

# Physical and Emotional Symptoms Associated to Work Related Stress in IT Professionals

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**Abstract-** Based on report published by American Psychological Association, the number of Americans reporting extreme stress continues to be significant - around 20 percent in 2012, 22 percent in 2011, 24 percent in 2010 and 23 percent in 2009. Based on latest report from American Psychological Association, work is among the top three sources of stress. The physical and emotional symptoms associated to stress vary based on type of work. Hence understanding of the specific cause in work related stress and associated symptoms help organizations to come up with appropriate stress management programs to improve organizational effectiveness. Considering the increasing role of IT (Information Technology) in today's industry, this study is intended to identify the causes of work related stress in IT professionals and the common physical and emotional symptoms exhibited by IT professionals with high level of work related stress. The study collected data from 128 IT professionals, to identify a subset of professionals experiencing high levels of work place stress. 53 of 128 professionals reported work related issues as primary factor contributing to stress. Work related issues causing extreme stress, most frequently experienced physical symptoms associated with work related stress and most frequently experienced emotional symptoms associated with work related stress, were identified for the 53 professionals that reported work related issues as primary factor contributing to stress.

**Index Terms-** Stress, Psychology, Symptoms, IT

## I. INTRODUCTION

Cox<sup>1</sup>, defines stress as a "perceptual phenomenon arising from a comparison between the demand on the person and his ability to cope." The interaction model of stress implies that varying demands are made on individuals in any situation. These demands may be physical, emotional or environmental in nature. The degree of stress experienced by an individual in any single situation will vary due to personal factors. An individual's reaction to stress can also be physiological (state of arousal) <sup>2</sup>. This necessarily means that stress can manifest as emotional and physical symptoms in an individual. According to Sternberg, disruption in communication among the major biological systems during and after serious stress or the accumulation of multiple, minor, difficult events increase the risk for physical and emotional illness <sup>5</sup>.

Stress management is the ability to reduce or cope with

stressors by controlling frequency, intensity, and duration of the stress reaction to decrease unhealthy conditions <sup>3</sup>. In the broadest sense, stress management may include any type of stress intervention; however, it may also include a narrow set of individual-level interventions <sup>4</sup>.

Organizations need to clearly identify the causes of work related stress and, the physical and emotional symptoms that employees have based on these causes while designing stress management program. It is very important to conduct study of stress at industry/domain level so that effective stress management programs can be designed that will be beneficial and meets the needs of professionals in the specific industry.

There is several industry specific stress studies conducted in healthcare, academic and defense industry. Some of the popular studies published recently on industry specific stress study are given in reference <sup>6,7,8</sup>. The purpose of this study is focused on stress of professionals in IT industry. Work related issues causing extreme stress, most frequently experienced physical symptoms associated with work related stress and most frequently experienced emotional symptoms associated with work related stress, of IT professionals were analyzed as part of this study.

## II. MATERIALS AND METHODS

The aim of this study was to get data for the following research questions:

- i) What are the work related issues causing extreme stress in IT professionals?
- ii) What are the most frequently experienced physical symptoms associated with work related stress in IT professionals?
- iii) What are the most frequently experienced emotional symptoms associated with work related stress in IT professionals?

The research approach used in the study to obtain data for the research questions is shown in figure 1.

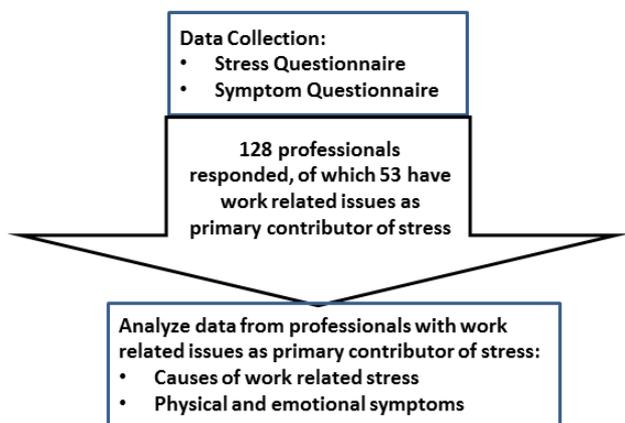


Figure 1. Research approach used in this study

The study was conducted by utilizing questionnaire based self-report to get data from the IT professionals. Self-report questionnaire involved the administration of many questions/items to participants who responded by rating the degree to which each item reflects their experience and can be scored objectively.

The decision to use a questionnaire instead of interviews was because:

- It allowed the researcher to reach a wider set of IT professionals working in different organizations.
- There was time for respondents to consider their opinions before committing to the response.
- Questionnaire made it convenient for the researcher to analyze the data obtained.
- Bias was minimized as no middleman was involved and there was uniformity of question and/or statement presentation.
- The researcher's own opinion(s) could not influence respondents to answer questions in a certain manner.
- Questionnaires are less intrusive than telephonic or face-to-face surveys.

This Stress questionnaire was intended to determine the causes of stress and factor contributing to highest level of stress. To ensure that the Stress questionnaire appears neutral, the factors contributing to stress covered in the questionnaire included: Family Issues, Work Related Issues, Social and Interpersonal Issues, Environmental Issues outside Work, Financial and Legal Issues, Change in Circumstances and Physical Issues. IT professionals that responded to the stress questionnaire were asked to rank the factors contributing to stress corresponding to the level/contribution it has on the stress of the individual. "Rank 1" corresponds to highest contributor to stress.

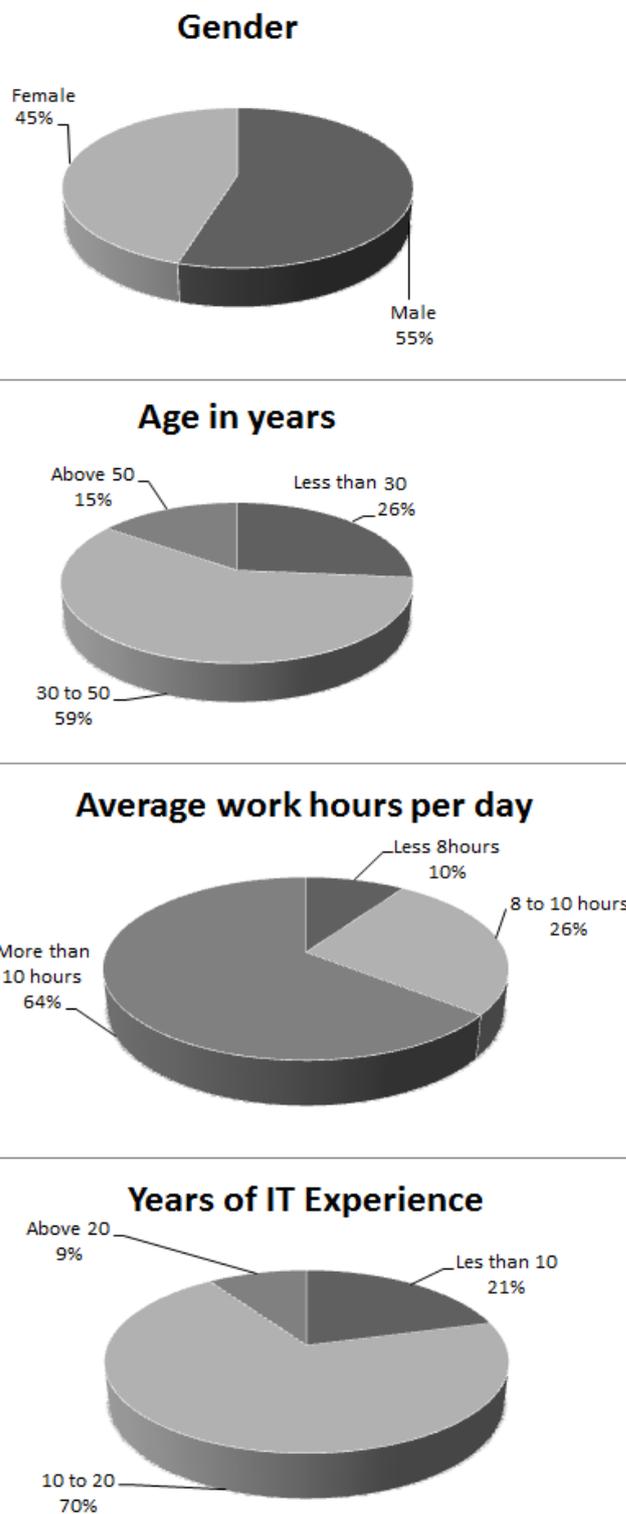
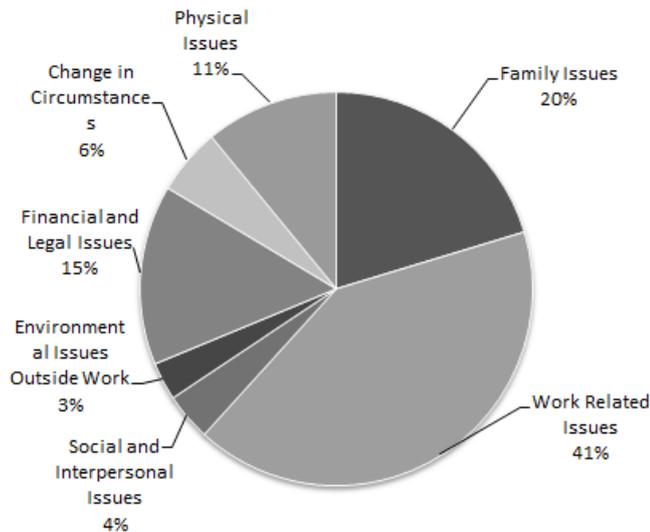


Figure 2. Characteristics of sample under study

The professionals, who reported work related issues as the primary contributor of stress, were requested to respond to an additional symptoms questionnaire on work related stress. Out of the 128 IT professionals that responded to the questionnaire, 53 reported to have work related issues as primary contributor to stress, and gave response to both questionnaires. The distribution of factors based on its contribution to stress on IT professionals that participated in this study is shown in figure 3.

The characteristics of the sample that reported work related issues as primary contributor to stress are show in figure 2. They are referred to as sample under study to get better insight on the research questions.



**Figure 3.** Distribution of primary factor contributing to stress in IT professionals

### III. RESULTS

Results of the study provided answers to the research questions this study intended to resolve. The response of the IT professionals helped in showing the main causes of work related stress and the physical and emotional symptoms associated to work related stress. The results of the study are presented in table 1, table 2 and table 3.

**Table 1.** Work Related Issues Contributing to Stress

Work Related Issues Contributing to Stress in IT Professionals	Number of Professionals Rating Extreme Stress	%
Job Insecurity	12	5.88
Unsafe/Unethical work environment	4	1.96
Started with a new career/ position	7	3.43
Incomplete job description	14	6.86
Too high workload	32	15.69
Work environment issues - limited office space, noise, pollution, privacy etc	13	6.37
Retrenchment	9	4.41
Disciplinary conduct/ serious warnings given by supervisor	3	1.47
Concern on slow tempo of promotion or low remuneration	17	8.33
Having relationship problems with colleagues	8	3.92

Problems with authority structure / management	12	5.88
Lack of positive feedback by managers	24	11.76
Boring routine work	8	3.92
Irregular working hours	34	16.67
Difficulty in deciding future career	7	3.43

**Table 2.** Physical Symptoms Associated with Work Related Stress

Physical Symptoms Associated with Work Related Stress in IT Professionals	Number of Professionals experiencing the symptom most frequently	%
Headaches	34	11.07
Muscle pain	18	5.86
Colds	12	3.91
Disturbed Sleep	17	5.54
Back pain	32	10.42
Neck pain	8	2.61
Tiredness	28	9.12
Breathing difficulties/ Shortness of breath	7	2.28
Feeling dizzy	12	3.91
Eye Strain – Itching, Watery or Dry	17	5.54
An upset stomach or nausea	12	3.91
Chest pain	4	1.30
Diarrhea	8	2.61
Acid indigestion or heartburn	13	4.23
Stomach cramps (Not menstrual)	7	2.28
Constipation	8	2.61
Heart pounding when not exercising	3	0.98
An infection	2	0.65
Fever	12	3.91
Loss of appetite	13	4.23
Trouble Falling asleep	22	7.17
Skin problem – itching, pimple, rash, etc	18	5.86

**Table 3.** Emotional Symptoms Associated with Work Related Stress

Emotional Symptoms Associated with Work Related Stress in IT Professionals	Number of Professionals experiencing the symptom most	%
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	frequently	
Helpless/Can do nothing about a situation	3	1.03
Have lost interest in work	13	4.45
Accept things as they are	7	2.40
Boredom at work	18	6.16
Do not wish to participate in activities	12	4.11
Have no interest in activities around you	8	2.74
Feel uneasy to go to work	13	4.45
Feels no support at work	23	7.88
Want to isolate and work alone	12	4.11
Feel irritated or easily annoyed	28	9.59
Feel aggressive	8	2.74
Feel inferior	7	2.40
Feel guilty	3	1.03
Getting sad	3	1.03
Afraid without any specific reason	18	6.16
Afraid of losing control	21	7.19
Not exactly sure how to act	8	2.74
Trouble concentrating	32	10.96
Continuously needs assistance	8	2.74
Getting into trouble	3	1.03
Too many problems	17	5.82
Feel insecure	27	9.25

#### IV. DISCUSSION

The research study showed that for the sample under study, the top three work related issues causing extreme stress in IT professionals were:

- a) irregular work hours,
- b) too high workload,
- c) lack of positive feedback from managers.

Job insecurity, incomplete job description and work environment also were causes of stress which can be expected based on current economic conditions and studies on workspace<sup>9</sup>, conducted recently. Lack of positive feedback is a stress cause which the organizations can address by educating the supervisors and offering employee recognition programs at various levels. However high work load and irregular work hours, in most cases is stress cause which most organizations does not want to avoid for achieving productivity and timelines of IT projects. Hence appropriate stress management programs should be introduced to improve coping strategies of the IT professionals, as organization may not want to directly

eliminate irregular work hours and high work load.

For the sample used in this research study, the top three most frequently experienced physical symptoms associated with work related stress were:

- a) headaches,
- b) back pain
- c) tiredness.

Eye strain, disturbed sleep and skin problems were also common symptoms among IT professionals. IT organizations are strongly suggested to introduce alternative medicine programs that involve exercises like yoga which will help professionals relax mentally and physically. It is strongly suggested to at least educate employees on eye exercises and stretch exercises that can directly address the top three symptoms.

For the sample used in this research study, the top three most frequently experienced emotional symptoms associated with work related stress were:

- a) trouble concentrating,
- b) fell irritated or easily annoyed,
- c) feel insecure.

Boredom at work and getting afraid without any specific reason are some of the other emotional symptoms common among IT professionals with high level of work related stress. The results show the need for internal initiatives that will improve coping strategies of IT professionals. Lack of internal initiatives, will result in a hostile work environment that is disturbing not only to the person experiencing stress, but also to other colleagues in the enterprise working with this professional. Multiple research studies have showed the effectiveness of preventative, as opposed to reactive coping strategies<sup>10,11</sup>. For organizational stress management it is suggested to come up with preventive coping strategies. Preventative coping involves developing resources to lessen the consequences of stressful events<sup>12</sup>, which can be achieved using organizational stress management programs.

#### V. CONCLUSION

The Information Technology (IT) industry is growing at a rapid pace and the work pressure and expectations from IT workers is increasing exponentially. There is a pressing need for emphasis to be placed upon research to address the role of stress and its function and its impact on mental and physiological health of IT professionals. Research in this direction will help IT organizations to come up with effective low-cost strategies and interventions to combat, reduce, or prevent the effects of stress. Reducing some of the sources of stress like workload and irregular work hours, may not be productive for the enterprise. Hence stress is inevitable for IT professionals. However, knowledge of effective stress management strategies will help in empowering IT professionals to become more self-efficacious in the management of their health and well-being.

This study helped in analyzing the work related issues causing extreme stress, most frequently experienced physical symptoms associated with work related stress and most frequently experienced emotional symptoms associated with work related stress in IT professionals. The study included participants from multiple IT organizations and care was taken to isolate samples with work related stress as primary contributor of stress. The study does have limitation, in that other sources of stress may have also contributed to some degrees in the physical and emotional symptoms, for those with extreme work related stress. As future work, the intent is to study the effectiveness of alternative medicine in stress management of IT professionals, and analyze how it would reduce the physical and emotional symptoms from work related stress of IT professionals.

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