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

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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 warming 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 of 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) [9]. 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].

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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 the parasympathetic nervous system & leads 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 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 thing about family. As a result, they indirectly suffered high blood pressure and suddenly attacked them. Therefore, some yogasana, pranayama, mudra and mediation 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

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.
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.

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

<table>
<thead>
<tr>
<th>Test/Group</th>
<th>Asana Mudra Vs Pranayama Mudra</th>
<th>Asana Mudra Vs Asana Pranayama Mudra</th>
<th>Asana Mudra Vs Control Group</th>
<th>Pranayama Mudra Vs Asana Pranayama Mudra</th>
<th>Pranayama Mudra Vs Control Group</th>
<th>Asana Pranayama Mudra Vs Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Difference</td>
<td>1.88*</td>
<td>2.46*</td>
<td>7.72*</td>
<td>0.582</td>
<td>9.60*</td>
<td>10.18*</td>
</tr>
<tr>
<td>P Value</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.027</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

*Significance at 0.05
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.

**Discussion**

The result on present study reviles 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) [1].

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) [9]. 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) [10] 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.

**Acknowledgment**

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**References**


