

1. Effect of Selected Yogic Practices on Stress and Emotion Regulation Among the Indian Army Soldiers

Dhanasivamani D.

Research Scholar,
Centre for Yoga Studies,
Annamalai University, Chidambaram, Tamil Nadu.

Dr. P. Senthil

Research Guide, Assistant Professor,
Department of Physical Education,
Annamalai University, Chidambaram, Tamil Nadu, India.

Dr. S. Selvalakshmi

Co-Guide, Associate Professor,
Tamil Nadu Physical Education and Sports University,
Chennai, Tamilnadi, India.

Dr. K. Venkatachalapathy

Assistant Professor of Centre for Yoga Studies and Director i/c,
Centre for Yoga Studies, Annamalai University,
Chidambaram, Tamil Nadu, India.

Abstract:

The purpose of the study was to find out the effect of selected yogic practices on stress and emotional regulation among the Indian army soldiers. The study was conducted on 40 Indian Army Soldiers. Totally two group's namely experimental group and control group consisting of 20 students in each group who underwent ten weeks of yoga practices whereas the control group did not undergo any type of training. The stress and emotional regulation were measured before and after the experimentation using the standardized questionnaires and analyzed by Analysis of Covariance (ANCOVA) and it was concluded that the yoga practices had significant ($P < 0.05$) effect on the stress and emotional regulation. There is a need for yoga, systematic relaxation, and meditation not only in the joint force and in veteran populations, but as part of coherent, comprehensive national security framework.

Not only do government officials need these services, stakeholders working beside the Government. Based on the results it was concluded that yoga practices were effective than the control group in decreasing stress and increasing the emotional regulation among Indian Army Soldiers.

Keywords:

yoga, asana, psychological, yogasana, pranayama, stress, emotional regulation, Indian army soldiers

1.1 Introduction:

Many people consider yoga to be a peaceful pastime for people looking for a gentle way to tone up and improve general health. However, the Indian Army is considering adopting yoga practice after a trial showed that it improves strength, flexibility and balance in its soldiers, and makes a stronger fighting force. Yoga does not have a hard man image; it is difficult to envisage a troop of soldiers doing daily yoga practice as part of their military training. However, the recent experiment by the Indian Army showed that after three months new soldiers of the Bengal Engineering Group who did 50 minutes of yoga a day combined with 40 minutes of traditional exercise had steadier hands, stronger grips and leaner muscles than peers who underwent a 90-minute military workout instead. The yoga group showed an improvement in activities requiring co-ordination and concentration as well-as muscular strength and endurance,” according to the project analyst, Shirley Telles. “This would be especially useful for activities such as shooting. Post-Traumatic stress disorder (PTSD) is an anxiety disorder that can occur after the Soldiers experiences a traumatic event. During this type of event, the Soldiers believes his/her life or others' lives are in danger. She/he may feel afraid or feel that they have no control over what is happening. Anyone who has gone through a life-threatening event can develop PTSD. These events can include Combat or military exposure, Child sexual or physical abuse, Terrorist attacks, Sexual or physical assault, Serious accidents, such as a car wreck, Natural disasters, such as a fire, tornado, hurricane, flood, or earthquake. After the event, the Soldiers may feel scared, confused, or angry. If these feelings don't go away or they get worse, the symptoms may disrupt the person’s life, making it hard to continue daily activities.

All Soldiers with PTSD have lived through a traumatic event that caused them to fear for their lives, see horrible things, and feel helpless. Strong emotions caused by the event create changes in the brain that may result in PTSD. Most Soldiers who go through a traumatic event have some symptoms at the beginning. Yet only some will develop PTSD; the reason for this is not clear. How likely someone is to get.

Yoga helps them both mentally and physically. It provides them with mental strength to continue to operate rationally in stressful conditions, and it also helps improve their martial skills. One of the easiest ways to incorporate yoga into a daily routine is to perform the sun salutation. Yoga is a holistic science of life, which deals with physical, mental, emotional, and spiritual health. Yoga practices increase physical fitness, discipline the mind, make

you more focused and confident, cure health disorders, and give you a calmed and relaxed mind, which are equally, if not more, relevant to the Army personnel. There is no doubt that the normal PT schedule improves flexibility, endurance, etc.; but a one-hour Yoga program – consisting of Asanas, Pranayamas, Prayer (Omkar and Gayatri Mantra Chanting) and Yoga-nidra practice will have great effects on the autonomic equilibrium between the sympathetic and parasympathetic nervous systems. These systems modulate, and optimize, sympathetic activity in stressful situations, and immediately restore equilibrium.

Due to the substantial and growing problem of mental health issues, chronic pain, and other chronic conditions in military personnel and veterans, the Department of Defense (DoD) and the Department of Veterans Affairs (VA) are increasingly incorporating complementary and integrative health (CIH) approaches into their patient-centered plans of care, a development that promises to more comprehensively address these growing problems.^{10–12} While this expansion provides a great opportunity to demonstrate the usefulness of integrative health at a healthcare system level, there is variability in the evidence supporting CIH services for different health conditions. Much more research is needed to ensure that integrative modalities are included in ways that maximize their effectiveness. Yoga is an example of an integrative approach that may be ideally suited for co-occurring conditions including chronic pain and mental health symptoms. Yoga is multidimensional and combines physical, mental, and, often, spiritual aspects of treatment. The benefits of yoga have been demonstrated among non-veteran^{13,14} and veteran

Research Gains on Sports Training

populations^{15,16} with chronic low back pain, and promising results have been found for other conditions experienced by military personnel and veterans, including combat stress¹⁷ and PTSD.^{18,19} Other recent studies of yoga for PTSD remain quite small,^{20,21} but many researchers await the results of a full-scale VA-funded randomized controlled trial, which are expected in 2018.²² However, further study of yoga as a treatment option for veterans and military personnel with mental health and chronic pain disorders is needed.

Yoga interventions vary quite widely in the components that are emphasized and the setting in which they are conducted.^{23,24} Thus, it is important to determine not only what types of yoga are best for specific health conditions, but also what barriers and facilitators may exist for greater uptake of yoga and other CIH modalities by specific populations, namely among military personnel and veterans.

One recent study identified such barriers for non-pharmacological treatments more broadly, finding that patients were concerned about cost, transportation, and motivation to be active, while healthcare providers noted existing opioid use and patient skepticism as probable barriers.²⁵ Our objective in this qualitative study was to explore the attitudes and perspectives of military veterans and current military personnel toward yoga as a CIH therapeutic modality, in order to better plan for and support the provision of yoga to military populations.

The Indian military is turning to yoga to counter Soldiers' stress, fatigue and monotony as well as a worrying pattern of suicide among its ranks. In a message to lawmakers in January 2019 concerning the alarming number of suicides in the military, Minister of State for Defense Subhash Bhamre cited yoga and meditation among the measures to be taken "to ensure that members of the Armed Forces are given a healthy and appropriate environment."

Complementary and alternative therapies such as yoga and mindful meditation increasingly are being combined with social work practice to enhance therapeutic benefits. A lesser-known yoga technique called yoga nidra recently has gained the attention of social workers after positive results were reported for veterans with PTSD. Though yoga nidra often is compared with relaxation or meditation, it involves more than the traditional relaxation conducted at the end of yoga classes or the mindful meditation used by some therapists.

1.2 Need of the Study:

In the Indian Army, unfortunately, occupation related stress and associated hazards are increasing day by day. Various statistical surveys show that the prevalence of stress among Army personnel have been causing many harmful impacts on the society, which is a warning that cannot be ignored.

“Every third day a soldier commits suicide and every tenth day another is killed by a colleague running amok. The growing stress level resulting in mental illness, resulting in suicide and killing of fellow soldiers have caused an alarm among the army forces (**Tribune News, 2007**).

1.3 Objective of the Study:

The research work has been carried out with the following objectives in perspective:

- To evaluate the level of stress among Army personnel.
- To suggest remitted to improve the stress coping mechanisms of army personnel.
- To find out the impact of yoga on stress.

Statement of the Problem: The purpose of the study is to find the effect of selected yogic practices on stress and emotional regulation among the Indian army soldiers.

1.4 Review of Literature:

Brinsley J et al. (2020) studies the effects of yoga on depressive symptoms in people with mental disorders: a systematic review and meta-analysis. To assess whether physically active yoga is superior to waitlist control, treatment as usual and attention control in alleviating depressive symptoms in people with a diagnosed mental disorder recognized by the Diagnostic and Statistical Manual of Mental Disorders (DSM).

Systematic review and meta-analysis following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Data were obtained from online databases (MEDLINE, EMBASE, Psych INFO, CENTRAL, EMCARE, PEDro).

Research Gains on Sports Training

The search and collection of eligible studies was conducted up to 14 May 2019 (PROSPERO registration No CRD42018090441). We included randomized controlled trials with a yoga intervention comprising $\geq 50\%$ physical activity in adults with a recognized diagnosed mental disorder according to DSM-3, 4 or 5. 19 studies were included in the review (1080 participants) and 13 studies were included in the meta-analysis (632 participants).

Disorders of depression, post- traumatic stress, schizophrenia, anxiety, alcohol dependence and bipolar were included. Yoga showed greater reductions in depressive symptoms than waitlist, treatment as usual and attention control (standardized mean difference=0.41; 95% CI -0.65 to -0.17 ; $p < 0.001$). Greater reductions in depressive symptoms were associated with higher frequency of yoga sessions per week ($\beta = -0.44$, $p < 0.01$).

Feifei Wang and Attila Szabo (2020) investigated the effects of Yoga on Stress among Healthy Adults: A Systematic Review. Yoga was recommended in both clinical and nonclinical populations as therapy methods. The diversity of yoga practice as a therapy method has rarely been discussed and it is essential to address the effects of yoga on stress. This article aims to investigate the effect of different types of yoga on stress in healthy population.

On the other hand, the authors intended to figure out yoga effects on stress systematically. A systematic literature review was conducted to identify articles that assess the effect of yoga and yoga-related interventions on stress reduction in nonclinical populations. Studies were classified according to the length of the intervention, yoga type, and measures of outcome. The studies were selected throughout last 5 years (January 2014 to November 2018) by using the key searching term yoga and stress incorporation with tension and pressure.

The selection process followed the Prisma flow diagram. Totally, 12 articles elaborating on the effects of yoga or yoga-related interventions on stress management and remission were included in the review. This review included various types of yoga practice (e.g., Hatha yoga, Bikram yoga, Kundalini yoga, Sudarshan Kriya yoga, Kripalu yoga, Yin yoga). A time spectrum was conducted from 4 wks to 28 wks.

This review revealed that most types of yoga have positive effects on stress reduction in healthy populations. Further studies are recommended to examine the long-term effect of yoga and underlying psychological mechanisms causing stress and mental restraint. In addition, it is suggested to consider age as a risk factor affecting the effect of yoga on stress.

Josefien J. F. Breedvelt et.al, (2019) The Effects of Meditation, Yoga, and Mindfulness on Depression, Anxiety, and Stress in Tertiary Education Students: A Meta-Analysis. Meditation, yoga, and mindfulness are popular interventions at universities and tertiary education institutes to improve mental health.

However, the effects on depression, anxiety, and stress are unclear. This study assessed the effectiveness of meditation, yoga, and mindfulness on symptoms of depression, anxiety, and stress in tertiary education students.

After retrieving 181 papers for full-text screening, 24 randomized controlled trials were included in the qualitative analysis. We conducted a random-effects meta-analysis amongst 23 studies with 1,373 participants. At post-test, after exclusion of outliers, effect sizes for depression, $g = 0.42$ (95% CI: 0.16–0.69), anxiety $g = 0.46$ (95% CI: 0.34–0.59), stress $g = 0.42$ (95% CI: 0.27–0.57) were moderate. Heterogeneity was low ($I^2 = 6\%$). When compared to active control, the effect decreased to $g = 0.13$ (95% CI: –0.18–0.43). No RCT reported on safety, only two studies reported on academic achievement, most studies had a high risk of bias. Most studies were of poor quality and results should be interpreted with caution.

Overall moderate effects were found which decreased substantially when interventions were compared to active control. It is unclear whether meditation, yoga or mindfulness affect academic achievement or affect have any negative side effects.

1.5 Methodology:

For the present study 40 Indian army soldiers were selected from Chennai. All the subjects were assigned to experimental group who underwent yoga practices consisting of 20 subjects and control group no practice consisting 20 subjects.

The experimental group practiced for ten weeks for five days per weeks. The yoga practices were given to the experimental group included Yoga mudrasana, Triyak bhujangasana, Padanusthasana, Garudasana, Thalassana, Vashisthasana, Ekapadasana, Sasangasana, Halasana, Naukasana, Seethali, Seetkari, Nadi sudhi, Bhramari, Nada anusandhana, OM kara recitation, Yoga nidra.

The psychological variables stress and emotional regulation was measured by questionnaire.

1.6 Results and Discussions:

The data pertaining to the variables collected from the two groups before and after the training period were statistically analyzed by using Analysis of Covariance (ANCOVA) to determine the significant difference and tested at 0.05 level of significance.

The following tables illustrate the statistical result of the effect of selected yogic practices on stress and emotional regulation among the Indian army soldiers.

Table 1.1: Computation of Analysis of Covariance on Stress

| | Experimenta l Group | Control Group | Source of Variance | Sum of Square s | df | Mean Square s | Obtained F |
|--------------------------------|---------------------|---------------|--------------------|-----------------|----|---------------|----------------|
| Pre-Test Mean | 27.35 | 27.45 | B | 0.1 | 1 | 0.1 | 0.05 |
| | | | W | 75.5 | 38 | 1.95 | |
| Post Test Mean | 20.92 | 27.55 | B | 435.6 | 1 | 435.6 | 223.99* |
| | | | W | 73.9 | 38 | 1.94 | |
| Adjusted Post Test Mean | 20.92 | 27.54 | B | 434.25 | 1 | 434.2 | 218.18* |
| | | | W | 73.64 | 37 | 1.99 | |

* Significant at 0.05 level Table F-ratio at 0.05 level of confidence for 1 and 38 (df) = 4.10, 1 and 37 (df) = 4.11

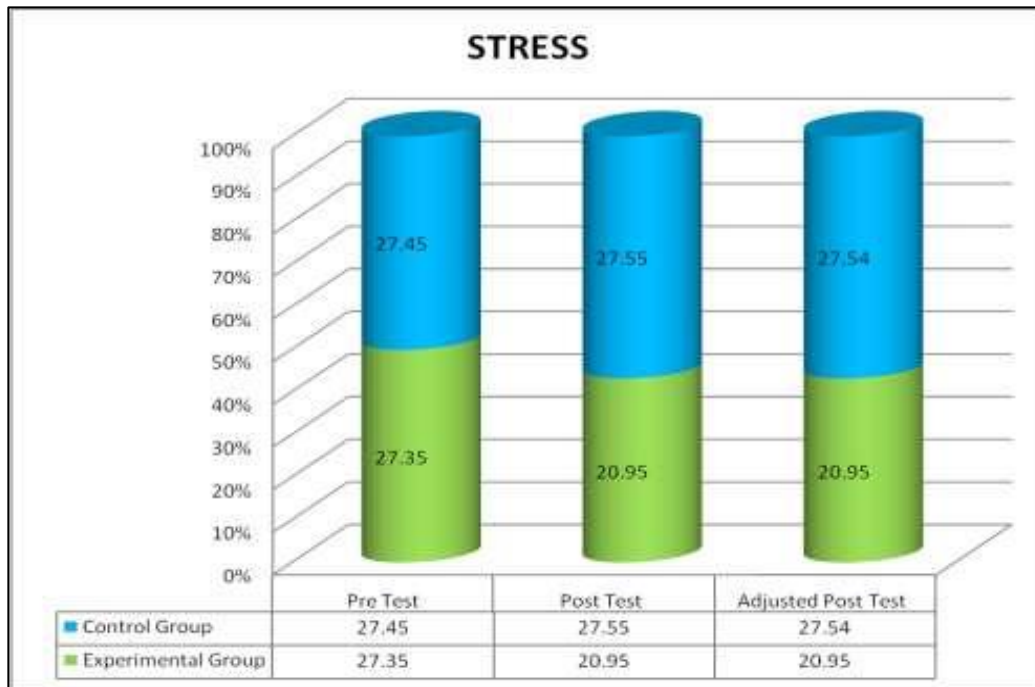


Figure 1.1: Bar Diagram on Ordered Adjusted Means of Stress

1.7 Results of Stress:

The analysis of covariance of stress data between pre-test and post-test of the two groups have been presented in Table I. Table I shows the analysis of covariance of stress. The pre-test means of experimental group and control group were 27.35 and 27.45 respectively. Since the obtained F-ratio of 0.05 is lower than the table value, F-ratio of 4.10, the pre-test means were not significant at 0.05 level of confidence with the degrees of freedom 1 and 38. The posttest means of experimental group and control group were 20.95 and 27.55 respectively. The obtained F-ratio of 223.99 is seen to be higher than the table F-ratio of 4.10. Hence, the differences among the post-test means were significant at 0.05 level of confidence with degrees of freedom 1 and 38. The adjusted post-test means of experimental group and control group were 20.95 and 27.54 respectively. Since the obtained F-ratio of 218.18 is higher than the table F-ratio of 4.11 the adjusted post-test mean difference amount the two groups were significant at 0.05 level of confidence with the degrees of freedom 1 and 37. There was significant difference in between control and experimental groups and within the experimental group.

Table 1.1: Computation of Analysis on Emotional Regulation

| | Experimental Group I | Control Group II | Source of Variance | Sum of Squares | df | Mean Squares | Obtained F |
|--------------------------------|----------------------|------------------|--------------------|----------------|----|--------------|----------------|
| Pre-Test Mean | 36.05 | 35.9 | B | 0.225 | 1 | 0.225 | 0.06 |
| | | | W | 136.75 | 38 | 3.59 | |
| Post Test Mean | 41.85 | 35.55 | B | 396.9 | 1 | 396.9 | 151.58* |
| | | | W | 99.5 | 38 | 2.61 | |
| Adjusted Post Test Mean | 41.83 | 35.56 | B | 391.98 | 1 | 391.94 | 157.02* |
| | | | W | 92.35 | 37 | 2.49 | |

Significant at 0.05 level Table F-ratio at 0.05 level of confidence for 1 and 38 (df) = 4.10, 1 and 37 (df) = 4.11

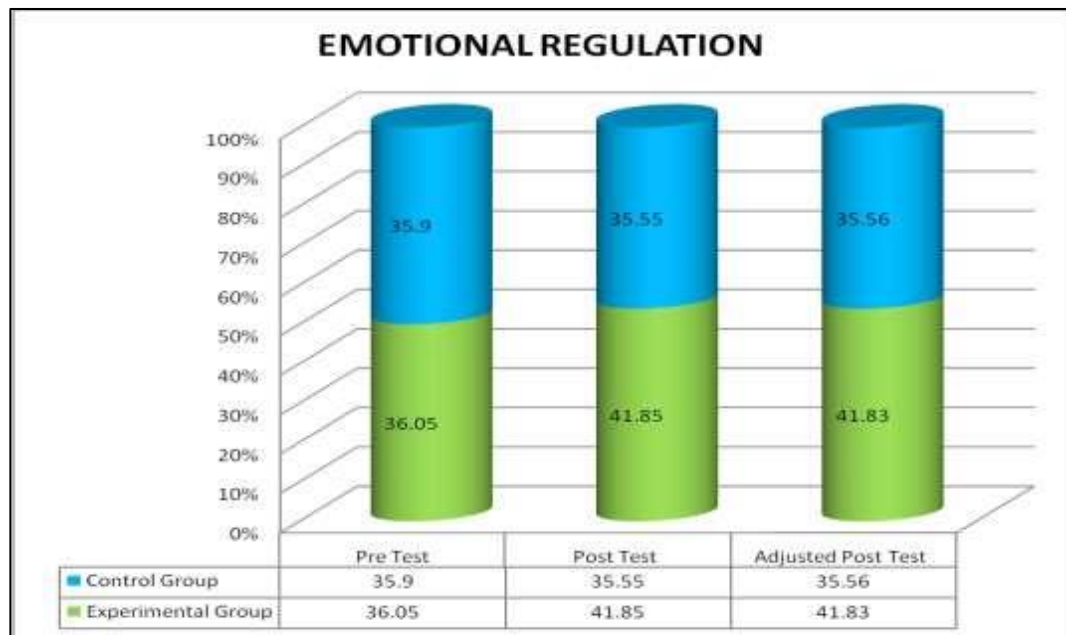


Figure 1.2: Bar Diagram on Ordered Adjusted Means of Emotional Regulation

1.8 Results of Emotional Regulation:

The analysis of covariance of emotional regulation data between pre-test and post-test of the two groups have been presented in Table II. Table II shows the analysis of covariance of emotional regulation. The pre-test means of experimental group and control group were 36.05 and 35.9 respectively. Since the obtained F-ratio of 0.06 is lower than the table value, F-ratio of 4.10, the pre-test means were not significant at 0.05 level of confidence with the degrees of freedom 1 and 38. The posttest means of experimental group and control group were 41.85 and 35.55 respectively. The obtained F- ratio of 151.58 is seen to be higher than the table F-ratio of 4.10. Hence, the differences among the post- test means were significant at 0.05 level of confidence with degrees of freedom 1 and 38. The adjusted post-test means of experimental group and control group were 41.83 and 35.56 respectively. Since the obtained F-ratio of 157.02 is higher than the table F-ratio of 4.11 the adjusted post-test mean difference amount the two groups were significant at 0.05 level of confidence with the degrees of freedom 1 and 37. There was significant difference in between control and experimental groups and within the experimental group.

1.9 Conclusion:

There is a need for yoga, systematic relaxation, and meditation not only in the joint force and in veteran populations, but as part of coherent, comprehensive national security framework. Not only do government officials need these services, but stakeholders also working beside the Government. Based on the results obtained, the following conclusion was drawn: It was concluded that yoga practices were effective than the control group in decreasing stress and increasing the emotional regulation among Indian Army Soldiers.

1.10 References:

1. Brinsley Jacinta, Felipe Schuch, Oscar Lederman, Danielle Girard, Matthew Smout, Maarten A Immink, Brendon Stubbs, Joseph Firth, Kade Davison. Effects of yoga on depressive symptoms in people with mental disorders: a systematic review and meta-analysis. British journal of sports medicine. <http://dx.doi.org/10.1136/bjsports-2019-101242>.

Research Gains on Sports Training

2. Feifei Wang, Attila Szabo. Effects of Yoga on Stress among Healthy Adults: A Systematic Review. *Altern Ther Health Med*. 2020 Jul;26(4):AT6214. PMID: 32088671.
3. Josefien J. F. Breedvelt, Yagmur Amanvermez, Mathias Harrer, Eirini Karyotaki, Simon Gilbody, Claudi L. H. Bockting, Pim Cuijpers and David D. Ebert. The Effects of Meditation, Yoga, and Mindfulness on Depression, Anxiety, and Stress in Tertiary Education Students: A Meta- Analysis. *Front Psychiatry*. 2019; 10 : 193. Published online 2019 Apr 24. doi: 10.3389/fpsy.2019.00193. PMID: 31068842. PMCID: PMC6491852.
4. Tribune News, Editorial (05-072007). Soldier in Stress, Ignore symptoms to court disaster. <http://www.tribuneindia.com/2007/2007/0705/edit.htm#1>. Accessed 24 Jan, 08