

The Effect of Sudarshan Kriya Yoga on Stress Levels in Young Information Technology Professionals in Bangalore

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Conflict of interest: Nil

Abstract

Background: The term “Stress” as used in biology refers to any change in the environment that changes or threatens to change an existing optimal steady state. IT professionals are exposed to higher professional stress. Pharmacological treatments for stress carry risk of dependence and adverse effects. Limited studies have been done on Sudarshan Kriya yoga for improving stress levels in IT professionals; hence this study is performed to evaluate the effect of yoga on stress in healthy young adults.

Objective: To evaluate the effect of Sudarshan Kriya yoga on stress scores in IT Professionals.

Materials and Methods: Study is an interventional study performed on 60 healthy young IT professionals aged 21-30 years; study was conducted from Bangalore Medical College and Research Institute from December 2018- December 2020. Subjects practiced Sudarshan Kriya at the yoga centre, the yoga was performed for 30 minutes daily on an empty stomach or 4 hours after food for a period of 12 weeks. A professional life stress scale was administered to assess stress level. Data were expressed as mean $\pm$ SD. A paired t-test was used for data analysis. P-value < 0.001 was considered significant.

Results: After 12 weeks of Sudarshan Kriya yoga practice, the professional life stress score decreased significantly from 20.58 ± 4.49 to 15.30 ± 2.8 ($p < 0.001$) indicating improved stress tolerance.

Conclusion: 12 weeks of Sudarshan Kriya yoga practice significantly reduced stress levels in young IT professionals. Yoga may be recommended as a safe, non-pharmacological intervention for occupational stress issues in young adults.

Keywords: Stress, Sudarshan Kriya Yoga, Professional Life Stress Scale, Young Adults.

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Introduction

The term “Stress” as used in biology refers to any change in the environment that changes or threatens to change an existing optimal steady state. Most of these stresses activate processes at the molecular, cellular or systemic level that tend to restore previous state. [1]

When an individual is under stress, signals from higher cortical centers send impulses to the hypothalamus to release corticotrophin releasing hormone. This hormone acts on anterior pituitary to release adrenocorticotrophic (ACTH) hormone which in turn stimulates the adrenal cortex to release glucocorticoids. Thus, stress is associated with an increase in the glucocorticoids in serum. [2] Information technology professionals suffer work related stress as their work involves meeting deadlines. In India, there are 2.8 million people who are directly employed and 8.9 million employed indirectly in the Information technology

industry. Kumar et al. conducted a study to examine the effects of Sudarshan Kriya yoga on serum cortisol levels. They found that serum cortisol levels were lower in those who had been practicing Sudarshan Kriya yoga. Hence we can surmise that those who had been practicing Sudarshan Kriya yoga had significantly lower cortisol levels than the controls.

Limited studies have been performed showing the effect of sudarshankriya yoga on stress levels in healthy IT professionals, hence this study aimed to evaluate the effect of yoga on stress [3].

Objective: To evaluate the effect of Sudarshan Kriya yoga on stress scores in IT Professionals.

Materials and Methods

The study was conducted on 60 young healthy adults between the age group of 21-30 years. The study and the control groups were age and gender

matched. The study was conducted in the department of physiology, Bangalore medical college and research institute after obtaining ethical clearance in the period of December 2018 to December 2020. Written informed consent from subjects was taken after explaining the study protocol. Subjects working in IT with Bachelors in engineering or Master of computer applications for more than 2 years and who are actively engaged in project works and recently joined in Sudarshan Kriya classes were included. Individuals with acute or chronic illness or those experiencing recent family bereavement during the study period were excluded from the study. Subjects who were pregnant, subjects on sedatives, antihistamines, hypnotics or taking energy drinks or nicotine to keep themselves awake were also excluded. History and detailed clinical examination along with anthropometry was done to rule out any abnormalities.

Sudarshan Kriyawaas taught to the subjects at a yoga centre, the subject's practised yoga for 30 mins daily on an empty stomach or 4 hours after food for a period of 12 weeks.

Stress was measured by professional stress scale by David Fontana. It consists of 24 questionnaires

which assess the level of stress in the IT professionals. Professional Life Stress Scale (PLSS) (British Psychological Society, 1989) is used to assess the level of stress that is experienced by the software professionals at work, by David Fontana. It has four ranges of scores: ≤ 15 (mild stress), 16-30 (moderate stress), 31-45 (high-stress is a clear problem) and 45-60 (very high-stress is a major problem). It consists of a total of 24 questions, out of which 11 are yes/no questions, 2 are self-evaluative questions, 10 questions are multiple choice and one question consists of 22 sub questions which are based on common features of life events and the individual has to agree or disagree with each statement⁴.

Statistical Analysis: Data were expressed as mean $\pm$ standard deviation (SD). A paired "t" test was performed to compare the means of two groups. P - Value less than 0.001 was considered significant.

Results

A total of 60 young adults were enrolled in study. The subjects were aged between the age group 21-30 years. There were 34 men and 26 women in the study. Table 1 show that there was no significant difference in the age and gender between the two groups.

Table 1: Age distribution of the study population:

Parameter	Mean $\pm$ SD
Age In Years	26.75 Years $\pm$ 2.11 Years

Table 2: Gender distribution of the study population:

	Number	Percent
Female	26.00	43.33%
Male	34.00	56.67%

Table 2 shows the gender distribution in the sample with 43.33% of the sample being female and male being 56.67%.

Table 3: Comparison of stress score by professional life stress scale before and after intervention of 3 months of Sudarshan Kriyayoga.

Assessment of stress by professional life stress scale by David Fontana.	Stress score before the Sudarshan Kriyayoga (n=60) Mean $\pm$ SD	Stress score after the Sudarshan Kriyayoga (n=60) Mean $\pm$ SD	P-value
Score	20.58 $\pm$ 4.49	15.30 $\pm$ 2.87	0.001*

*P value less than 0.05 is considered statistically significant.

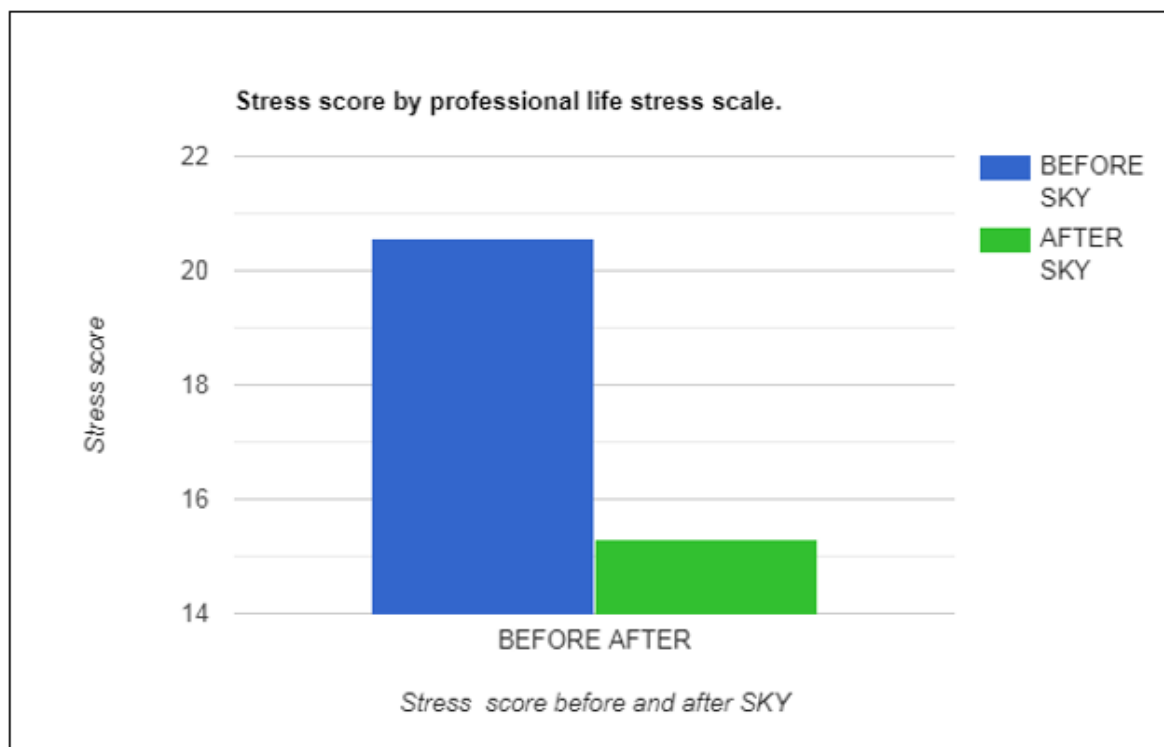


Figure 1: Comparison of stress score by professional life stress scale before and after intervention of 3 months of Sudarshan Kriyayoga.

Table 3 shows that the Sudarshan Kriya yoga practice showed significantly lower stress levels post-intervention, indicating a better stress tolerance.

Discussion

The aim of the study was to find the effect of 3 months of Sudarshan Kriya yoga practice on stress levels and cognition in young information technology professionals. The present study was done in the department of physiology at Bangalore medical college. The study was done in 26 females and 34 males between the age group of 21-30 years as shown in table and Figure [1,2].

The present study showed significant reduction in professional life stress score 20.58 ± 4.49 and 15.30 ± 2.87 before and after respectively after the intervention of Sudarshan Kriya yoga with P value < 0.001 as shown in table number 3 and graph 3.

Similar findings have been reported in study done by Sonu kumar et al where 6 months practice of Sudarshan Kriya yoga decreased serum cortisol level and alleviated stress [5].

Serum cortisol level is the marker of stress and inflammation. Higher cortisol level means high stress level. Sudarshan KriyaYoga is documented to reduce stress level in regular practitioners. The physiological basis is, yoga acts by down regulating the HPA axis which gets hyperactivated as a response to abnormal physical or psychological demand (stressor), resulting in

decreased sympathetic and increased parasympathetic activity of the nervous system [6].

Sippel et al. 2012 suggests that yoga activates the prefrontal cortex, which in turn stimulates hypothalamic oxytocin release; these results in reduced CRF expression and HPA axis activity, leading to the attenuation of stress [7]. Furthermore, Streeter et al. (2012) suggests that combining structured movement, meditation, and controlled breathing directly stimulates the vagus nerve, increased vagal signaling triggers a concomitant rise in central gamma-aminobutyric acid (GABA) levels. Because low GABA is linked to anxiety, this biochemical upregulation serves as a primary mechanism to counteract chronic stress [8].

Limitations

Limitations of this study include a small sample size $\{n=60\}$. Stress score was measured by a self-reported scoring method by recall method using professional life stress score without objective measures like serum cortisol levels. Further studies with large sample sizes are recommended.

Conclusion

Twelve weeks of Sudarshan Kriya Yoga significantly reduced stress ($p < 0.001$) by regulating the HPA axis and reducing CRF expression and also by increasing vagal signaling. Yoga can be recommended as a safe, non-pharmacological intervention.

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References

1. Barrett. KE, Barman SM, Boitano S, Brooks H. The adrenal Medulla and Adrenal Cortex. Ganong's Review of Medical Physiology. 24th edition, Tata McGraw Hill Edition 2012, 356p.
2. Bhui K, Dinos S, Galant-Miecznikowska M, de Jongh B, Stansfeld S. Perceptions of work stress causes and effective interventions in employees working in public, private and non-governmental organisations: a qualitative study. BJPsych bulletin. 2016 Dec; 40(6):318-25.
3. Bhat R, Shet P, Nayanthara A K, Vinodhini N, Anupama N, Bhagyalakshmi et al. Evaluation of Professional stress among software professionals in southindia.IJRSR.2014; 5(10), 1842-45.
4. Sadock BJ, Sadock VA. Kaplan & Sadock's concise textbook of clinical psychiatry. Lippincott Williams & Wilkins; 2008.
5. Kumar S, Kamal RB, Chawala K. Effect of "Sudarshan Kriya" on serum cortisol level before terminal examination in undergraduate medical students.IJAR. 2017; 3(7):533-5.
6. Singh VP, Khandelwal B, Sherpa NT. Psycho-neuro-endocrine-immune mechanisms of action of yoga in type II diabetes. Ancient science of life. 2015 Jul; 35(1):12.
7. Sippel LM, Allington CE, Pietrzak RH, Harpaz-Rotem I, Mayes LC, Olff M. Oxytocin and stress-related disorders: neurobiological mechanisms and treatment opportunities. Chronic stress. 2017 Feb; 1:24705470166879 96
8. Streeter, C. C., Gerbarg, P., Saper, R. B., Ciraulo, D. A., & Brown, R. P. (2012). Effects yoga on the autonomic nervous system, gamma-aminobutyric acid, and allostatic load in a-theory-based model. Medical Hypotheses, 78(5), 571-579. doi.org.