Original Article

Evaluation of Occupational Stress among Software Professional in South India: A Cross Sectional Study

Kannan K[1], Rajini S[2], S. Soundarya[3], N. Sowmya Devi[4], Vaishnavi R[5], K. Vignesh[6]

[1] Professor
[2] Prof& HOD
[3,4,5,6] Interns
Department of
Community Medicine
Sri Lakshmi Narayana
Institute of Medical Sciences
Biher University
Puducherry- 605009.

CORRESPONDENCE:

Dr.Kannan K,
MD (Community Medicine)
Professor
Department of
Community Medicine
Sri Lakshmi Narayana
Institute of Medical Sciences
Biher University
Puducherry- 605009.

ABSTRACT

Background: Stress is defined as a highly subjective phenomenon and it is a non-specific response of a body to any demand for change and it has touched all professionals posing threats to mental and physical health. Software organization such as IT sector are often observed under huge stressors

Objective: Since IT sectors seems to be lacking in terms of assisting the employees on knowledge about stress and coping for psychological problems and the research on these grey areas are limited, we would like to assess the magnitude of stress among IT professional in South India and to recommend the need for remedial action.

Materials and Methods: A cross sectional study was done in 154 IT professionals during the period of November to December 2019 Using a Validated Professional Life Stress Scale (PLSS), questionnaire through google form.

Results: Finding suggest that females and freshers are more stressed but there is no significant association

Conclusion: The level of stress can be reduced by providing better work environment, frequent counselling and screening and adequate reward for their work.

Keywords: Stress, IT professional, Mental Health

INTRODUCTION

Health is not merely the absence of disease or infirmity but a positive state of complete physical, mental and social well-being (WHO 1986). Working environment is considered healthy, not only an absence of harmful factors but copious of health promoting activities. This should be the part of life while working. According to WHO, stress occurs due to demand that exceeds their knowledge and abilities. There is difference between pressure or challenge and stress. When pressure exceeds its limit or beyond their knowledge and abilities it becomes stress. It can damage the worker's health and poor work organisation. Stress, it has a major impact in physical and mental health of all profession. Occupational stress can occur when the demand at working project and the candidate's abilities doesn't meet up and mainly the deadlines given to them brings more stress due to working all night to complete the given work.

Software professionals' nature of job is highly time bound, client oriented, technology intensive and target achievements. This trend in term, coupled with various factors such as negative workload, isolation, toxic work environments, difficult interpersonal relationship at work place and lack of opportunities or motivation to

advancement in one's skill level, contribute towards stress. Major amount of freshers carry more stress to prove themselves and get promotions. Though stress is unavoidable, adequate measures must be taken. Proper management of work and friendly organisation can decrease the load of stress.

Stress can be presented as symptoms such as indigestion, palpitation, sweating, tiredness, dizzy spell, sleep disturbances, irritability, low morale, alcohol and drug abuse. [1] This leads to family disputes, absenteeism, poor decision making, lack of creativity and organisational breakdown. Software employees are more accessible to professional stress than employees in many other industries. National institute for occupational safety and health states that "job stress, now more than ever, poses a greater threat to the health of workers and the health of the organisation.

There is a crucial need to understand the dynamics of IT professional stress and its associated psychiatric morbidities so as to prevent it. So, the present study was designed to evaluate and assess the severity of stress among them based on demographic factors using professional life stress scale questionnaire.

MATERIALS AND METHODS

After obtaining Institutional Ethics Committee approval, A cross sectional study was carried out in 154 IT firms in south India (Hyderabad, Bangalore and Chennai) to evaluate the stress at workplace. The study was conducted from November –December 2019.

We included IT firm of various grades and excluded psychiatric illness candidate from the study. Participants were explained the need of the study and once consent is obtained, the online link is sent.

The subject's age, sex, designation and years of experience were mandatory in our questionnaire. Measures were taken to prevent bias. Then the data was entered in excel sheets and analysed using Microsoft Excel and SPSS21.

Study tool

Demographic profile was obtained and standard PLSS (professional life stress scale) was used to calculate from 0- 60, with total of 22 questions, total score was obtained by summing up all. Interpretation is made according to following categories:

Each domain given scoring under PLSS:

1: No stress (0-15)

2: Moderate (16-30)

3: Need for remedial action (31-45)

4: Major problem (46-60)

Chi square test was used to compare the stress level in the participants and was found to be significant. Any score between 46-60, stress was considered as major problem, immediate intervention was needed. Score less than 15 were considered no stress, no remedial action needed but frequent screening to be done later. The questions included factors like appetite, sleep habits, hobbies, decision making, mental status, behaviour and daily routine habits and confidence level.

RESULTS

The study included 154 participants from IT firms from south India. The study population consists of 45.5% (70/154) of females and 54.5% (84/154) of males (Figure 1).

According to the Stress scale (Table 1): among males: 8.44%(n=13) of them had no stress and 33.11%(n=51) had moderate stress and 11.68%(n=18) had need for remedial action and 1.29%(n=2) had major problem. Among females: 7.14%(n=11) of them had no stress and 22.07% (n=34) had moderate stress and 13.63%(n=21) had need for remedial action and 2.59%(n=4) had major problem. Comparatively, females are more stressed than males. Based on chi-square value, there is no association between gender and stress.

According to age, the candidates are classified into three groups (Figure 2). 21-30 years, 31-40 years, >40 years into first, second and third groups. In group one, 11.68% (n=18) of them had no stress and 50.6% (n=78) had moderate stress and 24.02% (n=37) had need for remedial action and 2.59% (n=4) had major problem. In group two, 3.24% (n=5) of them had no stress and 2.59% (n=4) had moderate stress and 1.29% (n=2) had need for remedial action and 0.64% (n=1) had major problem. In group three, 0.64% (n=1) of them had no stress and 1.94% (n=3) had moderate stress and 0% had need for remedial action and 0.64% (n=1) had major problem. Comparing the levels, age between 21-30 years had more stress than other age individuals. On chi-square values, there is no association between stress and age.

Years of experience is used a domain in which it is classified as four categories(Figure 3): < 1 year, 1- 5 years, 6-10 years and >10 years. Candidates within one year of experience, 1.29% (n=2) of them had no stress and 9.09% (n=14) had moderate stress and 1.94% (n=3) had need for remedial action and 0.64% (n=1) had major problem. Between 1- 5 years, 9.74% (n=15) of them had no stress and 38.96% (n=60) had moderate stress and 20.12% (n=31) had need for remedial action and 1.94% (n=3) had major problem. Participants in 6-10 years, 1.29% (n=2) of them had no stress and 3.89% (n=6) had moderate stress and 2.59% (n=4) had need for remedial action and 0.64% (n=1) had major problem. >10 years of experienced candidates 3.24% (n=5) of them had no stress and 3.24% (n=5) had

Table: 1 Association between factors affecting stress and level of stress

Variable		Stress Level				P-Value
		No Stress	Moderate Stress	Need Remedial Action	Major Problem	
Sex	Male	13(8.44%)	51(33.11%)	18(11.68%)	2(1.29%)	0.359
	Female	11(7.14%)	34(22.07%)	21(13.63%)	4(2.59%)	
Age	21-30 years	18(11.68%)	78(50.6%)	37(24.02%)	4(2.59%)	0.043
	31-40 years	5(3.24%)	4(2.59%)	2(1.29%)	1(0.64%)	
	>40 Years	1(0.64%)	3(1.94%)	0	1(0.64%)	
Years of Experience	> 1 Year	2(1.29%)	14(9.09%)	3(1.94%)	1(0.64%)	0.240
	1-5 Year	15(9.74%)	60(38.96%)	31(20.12%)	3(1.94%)	
	6-10 Years	2(1.29%)	6(3.89%)	4(2.59%)	1(0.64%)	
	>10 Years	5(3.24%)	5(3.24%)	1(0.64%)	1(0.64%)	

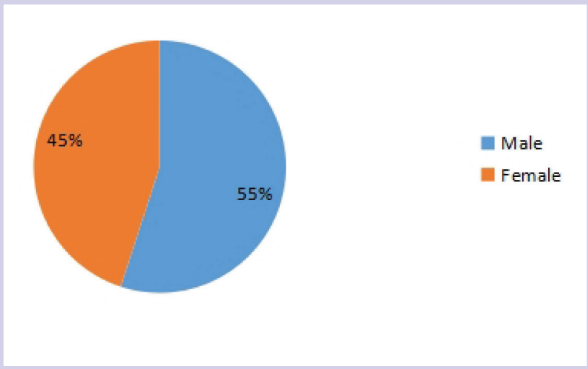

Figure 1: Distribution of study population based on the Gender

Distribution of study population based on the gender shows 55% are Males and 45% are Females(Figure 1).

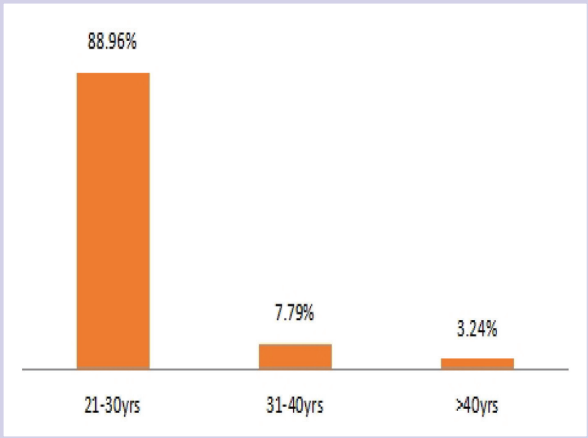

Figure 2: Percentage Distribution of Age in the Study Population

Percentage distribution of age in the study population shows 88.96% are between 21- 30 years of age, 7.79% are between 31- 40 years of age and 3.24% are >40 years of age (Figure 2).

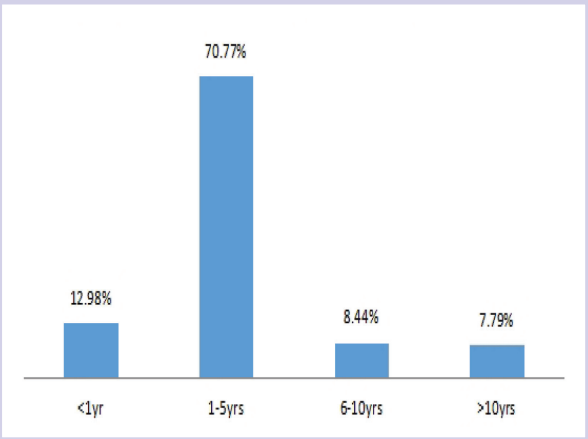

Figure 3: Percentage distribution of the study population based on years of experience

Percentage distribution of the study population based on years of experience shows 12.98% are <1 year, 70.77% are 1-5 years, 8.44% are 6-10 years and 7.79% are >10 years (Figure 3).

Moderate stress and 0.64% (n=1) had need for remedial action and 0.64% (n=1) had major problem. Comparatively, >10 years of experienced people are more stressed. There is no association between years of experience and stress according to our study.

DISCUSSION

In our study we found females are more stressed than males. Our study sample contained more male than female. Other studies reflects similar findings.[1,3,4] Cultural and social influencer also has a major impact on the gender. Through our cross sectional study, stress is more in freshers. [5] Study concludes same stress was more common in the initial years and among those who

work for more duration. Major factor were family support on carrier work culture, lack of technical expertise, work family interference, decreased interaction, change in technology, long working hours, deadlines given to them. [8]

Age group between 21-30 years to be highly stressed compared to other age groups. Under the transition from single to marital status and along with their already existing possible stressful daily chores they have adopt to marital life. When the experiences is >10 years more stress is been experienced because of responsibility and work load. Now, new employees are given better training and are introduced to the profession in a phased manner which might help them to adjust and cope with the profession better.

Hence the results in our study might be affected showing lower stress levels among younger employees compared to their senior counterparts who were not introduced into the profession as the current new employees. [9]

As suggested by animal and human studies, biological mechanisms explaining stress leading to depression involve the dysregulation of stress hormones, i.e., glucocorticoids. [9] Subjects who were professionally stressed had 5.9 times higher prevalence alcohol uses compared to those who were not professionally stressed.

Our study concluded that women have greater risk of depression because of interference of family and work than male population due to house hold work. In another study done in Coimbatore concluded male showed slighter higher stress score than females. This might be due to additional responsibility shouldered by male population for the attainment of physiological needs of the family. Working time limit if it is more than 8 hrs shows high stress score.

CONCLUSION

Our study also finds female and freshers undergo higher amount of stress which is similar to many other studies. The management has major amount of responsibility to provide adequate intervention to reduce stress by conducting development program, frequent counselling, adequate break in between working hours to increase, family get together to increase interaction and family could understand job nature and culture, improve employee relationship. India is a leading sector for IT hub, thus the health of employee is important for a developing country like INDIA. Moderate create amount of stress can lead major health issues, even borderline stress should be identified and intervention done frequent counselling must be conducted to improve IT professionals for better lifestyle, mental and physical health.

CONFLICT OF INTEREST:

The authors declared no conflict of interest.

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