



# PERCEIVED PROFESSIONAL STRESS LEVELS AMONG EMPLOYEES IN AN INFORMATION TECHNOLOGY COMPANY, BANGALORE

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## ABSTRACT

**Background:** In view of reported increased prevalence of stress levels among information technology (IT) professionals, this study was conducted to assess the extent of this problem.

**Objectives:** To assess stress levels and factors associated with stress among employees working in an information technology company in Bangalore.

**Methods:** One hundred and forty nine IT professionals participated in this cross-sectional study. The study variables included gender, total work experience, working hours, break time and number of dependents. The prevalence of stress was assessed utilising two standard scales: Ten point Perceived Stress Scale and Professional Life Stress Test. The data was analysed using SPSS and Epi Info.

**Results:** Mean score for perceived stress scale was 35.73 and according to the professional life stress test, none of the respondents were stressed needing immediate intervention. There was no association between stress and gender, work experience, number of dependents and duration of break time. Insomnia was the most common stress symptom among the employees.

**Conclusion:** The prevalence of stress was neither high warning immediate intervention nor was it low to rule out its consequences if the current trends continue among IT professionals. Managements have to devise and adopt various stress management techniques to reduce stress and to prevent unpleasant consequences of stress on the employees and on the companies.

**Keywords:** Stress levels, IT professionals, perceived stress scale, professional life stress test.

## INTRODUCTION

Due to globalisation and changes in the nature of work, people in developing countries have to deal with increasing work-related stress.<sup>1</sup> Worldwide work stress has been recognised as a major challenge to workers' health and in turn healthiness of their organisation.<sup>1</sup> Work place stress results due to mismatch between the demands and pressures and the workers knowledge and abilities to cope with it. Stress can have a bearing on the worker and also on the work place.<sup>1,2,3</sup> Good organisations and

management work towards decreasing the work place stress.<sup>1,2</sup>

About 74% of the employees in information technology (IT) and business process outsourcing (BPO) industries are less than 30 years, 31% are women and contributed to 6.4% of India's GDP in the year 2012.<sup>4</sup> This sector is one of the biggest job creator, employing either directly or indirectly 2.3 million people.<sup>5</sup>

The prevalence of work stress among the IT employees in India ranged between 44% to 85%.<sup>6,7,8</sup> Studies among IT employees in other countries have also demonstrated the presence of work stress.<sup>9,10,11,12</sup>

Developing countries are 'in transition', and often no specific data on work-related stress are available due to poor recording mechanisms and non-recognition of the related outcomes. There is a lack of awareness of work-related stress and shortage of resources to deal with work stress.<sup>1</sup>

This prompted an effort to study the work stress levels among the employees of software companies in Bangalore.

## OBJECTIVES

The objective of the study was to assess the stress levels and factors associated with stress among employees working in an information technology company in Bangalore.

## MATERIALS AND METHODS

The cross sectional study was done in an IT company situated at the Electronic City, Bangalore, India. The study was undertaken in the month of March-April, 2011.

Study tools was a self-administered pretested and predesigned questionnaire which had two parts: **Part 1** - Demography details including work experience, working hours, work scheduling, breaks and number of dependents; **Part 2** - Included two stress scales, Professional Life Stress Scale<sup>13</sup> and Perceived Stress Scale 10 Items.<sup>14</sup> The Professional Life Stress Scale, scores can range from 0 to 60 and classified into 4 different classes depending on the obtained scores. Scores between 0 and 15 indicates no stress, 15 to 30 indicate moderate stress, 30 to 45 indicate stress needing remedial action and 45 to 60 indicates stress as a major problem needing intervention without delay. Perceived Stress Scale 10 item measures the degree to which the situations in one's life are appraised as stressful. Scores can range from 0 to 40 with higher scores indicating greater association.

**Inclusion criteria:** Software professionals with a work experience of more than one year and consented to take part in the study.

**Procedure:** Consent and permissions were sought and obtained from the management of the software company. Written consent form was attached to the individual questionnaires. The software company participating in the study was founded in 1996 and had a work force of 1,000 employees.

Total of 250 questionnaires were distributed to employees. The employees were selected by simple random sampling technique from the list of employees which was available with the human resource department of the company. The answered questionnaires were collected after a week. Total of 149 employees answered and returned the questionnaire.

**Statistics and analysis of the data:** The data was coded and entered in Microsoft excel and analysed using SPSS 16 and Epi Info v3.5.1 for proportions, associations and frequencies. The associations were considered significant if the p value was less than 0.05.

## RESULTS

In this study the response rate for the self-administered questionnaire among IT professionals was 149 (59.6%).

**Demographic details:** Among the 149 respondents, there were more male respondents 111 (74.5%) when compared to females. Most of the employees both among male and females were in the age group of 20-30 years, 67 (60.36%) and 29 (76.31%) respectively. The mean age of the respondents was 29.23 years and the sex ratio was 1:3 (Table 1).

The number of dependents varied between nil to 5 and the mean number of dependents was 1.97. On an average the IT professionals worked for 9.23 hours per day. Majority of the professionals were eligible to take two breaks of 15 minutes each for tea/coffee and one break of 30 minutes for lunch. Most of the employees travelled for more than one hour to reach their place of work.

Majority, 117 (78.52%) of the respondents had a work experience of 10 years or lesser (Table 2).

**Table 1: Age - Sex distribution of the study population**

Age Groups (yrs)	Males (%)	Females (%)	Total (%)
≤ 25	17 (58.6)	12 (41.4)	29 (19.46)
26 - 30	50 (74.6)	17 (25.4)	67 (44.96)
31 - 35	30 (83.3)	6 (16.7)	36 (24.16)
≥36	14 (82.4)	3 (17.6)	17 (11.40)
<b>Total</b>	<b>111 (74.5)</b>	<b>38 (25.5)</b>	<b>149 (100)</b>

**Table 2: Work experience of the study population**

Work Experience (years)	Frequency (%)
1 - 5	67 (45.00)
6 - 10	50 (33.60)
≥ 11	32 (21.40)
<b>Total</b>	<b>149 (100)</b>

**Stress scores:**

**Scores of the Perceived Stress Scale:**

- 00 - 10: 12 (8.05%)
- 11 - 20: 100 (67.11%)
- 21 - 30: 37 (24.83%)
- 31 - 40: 0 (0%)

Analysing the perceived stress scale, most of the respondent's scores ranged 11-20, 100 (67.11%). Thirty seven (24.83%) and 12 (8.05%) had scores between 21-30 and 00-10 respectively. The mean score was 35.73.

**Scores of the Professional Life Stress Test:**

- 00 - 15: 139 (91.27%)
- 15 - 30: 13 (8.72%)
- 30 - 45: 0 (2.68%)
- 45 - 60: 0 (0%)

According to the professional life stress test, none of the respondent were stressed, needing immediate intervention, 13 (8.72%) were moderately stressed and 139 (91.27%) had no stress. Among the 13 with moderate stress, 11 (84.61%) were males which underlines that stress is more among men when compared to women and this difference was not significant. Borderline scores of 14 and 15 was observed among 7 (18.42%) females and 4 (3.605) males.

**Table 3: Test of significance (p value) between demographic variables and stress tests**

Demographic Variables	Perceived Stress Scale	Professional Life Stress Test
Gender	0.56	0.56
Work experience	0.95	0.87
Number of dependents	0.45	0.86
Working hours	0.81	0.054
Break time	0.22	0.47

**Table 4: Symptoms of stress in the study population**

Symptom	Frequency (n=149)(%)
Indigestion and Poor Appetite	27 (18.1)
Sleep Problems	38 (25.5)
Excessive Sweating	19 (12.8)
Tiredness and Hopelessness	25 (16.8)
Irritation	8 (5.4)
Inability to Unwind	12 (8.1)
Lack of Enthusiasm	11 (7.4)
More Responsibility than can be Managed	4 (2.7)
Difficulty in Making Decisions	3 (2)
Panic	1 (0.7)
Tearfulness	1 (0.7)

There was no significant association between any of the study variables like gender, total work experience, number of dependents, total work hours, break time and the stress levels according to both perceived stress scale and professional life stress test.

All the 149 interviewed workers has at least one symptom of stress and the symptom of stress which troubled the most was considered and depicted in the table. Problems associated with sleep were the most common stress symptom among the participants with most of them having difficulty going to sleep. Indigestion and poor appetite, tiredness and hopelessness, excessive sweating, inability to unwind and lack of enthusiasm were the other symptoms of stress among the respondents.

**DISCUSSION**

There have been few studies in India and globally that have assessed stress levels among software professionals.

Study<sup>15</sup> to assess the psychiatry disorders among the Indian working class reported 51.7% of the workers had some psychiatry diagnosis with one to three underlying psychiatry morbidities.

Similar studies<sup>6,12,16,17</sup> has found that majority of the study participants were in the age group of 20-30 years and more men responded when compared to women. The work experience described in other study<sup>10,12,17</sup> is similar to study findings.

Similar findings with stress as a key health problem among 44% of the IT professionals, was more common among men when compared to women and also stress was significantly higher among unmarried professionals.<sup>6</sup> Stress was prevalent among 35% of the respondents and was more common among males<sup>6,17</sup> and one of the study<sup>9</sup> reported that it was more among women. Stress was more common in the initial years and among those who work for longer duaration.<sup>7,16,17</sup> Contrary findings were reported in a study<sup>9</sup> i.e., stress levels were higher among more experienced and older professionals. Work experience and duration of work did not affect stress levels in this study. Musculoskeletal and visual problems are the other problems associated with stress.<sup>6,17</sup> Depression was also prevalent in less than 10% of the respondents.<sup>6,17</sup> It's also important to note that improvement in mental health and job satisfaction enhances the coping behaviour.<sup>16</sup> Factors like work overload, long working hours, working from home, lack of authority, role conflict and lack of support affected not only the mental health of the

employees but also impacted the occupational health of the professionals.<sup>7,12,16</sup>

This perceived stress scale score have to be monitored and if the scores show an increasing trend, then it suggests the need for intervention.

The professional life stress test scores suggest that few employees are stressed and the need to adopt stress management techniques. Even this trend has to be monitored and intervention started when needed. More importantly, the company can adopt stress management trainings (SMT) even short duration SMT would be beneficial both for the employees and the company.

In studies screening for stress, the degree of stress varied from extremely stressed to no stress<sup>9,10</sup> which is similar to our study findings and it underlines the need for stress reduction programs for IT professionals.

Sleep disorders, phobic disorder, nicotine and alcohol dependence, depression and dysthymia were other comorbidities among the industrial working population.<sup>15</sup> Even in this study, insomnia was the most common symptom of stress.

## CONCLUSION

Increased stress levels are a major problem affecting the software professionals. It has a major adverse implication both at individual as well as the organizational. Stress auditing helps the companies to identify employees with stress and in them stress levels can be reduced by adopting short duration SMT in work place.<sup>18,19</sup>

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