



WORK-RELATED STRESS AMONG WOMEN SOFTWARE EMPLOYEES: ROLE OF YOGA

Physiology

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ABSTRACT

High salaries and social status associated with the IT sector has attracted women to take up these jobs. But on the other hand, the nature of job in IT industry has a negative impact on the employee's physical and mental health. Fewer studies have been carried out on health problems generated due to stress among women in IT industry, hence the present study is attempted to see the effect of yoga on professional stress seen in women software engineers. Study was done on 52 software engineers, of which yoga group comprised women who were undergoing regular yoga training of 1 hour duration for past 6 months. 26 subjects who were not practicing yoga were included in non Yoga group. Professional stress was assessed with Professional Life Stress Scale. Paired t test was done to compare the stress levels. The stress score was significantly less in yoga group compared to non Yoga group, who had stress score in the range of problematic stress.

KEYWORDS

Yoga, work-related stress, working women, software employees.

INTRODUCTION

IT has become the career option of choice for many young educated Indians. ¹High salaries and social status associated with the IT sector has attracted women to take up these jobs, but many suffer on account of various factors like late working hours. Covering 150 women in the IT sector and 50 others in allied areas, the study found that long working hours at the desk and job related pressure creates a lot of physical and mental stress. ²

Stress is one of the major factors associated with sickness absence. Although there are many environmental, psychological and physical determinants of sickness absence, ^{3,4} the Health and Safety Executive reported that in 2011, 10.8 million working days were lost due to work-related stress. ⁵ Although recent research suggests that yoga can be effective for reducing stress, ⁶ no studies have concentrated on women of software industry who are always under high levels of stress. ¹

Stress is only harmful when it becomes overwhelming and interrupts the healthy state of equilibrium. Stress jacks up the nervous system, overburdens the adrenal glands and lowers immunity. ⁷ Stress causes an imbalance of the parasympathetic and sympathetic nervous system due to psychic stimuli which lead to disturbances of homeostasis in the body. Here comes the role of yoga which not only improves the physical stress but also the mental stress. It also helps in establishing equilibrium between the sympathetic and parasympathetic components. ⁸ Fewer studies have been carried out on health problems generated due to stress among women in IT industry, hence the present study is attempted to see the effect of yoga on professional stress seen in women software engineers.

MATERIAL AND METHODOLOGY

26 Female software engineers working in different software companies, aged 25–50 years from one of the yoga training centre in Bengaluru, who were undergoing regular yoga training of 1 hour duration for past 6 months, were recruited for the study and were included in Yoga group. 1 hour Yoga training consisted of Mild worm up exercise for 4 minutes, Surya Namaskar for 15 minutes, Asanas for 15 minutes, Pranayama for 20 minutes and Meditation for 5 minutes. 26 Female software engineers from same software companies, in the same age group who were not practicing yoga were also recruited for the study and were included in non Yoga group. Working hours varied between 6–8 hours per day for all 52 subjects. Both the group subjects did not have history of daily exercise or any other physical training.

General physical examination was done. History of irregular menstrual cycle, history suggestive of neurological abnormalities, endocrinal disorders, Drugs acting on Central Nervous System like antipsychotics, antidepressants, sedative-hypnotics were excluded from the study. It was further confirmed that the subjects had not taken hormones, alcohol, oral contraceptives, or other reserve medicine within 24 hrs.

Subjects were then given a participant information sheet and a consent form. After reading the participant information sheet, employees were

instructed to sign the consent form and complete the Professional Life Stress Scale (PLSS).

Professional Life Stress Scale:

PLSS was developed by David Fontana in 1989. It contains 22 questions which measures level of professional stress by assessing various domains of profession like work load, work environment, rewards etc. The scoring range is between 0 and 60. Subjects who score up to 15 are considered 'not stressed'. Subjects with scores of 16 and above are considered to be stressed. And based on higher scores, further classification is done as Non-problematic (up to 15), Moderate range (16-30), Problematic (31-45) and Major problem (45-60). ⁹

Statistical Analysis:

SPSS 16.0 was used for statistical analysis. The results were expressed in terms of Mean±SD. For comparing professional stress between Yoga and non Yoga group paired t test was carried out. The level of statistical significance was $p < 0.05$.

RESULTS

All the subjects in the age group 20–50 years with mean age 34.34±10.62 years had BMI 23.46±1.14 kg/m². Both the groups were matched for age and demographic parameters. Table 1 shows comparison of professional stress between Yoga and non Yoga group.

Table 1: Comparison of professional stress between Yoga and non Yoga group

Parameter	Yoga group (N=26)	Non Yoga group (N=26)	P value
	Mean±SD	Mean±SD	
PLSS score	16.9±5.342 (Moderate)	31.2±9.761 (Problematic)	0.00429***

PLSS - Professional Life Stress Scale

In brackets – Classification of stress score of PLSS⁹

* $P < 0.05$ significant, *** $P < 0.005$ highly significant difference

Our study clearly showed significant difference (p value 0.00429) in professional stress between yoga (16.9±5.342) and non yoga group (31.2±9.761). Even though Yoga group had moderate stress (PLSS score 16-30), the score was significantly less compared to non Yoga group, which had stress score in the range of problematic stress (PLSS score 31-45).

DISCUSSION

In present study we found that Yoga group had moderate professional stress, but compared to non Yoga group which had problematic stress, the stress among yoga group was significantly less.

As per the classification given by David Fontana for stress scores, moderate stress (score 16-30) is nevertheless well worth looking at how it can reasonably be reduced. Problematic Stress (score 31-45) is clearly a problem, and the need for remedial action is apparent. The longer the person works under this level of stress, the harder it often is

to do something about it. There is a strong case for looking carefully at their professional life.⁹

Studies which support the result of our study like, a study by Hartfiel *et al.* reported that a 6 week yoga programme in a large British university ($n = 48$) resulted in a significant increase in resilience to stress, and substantial improvements in composure, clear-mindedness, elation, energy and confidence.¹⁰ In a study by N. Hartfiel *et al.*, which directly measured the effect of 8 week programme of 'workplace yoga' for alleviating perceived stress, found that yoga resulted in significant reductions in stress and improved psychological well-being.¹¹ Wolever *et al.* found that a 12 week (12 h) yoga programme in large American insurance company ($n = 239$) produced significant improvements in perceived stress and sleep quality compared with a control group that received no intervention.¹² Michalsen *et al.* reported that 3 month yoga programme resulted in significant reductions in perceived stress among a randomized group of emotionally distressed women.¹³

In a study which investigated the effects of hatha yoga on stress, anxiety, and depression in women, showed that 12 sessions of intervention as regular hatha yoga exercise significantly reduced stress, anxiety, and depression.¹⁴

Although our findings are promising, several factors limit the conclusions that can be drawn from our study. The size of our sample was modest ($n = 52$) in comparison with the other studies cited in this paper. Our study was a cross sectional study; there is a need for a controlled trial in future to clearly study the effect of yoga on professional stress among IT professionals.

Shu-Ling Lin *et al.* examined the effects of a 12-week yoga intervention on work-related stress, stress adaptation, and balance of autonomic nerve activities measured by HRV, suggested that a yoga program greater than 6 weeks may effectively enhance the activity of parasympathetic nervous system, to elevate stress adaptation and thus reducing both physical and perceived mental stress.¹⁵

Evidence for the effectiveness of six months yoga on level of professional stress was demonstrated in this study, even though it is a cross sectional study, yoga may be a useful tool for the working women, to be practiced for psychological health on a daily basis. Yoga may have potential implications on mental clarity, emotional stability and a greater sense of wellbeing and in handling the adverse circumstances and stand as a preventive measure for mental health problems among working women, especially in the IT industry, which needs to be studied in future with a controlled trial.

Keeping the results of present study as basis, workplace yoga can also be suggested in IT industry to alleviate stress among women, since it can save time of the employees at the same time reducing stress especially among women employees.

CONCLUSION

This study aimed to examine the difference in professional stress levels between working women in IT industry, who regularly practice yoga and the ones who do not. The results indicated that Yoga group had moderate stress which can reasonably be reduced, and compared to non Yoga group which had problematic stress which needs a remedial action, the stress among yoga group was significantly less.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interests regarding publication of this paper

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