Job Stress and Psychological Problems among Women Information Technology Professionals in India

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Abstract

Introduction: Computers have revolutionized the working scenario in most of the industrial and business sectors around the world and have given a new dimension to the spectrum of occupational health. The impact of computers on the physical, mental and social health of the workers is seldom realized. This study was done to evaluate the job stress and psychological factors among women IT professionals.

Methodology: This cross-sectional study was done among 609 women IT professionals working in an IT company in Chennai. Beck Depression Inventory was used for screening depression. Zung’s self-rating anxiety scale was used for screening of anxiety. Job stress Questionnaire was used to evaluate the job stress among the study participants.

Results: Psychological problems were present in 263(43.2%) of the study participants. Generalized anxiety was present in 41.5% of the participants, while depression was present in 10% of them. The psychological problems had a significant impact on the musculoskeletal problems and carpal tunnel syndrome (p<0.05).

Conclusion: Psychological problems are serious causes of morbidity in individuals, as it not only involves the affected individuals, but also the family members, friends and their social circle. Occupational causes for psychological problems may be rectified by promoting positive work environment, establishing an employee friendly workplace and efforts to strengthen quality interpersonal relationships at workplace.

Keywords: Anxiety, Computer professionals, Depression, Job stress

Introduction

The advent of computers has revolutionized the working scenario in all the occupational sectors in the last two decades. The computers’ era is fast paced, packed with opportunities for millions of job seekers and has thrown open challenges for many new inventions and occupations. The situation is exponential for employees working in the Information Technology (IT) industry. These industries demand prolonged, dynamic and irregular working hours from their employees and impose competitive time bound deadlines.1

Among several factors that influence the occupational...
health and safety, job stress is a key factor. It is defined as ‘a set of psychosocial factors experienced by workers due to working conditions, generated as composite experiences at different levels within the organization’. At the end of the day, the job stress is not restricted to the workplace alone, but its cumulative build up results in several physical, physiological and psychological diseases. The impact of job stress is evident with the burden of anxiety and depression among the employees in the IT industry. The larger problem lies in the impact on quality of life and disruption of relationships with the family members, friends and other peers. A study done on IT professionals in National Capital Region, Delhi revealed that the prevalence of job stress was as high as 35% among the study participants.4

The job of software professional is a stressful one, owing to the inbuilt nature and complexity of it. It is a cyclical process, involving personnel at various levels ranging from business developers, project managers to team leaders and trainees. Studies have identified several stressors involved in this profession, some of them include work related stressors, role related stressors, personal development stressors, interpersonal relationship stressors and organizational climate stressors.5

In spite of being at the helm of technology, majority of IT Professionals are still unaware of the potential hazards of spending long hours in front of computer. Their jobs are more sedentary, require more cognitive processing, mental attention and require less expenditure of energy.6 The intensity and magnitude of the problem increases tumultuously for women professionals, due to their inherent susceptibility and vulnerability to certain health hazards. There are very few studies done in this direction and this study is expected to bring out the possible key areas involved in the job profile, where corrective measures could be reinforced, in order to prevent these psychological problems at workplace and improve the health and safety of IT professionals.

Objectives

- To estimate the prevalence of job stress, anxiety and depression among women IT professionals.
- To evaluate the impact of job stress on the health status of the women IT professionals.

Methodology

Study Design

This cross-sectional study was carried out among women IT professionals working in an IT company in Chennai, which is one of the key software hub in India. The study was carried out for a period of six months.

Study Population

Based on intensive literature review, the prevalence of job stress was found to be 35% among IT professionals in Delhi NCR. At 95% level of significance and 12.5% relative precision, the sample size was estimated as 456.4. Allowing 10% for non-response, the final sample size was arrived at 502. Permission was obtained from one IT company in Chennai, which housed over 22 projects. Out of 22 projects, one project with a population of 703 was selected at random. All the women with over one year of work experience in the IT industry were selected for the study. Pregnant and lactating mothers were excluded. A total of 609 women participated in the study.

Ethical Approval and Informed Consent

Approval from the Institutional Ethics Committee was sought prior to the data collection. Due permissions were obtained from the IT company. Each participant was explained in detail about the study and informed consent was obtained prior to the data collection.

Data Collection

A structured self-administered questionnaire was used to collect information on job stress, depression and anxiety. Beck Depression Inventory was used for screening depression. It comprises of 21 questions on a 4-point scale. Scores range from 0-3 for each question. Interpretation is based on total scores. Zung’s self-rating anxiety scale was used for screening of anxiety. It consists of 20 statements on a 4-point scale. For each statement scores range from 1-4. Total scores range between 20 and 80. Total score of 36 and above suggests the need for further medical assessment of generalized anxiety disorder. Job stress Questionnaire. It consists of 10 questions. Each question scores range from 1-10. Total scores range from 10-100. Scores above 60 indicate the individual is having job stress that need to be solved.

Data Analysis

Data was entered and analyzed using SPSS version 16 software. The prevalence of psychological problems was computed as percentages. The impact of psychological problems on other health problems was computed using chi square test.

Results

This study was done among 609 women IT professionals working in an IT company in Chennai. The mean age of the study participants was 24.9 years. The background characteristics of the study participants are given in Table 1.
The employment profile of the study participants is given in Table 2. It was observed that 26.1% of the participants work for over 10 hours per day in front of the computer. Also, 48.6% of the study participants work with computers even at home, apart from workplace. The duration of work experience is given in Figure 1.

![Graph showing work experience of study participants](image.png)

Figure 1.Work experience of the study participants

The prevalence of psychological problems among the study participants is given in Table 2. The overall prevalence of psychological problems among the study population was 43.2%. Among the study population, 10% were found to have depression, 41.5% had generalized anxiety disorder and 6.1% had severe job stress.

Table 2.Prevalence of psychological problems among the study participants

| S. No. | Psychological problem | Frequency N=609 | Percentage (%) |
|--------|-----------------------|-----------------|----------------|
| 1.     | Depression (score 17 and above) | 61 | 10 |
|        | Borderline clinical depression (17-20) | 23 | 3.8 |
|        | Moderate depression (21-30) | 22 | 3.6 |
|        | Severe depression (31-40) | 16 | 2.6 |
|        | Extreme depression (>40) | 0 | 0 |
| 2.     | Generalized anxiety disorder (Score 36 and above) | 253 | 41.5 |
| 3.     | Job stress | | |
|        | Score 40-60 | 405 | 66.5 |
|        | Score > 60 | 37 | 6.1 |

Overall prevalence of psychological problems: 263 (43.2%) 95% CI -39.26-47.14

Table 3.Impact of psychological problems on other health problems

| S. No. | Psychological problems | Musculoskeletal problems | Carpal tunnel syndrome |
|--------|------------------------|--------------------------|------------------------|
|        |                        | N (%)                    | Chi sq. (p value)      | N (%)                    | Chi sq. (p value) |
| 1.     | Job stress (n=442)    | 335 (75.8)               | 6.07 (0.013)           | 35 (7.9)                 | 8.5 (0.003)     |
| 2.     | Anxiety (n= 253)      | 201 (79.4)               | 8.94 (0.002)           | 24 (9.5)                 | 8.8 (0.002)     |
| 3.     | Depression (n= 61)    | 49 (80.3)                | 1.81 (0.117)           | 11 (18)                  | 16.9(<0.001)   |
The impact of psychological problems on health problems among the study participants is given in Table 3. It was observed that job stress and anxiety had a strong impact on musculoskeletal problems and carpal tunnel syndrome (p<0.05). Depression was strongly associated with carpal tunnel syndrome (p<0.001).

Discussion

Occupations of different types may be associated with specific types of stressful life events that contribute to psychological disorder. India, being a major service provider to IT industry, more than 2.5 million people are employed in this sector either directly or indirectly, creating a new genre of occupational diseases, called computer related health problems.

In the present study, 10% women were found to be depressed and 3.6%, 2.6% were found to have moderate and severe depression respectively. In a study conducted in Delhi by Sharma et al. reported the prevalence of depression among IT professionals as 8% which was slightly lower than the present study. This difference observed may be because the present study includes only female subjects. In a study done in Chennai by Poongothai et al. among urban south Indian population, the overall prevalence of depression was 15.1% and 16.3% for females. When compared to the present study the prevalence is higher, because of the difference in study population. In the present study, the prevalence of generalized anxiety disorder among the subjects was 41.5%. In a study done by Murali et al. in Mysore analyzed ten Indian studies on psychiatric morbidity and reported that the prevalence of anxiety as 18.5% which is lower than the present study. The prevalence is higher in the present study may be due to the work pressure experienced by the women IT professionals.

In the present study, 6.1% of subjects were found to have job stress that need to be solved and moderately managing job stress were among 66.5% of the participants. Zaki Rashidi et al. reported that the prevalence of stress among IT professionals was ranging between 30%-40% and among Software developers it was 40%. A study done in Chennai by Balasubramaniam et al. showed that 28% of employees experienced high overall stress by women IT professionals. In the current study, the possible reasons for lower prevalence might be due to lesser work experience of the study participants.

The IT professionals have long work hours, team work, task to be completed on deadline with perfection as per client needs, which requires interpersonal, technical and organizational competencies. These characteristics lead to occupational stress and work exhaustion. Women bear the extra stress of worrying about domestic factors – work and home conflict are associated with high stress in employed women and such stress takes its toll on a woman's physical and mental health. Women who had any psychological problem were advised to consult a psychologist for further assessment and advice.

In the current study, it was found that the subjects with job stress were found to have more musculoskeletal problems (75.8%) compared to those without job stress (65.9%) and have 1.62 times greater risk of developing musculoskeletal problems. The above difference was found to be statistically significant (p value = 0.013). The results were similar for subjects with anxiety with 1.77 times more risk of developing musculoskeletal problems compared to normal subjects and the difference was found to be statistically significant (p value = 0.002).

On the basis of research by NIOSH, it is believed that job stress increases the risk for development of back and upper-extremity musculoskeletal disorders. A study done by Lindsay et al. in Georgia also confirmed the above findings in his study among occupational computer users.

Conclusion

The health problems as observed in this study make it imperative for the women in IT to take a serious note of it. The organizations and the women entering an IT sector need to be sensitized regarding the importance of regular health checkups and proper working conditions. The IT professionals probably need long term on-site preventive programs, continuous motivation and health education. Action to prevent the health problems will increase employees’ productivity and decrease long term costs incurred by having to deal with illness, absenteeism and public discontent.

Conflict of Interest: None

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