. To achieve this purpose, forty five paramilitary personnel were randomly selected as subject from group center and headquarters of 2nd signal battalion, central reserve police force (CRPF), Hyderabad, Telangana State, India as subjects. The selected subjects age, height and weight range were 39±6 years, 171±11 cm and 75±14 kg respectively. The average blood pressure of selected subjects observed 136±4 as systolic blood pressure and 85±2 as diastolic blood pressure; therefore the selected subjects were identified as hypertensive persons. They were randomly split into four equal groups known as group I asana with mudra group, group II pranayama with mudra group and group III asana pranayama with mudra group. The group IV would be considered as control group. The stress was selected as criterion variable and the same evaluate using Perceived Stress Scale as referred by Cohen., Kamarck., & Mermelstein., 1994. The whole experimental program was implemented for six days per week for twelve weeks. In every day training session, the practice lasted approximately between forty-five minutes and an hour, which included warning up and relaxation. All the subjects of the four groups were tested on criterion variables at prior to and immediately after the training program for significance by applying independent 't' test to find the initial and final mean differences on each variables. The analysis of covariance was used to find the difference among the group if the difference on initial and final mean. In addition to this, Scheffe post-hoc test will be employed to find the paired mean differences. The level of confidence is fixed at 0.05, for significance. The result of present study observed that asana pranayama with mudra practice had significant contribution for reducing stress level. The present study concluded that the asana pranayama with mudra practice has highly positive impact in the management of stress.

Keywords: Asana, pranayama, mudra, stress, paramilitary personnel

Introduction

Yoga is a great way to work on your flexibility and strength. Some types of yoga are about relaxation some styles of yoga, such as ashtanga and power yoga, are very physical. Practicing one of these styles will help you improve muscle tone. Yoga also helps your body awareness. That helps you notice more quickly if you're slouching or slumping, so you can adjust your posture. Yoga usually involves paying attention to your breath, which can help you relax. It may also call for specific breathing techniques. Yoga has long been known to lower blood pressure and slow the heart rate. A slower heart rate can benefit people with high blood pressure or heart disease (Sarley, D, 1999) [9].

Psychology addresses the cognitive, perceptual, emotional, and behavioral aspects performance in extreme conditions. Operational and clinical challenges like crisis intervention and stress management remain the same for both, and hence can cross contribute to each other (Miller, 2008) [7]. Stress is the body's automatic response to any physical or mental demand placed on it. Every one of us irrespective of our age, sex, education, occupation, socio-economic status, whether lives in rural or urban area face stress. Stress effect body, mind, behavior in many ways and everyone experiences stress differently. The stress adversely affects a wide range of health condition and yoga is the most comprehensive approach to fighting stress (MeghnandiniKhandare, & Ritu Wadhwa. 2014) [5].

Corresponding Author:**M Rangarajan**

Research Scholar, Centre for
Yoga Studies, Annamalai
University, Annamalai Nagar,
Tamil Nadu, India

Yoga is a way of improving our self & understanding our internal state. Yoga improves attention and emotional control as well as affects the nervous system, making the parasympathetic nervous system more dominant and stabilizing the autonomic nervous system to enhance resistance to the effect of stress. Yoga practices including asanas, slow breathing, meditation, increases activation of peripheral nervous system & lead to mental relaxation. The present study includes Yoga Mudra practice with the asana pranayama will be the new approach towards the stress reduction.

India's paramilitary is the largest force in the world including various other armed force including such as Assam Rifles, Border Security Force, Central Industrial Security Force, Central Reserve Police Force, Indo-Tibetan Border Police, National Security Guard, Force, Sashastra, Special Frontier Force and Special Protection Group. These forces have given employment to whomever willingly to join serve for the nation. While young age they are very actively joined and completed their basic training. The service is bestowing but their lifestyle is slowly changing some time climatic changes, irregular food habits and family separation, some important issues not solving in exact occasion in their family, not presence essential functions or poignant situation in their family. They are therefore prone to depression. Because of stress they will not eat properly and will not sleep properly they will always think about family. As a result, they indirectly suffered high blood pressure and suddenly attacked them. Therefore, some yogasana, pranayama, mudra and meditation very helpful to control stress by regular practicing will get fruitful result.

Methodology

To achieve this purpose, forty five paramilitary personnel were randomly selected as subject from group center and headquarters of 2nd signal battalion, central reserve police force (CRPF), Hyderabad, Telangana State, India as subjects. The selected subjects age, height and weight range were 39±6 years, 171±11 cm and 75±14 kg respectively. The average blood pressure of selected subjects observed 136±4 as systolic blood pressure and 85±2 as diastolic blood pressure; therefore the selected subjects were identified as hypertensive persons. They were randomly split into four equal groups, and all groups contains of fifteen (n=15) subjects in each, in which

they known as group I asana with mudra group, group II pranayama with mudra group and group III asana pranayama with mudra group. The group IV would be considered as control group, which did not undergo any specific training program except their regular activities. The stress was selected as criterion variable and the same evaluate using Perceived Stress Scale as referred by Cohen, Kamarck, & Mermelstein, 1994 [3]. The validity and the reliability of the selected questionnaire already measured followed by standardized procedure. The whole experimental program was implemented for six days per week for twelve weeks. In every day training session, the practice lasted approximately between forty-five minutes and an hour, which included warming up and relaxation. Under yogasanas, a batch of twelve asanas, which are commonly called of Suryanamaskar was given to the subjects, followed by Tadasana, Trikona asana, Paschimottanasana Virabhadrasana, Naukasana, Sedu Bandhasana, Uttanasana, Chakrasana, Dhanurasana Halasana and Salabhasana. The pranayama practices such as nadisodhana, bastrika, kabalapathi and bharmari were practice with 2 to 5 sets of 5 to 15 repetitions increased every 3 weeks respectively. Shanmuki Mudra, Aswini Mudra, Brahma Mudra, Bhujangini Mudra, Viparita Karani followed as mudra practice. All the subjects of the four groups were tested on criterion variables at prior to and immediately after the training program for significance by applying independent 't' test to find the initial and final mean differences on each variables. The analysis of variance (ANOVA) was used to find the difference among the group if the difference on initial and final mean. After eliminating the influence of pre-test, the adjusted post-test means of experimental groups were tested for significance by using ANCOVA. In addition to this, Scheffe post-hoc test will be employed, when the F-ratio of the adjusted post-test means is significant, to find out the paired mean difference if any among the groups for each variable, separately. Further the magnitude of improvement between pre and post data of experimental groups and control group assess by using percentage calculation on selected criterion variables. The level of confidence is fixed at 0.05, for significance. The data on selected criterion variables were analyses using IBM SPSS software version 21.0.

Results

Table 1: Independent 't' test among experimental and control group on stress

	Pre Test		Post Test		df	't' Ratio	Sig.
	Mean	Sd	Mean	Sd			
Asana with Mudra Group	22.20	0.86	13.73	0.70	28	29.47*	0.000
Pranayama with Mudra Group	22.06	0.88	11.87	0.74	28	34.21*	0.000
Asana Pranayama with Mudra Group	22.27	0.70	11.27	0.59	28	46.27*	0.000
Control Group	22.07	0.88	21.47	0.74	28	2.01	0.054

*Significant at 0.05 level

The results on above table indicate that the experimental group's shows significant reduction on stress due to respective asana pranayama with mudra practice protocol,

whereas, control group had in-significant on stress reduction among paramilitary personnel.

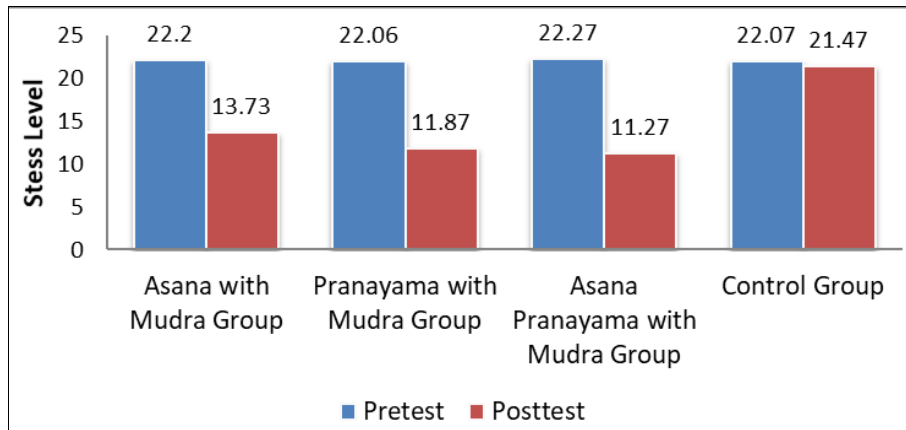


Fig 1: The pre test and post mean values on selected variables

Table 2: Analysis of covariance and magnitude of improvement among experimental and control group on stress

Test		Asana with Mudra	Pranayama with Mudra	Asana Pranayama with mudra	Control Group	SOV	SS	df	MS	F
Pretest	Mean	22.22	22.06	22.26	22.06	B	0.45	3	0.15	0.214
	SD	0.861	0.883	0.703	0.883	W	39.20	56	0.70	
Posttest	Mean	13.73	11.86	11.26	21.46	B	997.25	3	332.41	681.04*
	SD	0.703	0.743	0.593	0.743	W	27.333	56	0.488	
Adjusted Posttest	Mean	13.74	11.86	11.27	21.46	B	991.71	3	330.57	673.31*
Magnitude of Improvement (%)		61.71%	86.00%	97.51%	2.79%	W	27.003	55	0.491	

*Significant (The table values of df 3 and 56 & 3 and 55 was 2.769, 2.773 respectively)

The result of above table shows that, there was a significant difference among asana with mudra group, pranayama with mudra group, asana pranayama with mudra group and control group on stress among paramilitary personnel. Since, the

obtained 'F' value found significant, the scheffe post hoc test was applied to find out the paired mean difference presented in table III.

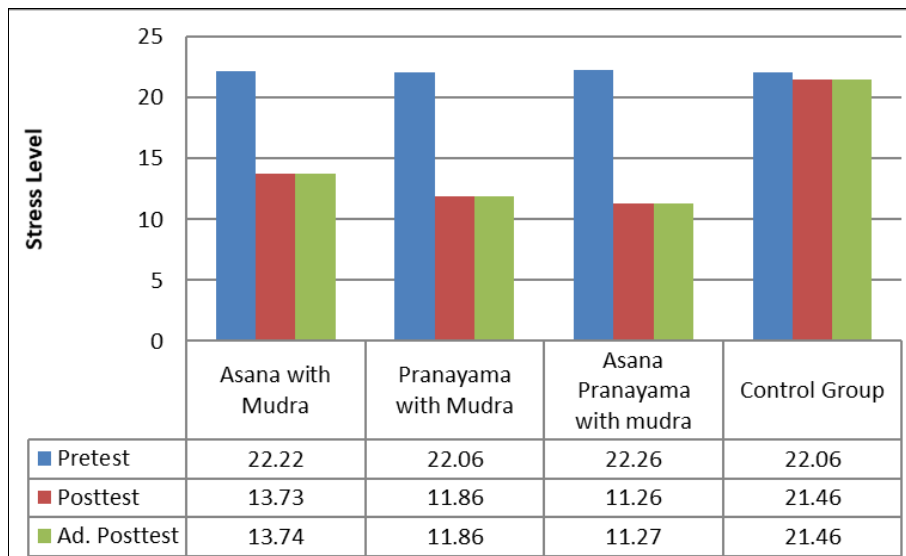


Fig 2: The bar diagram shows the pre test post test and adjusted post test mean values on stress

Table 3: Scheffe post hoc test on paired mean among experimental and control group on stress

Test/Group	Asana Mudra Vs Pranayama Mudra	Asana Mudra Vs Asana Pranayama Mudra	Asana Mudra Vs Control Group	Pranayama Mudra Vs Asana Pranayama Mudra	Pranayama Mudra Vs Control Group	Asana Pranayama Mudra Vs Control Group
Mean Difference	1.88*	2.46*	7.72*	0.582	9.60*	10.18*
P Value	0.000	0.000	0.000	0.027	0.000	0.000

*Significance at 0.05

The result on paired mean difference shows that the experimental groups show better reduction on stress when compared with control group. The results of study show that

the asana with mudra group, pranayama with mudra group, asana pranayama with mudra group had better reduction on stress among paramilitary personnel. The table also shows

that there was an insignificant difference on stress between pranayama with mudra group and asana pranayama with mudra group. However, the improvement was in favor of

asana pranayama with mudra group when compare with rest of the experimental groups.

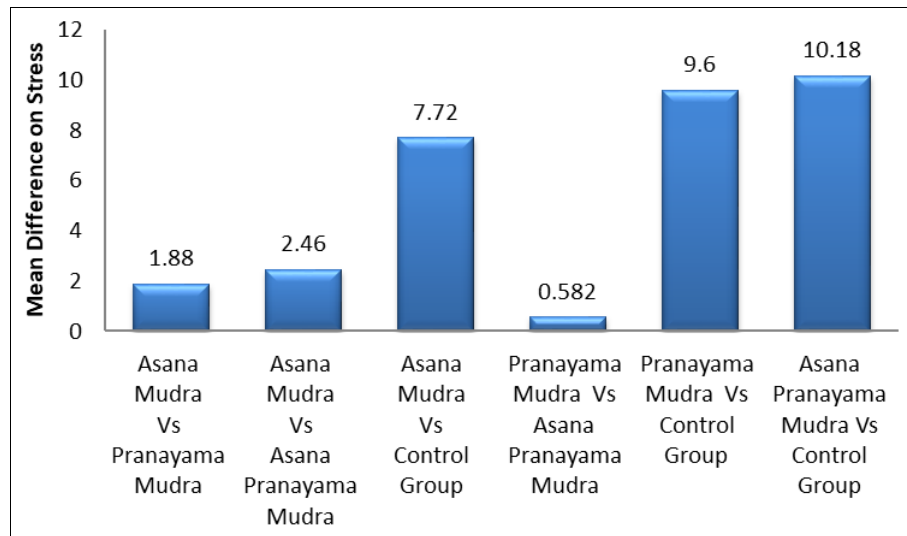


Fig 3: The bar diagram shows the paired mean difference among experimental and control group on stress

Discussion

The result on present study reveals that the stress among paramilitary personnel managed with asana pranayama with mudra practices. Therefore, the result was discussed with previous research results to identify the correlation with the same on logical manner as follows. The Indian military faces issues and problems relating to morale, motivation, job-satisfaction, job-stress, leadership behavior, organizational climate, beliefs, attitudes, value systems, training, Communication, conflict and negotiation. Various principles have been developed for the enhancement of motivation and morale of the troops. The problems of indiscipline and the remedial measures to inculcate discipline have also been investigated. Psychosocial correlates of stress and techniques for its effective management have been thoroughly studied and self-help guides have been developed for the soldiers as well as officers (Kama Raju & Singh, 2006; Misra, Asnani, & Archana, 2006) [8].

Man power policy making and there is a need to enhance the capabilities for proactive preparedness by developing threat detection systems, prediction and forecast models. Expertise needs to be developed for managing and reducing the ill-effects of various stressors faced by the military personnel. Ways of evolving and training effective leaders who are adept at handling such crises is also a challenge. The expertise developed by Military Psychology in dealing with and managing the psychological aftereffects of disaster and trauma needs to be broadened. The benefit of such expertise has to percolate to the civil populations, not only or managing the disaster post-event, but with the aim of enhancing the resilience, to better face the stress and minimize the trauma (Miller, 2008 and Banerjee, 2015) [7, 11].

Yoganidra is recognized as a beneficial art and means of relaxation. It is known that the practice of Yoganidra creates a deep rest by improving physical, sensory and mental equilibrium and control. This ultimately helps to have a counterfoil to existing stress, pressure or tension. A study conducted by Kamakhya Kumar (2004) [6]. As we know that such recitations contribute to create the positive stimulation and vibration in on nerve plexus and chakras whereas concentration on meaning of mantra may encourage to

positive thinking. This is

because the participants may experience reduction of stress level. An earlier research conducted by Bhogal *et al.*, (2004) [2] is in harmony with this finding which reported that Omkar and Gayatriasana pranayama with mudra recitation caused significant reduction on neuroticism among paramilitary personnel. Thus, it was observed that asana pranayama with mudra practice had significant contribution for reducing stress level. Moreover, the subjective feelings of participant were also supportive the result.

Conclusion

It may be concluded that the asana pranayama with mudra practice has highly positive impact in the management of stress. The strong need is that the various aspects of yogic practices may suitably be embraced as a part of regular training particularly among the paramilitary personnel. This finding also encourages there is a scope to carry out the various research studies in this regard.

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