

## A Quantitative Study on Indian IT Professionals to Validate the Integrated Model on Job Stress

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**Abstract:**

*Impact of mental strain caused by Job stress in workforce, is much researched topic in this digital age. It is generally accepted that mental strain caused by excessive stress (distress), is one of the main reasons for today's wide spread nature of non-communicable diseases like hypertension, depression etc., in the knowledge based workforce. Eustress (positive state of stress) brings high alertness and helps to perform beyond the perceived capability of any worker. Most of the western popular models on job stress, considered only distress component while understanding mental state due to job stress leaving behind the Eustress component. In this integrated model on job stress, both Eustress and distress states were duly considered, by making it the unique comprehensive model on defining impact due to Job stress. This model also brings about the significance of psyche nurturing practices which play key role in modifying the impact of job stress. To validate this integrated model on Job stress, a quantitative study was performed on assessing "perceived stress levels" of Indian IT professionals by choosing Yoga based Cyclic Meditation practice as psyche nurturing practice. It was observed that "perceived stress levels" were reduced significantly in Indian IT professionals with regular practice of cyclic meditation. This quantitative study supports claims of Integrated Job stress model that psyche nurturing practices have modifying effect on impact due to job stress in knowledge based workforce. Stress researchers across the globe, are encouraged to use this unique integrated model under multiple industry/professional setups and come up with valuable suggestions for mental well-beings of the workforce.*

**Key words:** Job stress, mental strain, integrated model, Yoga, IT professionals

### I. BACKGROUND

As per US National Institute for Occupational Safety & Health (1998) ,<sup>[1]</sup> Job stress can be defined as the harmful physical and emotional response that occurs when the requirements of the job do not match the capabilities, resources or needs of the worker. Job stress can cause poor mental health and can increase rates of work-related injuries and accidents. Stress and lack of well-being in the workplace cost more than \$25.9 billion per annum in terms of sickness absence, presents and labour turn over in UK and Europe.<sup>[2]</sup> Given the impact and importance of stress at work place, popular western models on mental strain due to job stress were studied with a view of coming up with suggestions to increase 'stress tolerance levels' of knowledge based workforce.

**1.1 western popular models related to job stress:**

**Demand-Control Model (DCM):** As per DCM model, if a worker has less control/discretion power at work, while meeting job demands, then the worker would go through mental strain caused by Job stress.<sup>[3]</sup> Based on job control and Job demand, jobs are classified as Passive jobs, active jobs, low strain jobs and high strain jobs.

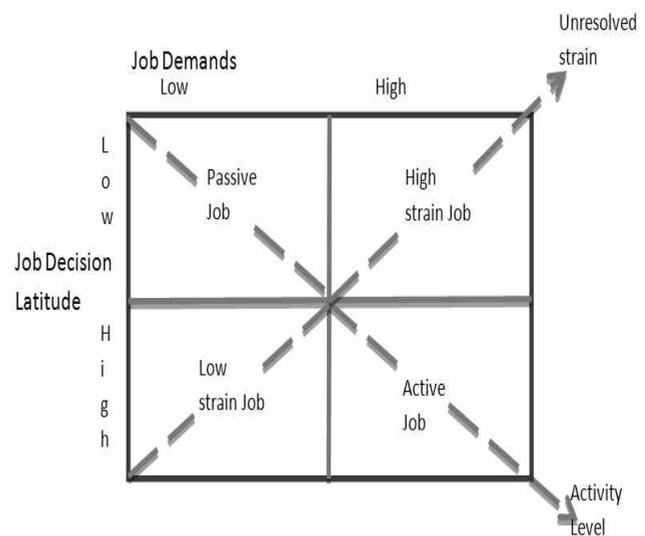


Figure1:- Demand – Control Model

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concerns, cross cultural sensitivity, organised project management, Risk management etc., also contribute to modify organisation stress variables.

**Person related stressors:** These are the stressors which arise from home as well as from work settings. Stressors like ill-health of family members/friends, financial loss of self/family members/friends, growing needs of family, necessity of support to family member education/health etc. come under personal related stressors arising from home. Stressors like lack of skills for current job, lack of decision making authority at work by virtue of position, over work demanded by the organisation, demanding schedules etc. come under person related stressors arising from work settings.

worker resulting in positive health. In the Negative stress (Distress) sphere, one would use negative coping techniques like running away from problem, unable to listen to others etc., which would result in uncertainty to solve problem at hand. One under the negative stress sphere may lose existing opportunities causing ill health effects like depression. The net impact of previous Eustress /distress experiences would be stored as deposited psyche variable in the person. This psyche variable plays a role in influencing the next stress stimulus faced as well as stress tolerance capacity. A well nurtured psyche would be able to expand its 'stress tolerance limits'. By increasing the positive effects of psyche nurturing practices, one can land up in eustress sphere, even if challenging situations were created due to work related stressors.

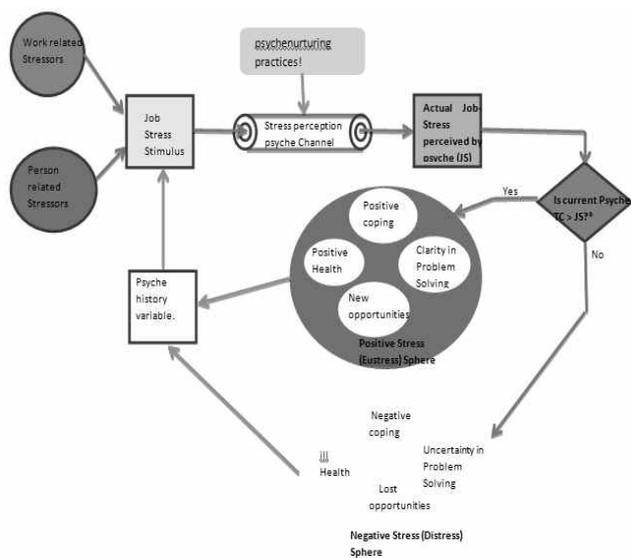


Figure4:- Integrated Model on impact of Job Stress (TC->Tolerance capacity; JS -> Job stress)

**Theory of operation explaining flow of Job stress stimulus and its impact:** Job stress stimulus for any worker is generated by work related stressors. This stimulus is influenced by both person related stressors as well as psyche history variable. This Job stress stimulus traverses through virtual stress perception channel in the psyche. Psyche nurturing practices followed by the worker would have modifying effect on the perception of job stress stimulus. Healthy psyche nurturing practices like regular practice of Yoga etc. may reduce the agitation of the mind while perceiving the stress situations faced.<sup>[10]</sup> Un-healthy psyche nurturing practices like taking drugs/excessive alcohol etc., may increase the agitation of the mind while perceiving the stress situations faced. Every individual has stress tolerance capacity (TC) i.e. he /she can withstand the impact of stress situations faced by being able to return to homeostasis condition soon. If the actual perceived Job stress (JS) is less than the Tolerance capacity (TC), then one would end up in positive stress sphere else in negative stress sphere. In the positive stress (Eustress) sphere, one would adopt positive coping skills like listening, focusing on solution based approaches etc. Positive stress sphere would help to find new opportunities which in turn increases the self-esteem of the

### III. VALIDATION OF THE INTEGRATED MODEL

IT professionals in India represent knowledge based work force as they mainly work with their mental capital. Indian IT professionals are always under constant pressure to deliver services efficiently along with being cost efficient. This requires to plan for ever changing customer requirements and forecast market demands in advance, so as to deliver services/products in "first time right" approach. In this web-connected world, time is the most precious thing for all the customers round the globe for IT professionals. All these factors cause Job stress for IT professionals. In a study performed on professional stress, depression and alcohol use among Indian software professionals with support of a sample size of 1071 subjects working in Bengaluru, it was observed that the software employees are professionally stressed due to job conditions and are at ten times higher risk for developing depression and also there is a significant increase in the incidence of psychiatric disorders.<sup>[11]</sup> A survey performed on call centre workers from IT based BPO industry based in Pune & Mumbai indicates that a high proportion of workers faced sleep disturbances and associated mental stress and anxiety as a result of work related stressors.<sup>[12]</sup> In a study performed on 200 IT professionals based out of Delhi, common problems seen among the study subjects were musculoskeletal (77.5%) and visual (76%) followed by stress (35%).<sup>[13]</sup> For these reasons, IT professionals working in Bengaluru were selected for validating this integrated model using quantitative methods.

**Cyclic Meditation:** Cyclic Meditation (C.M) practice was chosen as psyche nurturing practice. C.M is inspired by a verse from Mandukya Upanishad. Cyclic meditation was developed by Swami Yoga Anusandhana Samstahana, a world class Yoga university based in Bangalore, India. In a day to day life we relax, though unconsciously, by stretching and relaxing. In Cyclic Meditation we not only stretch consciously and systematically, but also relax consciously. Yoga body postures (asana) like *PadaHastasana*, *Ardha Chakrasana*, *Ardhakati Chakrasana*, *Shashankasana* and *Ushtrasana* are used for stretching where as *Shavasana* is used for relaxing. Various relaxation techniques are employed during *Shavasana* like Instant Relaxation, Quick relaxation and Deep Relaxation. This provides stimulation

followed by relaxation at muscular level as well as psyche Level.<sup>[14]</sup> In a study done at Swami Vivekanand Yoga Anusandhan Samsthan, Bengaluru, it was also that found Cyclic Meditation Technique, to be more effective in achieving voluntary heart rate variability as compared with another yogic technique of Supine Rest (Savasana).<sup>[15]</sup>

**Materials and Methods:** Sample size chosen for this quantitative study consisted of "96" IT professionals. All the IT professionals were selected from Bangalore office of an Information Technology based Multi-National company, which has presence in India, Germany, Singapore, Austria, UK and U.S.A. Participants position within organisation ranged from junior engineers, senior technical leads to people managers. All participants came voluntarily to participate in the study. Study also got permission from institution Ethical committee. Total sample size was divided into two groups, namely Yoga group and Control group. Yoga group has both men and women employees with an average age of 31.04 years and with standard deviation of 4.57 years. Control group has both men and women employees with an average age of 32.02 years with a standard deviation of 4.582 years. Study was performed for an average duration of 2 months excluding weekends in the selected office premises. Both Men and women employees, with normal health as declared by subjects were included in the study. Subjects volunteered for the study do not have any previous experience of Yoga program as declared by subjects. Employees who age is below 24 years or above 50 years are excluded from the study. All participants have education qualification of graduation and above. Perceived stress is measured through Perceived stress scale (PSS) questionnaire developed by Sheldon Cohen. PSS questionnaire was designed to tap how unpredictable, uncontrollable, and overloaded respondents find their lives. The scale also includes a number of direct queries about current levels of experienced stress.

	Control Group		Yoga Group	
	Age	I.T. Industry Experience	Age	I.T. Industry Experience
Mean	32.021	8.208	31.041	7.395
S.D	4.307	4.307	4.547	4.281

#### IV. PROCEDURE

PSS questionnaires were administered to all members participating in the study from both control and yoga groups. The intervention given to Yoga group is a 35 minute, *cyclic meditation* practice, whose details are mentioned earlier. Control group was administered with walking or equivalent exercise for 35 minutes and was told to write a diary to observe changes taking place. This is a pre-post study. Participants from both groups filled up the questionnaires voluntarily before the beginning of the study period and at the end of study period.

#### V. RESULTS AND DISCUSSION

**Table 2:** indicates response on Perceived Stress(PS) component of Yoga Group, at the starting and at the end of study period.

**Table 2: Yoga Group**

	Pre		Post			
	Mean	Standard Deviation	Mean	Standard Deviation	% Change in Mean	p value (with in group)
PS	31.52	3.288	20.56	2.843	34.7715	.000

Yoga group has shown reduction of 34.77 % in the mean value from pre to post. The improvement observed in reduction of perceived stress is very significant as  $p < .01$ . Table 3 indicates responses on PS components of Control group, at the starting and at the end of study period.

**Table 3: Control Group**

	Pre		Post			
	Mean	Standard Deviation	Mean	Standard Deviation	% Change in Mean	p value (with in group)
PS	32.15	3.209	31.4	2.871	2.3328	0.191

Control group has shown a reduction of 2.33 % in the mean value of perceived stress between pre and post. The improvement observed in reduction of perceived stress is not much significant as  $p > 0.01$ .

The significance of change in PS component between Yoga and control group is measured with *Mann Whitney* test.

**Table 4: Between the Groups (Mann Whitney test)**

	Pre-study	Post-Study
PS	0.171	.000

The baseline between yoga and control group is matched and the post value has shown highly significant result ( $p < 0.01$ ).

#### VI. CONCLUSION

Based on the quantitative study performed, it could be observed that psyche nurturing practices like cyclic meditation have significant positive effect in reducing the perceived stress levels in Indian IT professionals. This study validates the integrated model on Job stress by supporting the claim that regular psyche nurturing practices would have modifying effect on perceived stress at work place.

#### VII. LIMITATIONS

Though psyche nurturing practices could have modifying effect on perceived Job stress as per discussed model, organizational changes would also have effect in altering Job stressors. Certain variables like Role conflict,

Role ambiguity could also cause Job stress to employees. Organisational changes which address these concerns would also bring down the Job stress perceived by the workforce. Current study is done specific to one IT company, however it could be expanded to multiple industry domains like nursing, police officers etc., to validate this model more robustly.

### VIII. STRENGTH OF THE STUDY

This is the unique model in explaining the effect of psyche nurturing practices in altering job stress effects in physically healthy work force. This also brings out the positive effect of psyche nurturing practices in coping with job stress.

### IX. FUTURE DIRECTIONS

Authors call up on stress researchers across the globe to use this model in all stress research by employing it under various industry set ups like police officers, nursing etc. Findings from the future data using the model would help to robustly validate this model.

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