

A Study on Measuring the Relationship Between Stress Indicators and Work Life Balance among Women Employees of IT Companies in Chennai City Using Multiple Regression

¹J. Sathyapriya, ¹V. Subhamathi and ²V. Krishnapriya

¹Department of Management Studies, Periyar Maniammai University,
Vallam, 613403 Thanjavur, India

²Department of Management Studies, Sathyabama University, Chennai, India

Abstract: The analysis indicates that the majority of women employees belong to the age group of 26-30 years and more than one third of the women employees are BE(IT) graduates who are working as software developers. The results show that about two-third of women employees belong to the monthly income group of Rs. 25001-30000 and the majority of women employees are married and about more than one-third of women employees have the total experience of 2-4 years followed by <2 years (29.33%), 4-6 years (25.00%) and >6 years (6.67%). The results indicates about 58.66% of women employees are facing high level of organisational stress followed by very high (21.67%) and medium level (19.67%) and there is a significant difference between the organisational stress levels among the women employees in IT sector. The ANOVA test to examine the difference between stress indicators among the women employees in IT sector, The F-value of 75.474 is statically significant at 1% level indicating that there is a significant difference between stress indicators among the women employees in IT sector. The multiple regression analysis show that the apathy, depression, sleeplessness, disharmony with colleagues, confusing, excessive grooming and shivering are statistically significant at 1% of level and these indicators are positively influencing the work life balance of women employees. The recurrent minor illnesses, excessive use of alcohol or other substances, avoidance of meeting people and blinking are also statistically significant at 5% of level and these indicators also are positively influencing the work life balance of women employees.

Key words: IT sector, organizational stress, software companies, stress related diseases, stress indicators, work life balance, women employees

INTRODUCTION

Stress is the word, which is becoming very popular these days among the corporate houses particularly in information sector. Occupations in the field of human services “are considered to be high stress occupations, dealing with pervasive social as well as individual problems” (Garske, 1999). Occupational stress is a harmful physical and emotional responses that occur when requirements of jobs do not match capabilities, resources or needs of the workers and can lead to poor health and relationships not only in the work place and also it has considerable impact on family life.

In addition, high turnover, low job satisfaction and high job availability inevitably translates into less educated and under-trained individuals assuming occupational roles that may be beyond their capabilities (Barrett *et al.*, 1997). Stress affects individuals not only

psychologically by manifesting as anxiety or depression but also physically. Physical stress symptoms include “anything from ulcers and digestive upsets to coronary problems” (Minirth *et al.*, 1986). Stress also interacts negatively with job satisfaction and inter personal relationships among the workers, performance (Jex, 1998; McGuigan, 1999) and commitment. Stress and its’ impact upon occupational functioning is a major factor in reduced productivity (Glasser, 1984; McGuigan, 1999).

A great deal of work has been done to elucidate the connection of specific job conditions to physical and/or mental health. The poor mental health was directly related to unpleasant work conditions such as the necessity to work fast, the exertion of great physical effort and inconvenient working hours. There is increasing evidence that physical health too, is adversely affected by repetitive work and dehumanizing environment such as

the paced assembly line. Stress can arise from isolation or from conflict. In the latter case, it can stem from rejection by co-workers or from perceived discrimination. Contact with the public can also create stress, especially when it involves prejudice, hostility or physical danger. Stress is a complex and multivariate process. Diverse measures of occupational stress such as psychological health, anxiety and job satisfaction are often used interchangeably. The following are the major stress indicators used for women employees: lack of focus or attention, avoidance, yawning, increase frequency of urination or defecation, vomiting and diarrhea, drooling, stretching, shaking, confusion, excessive grooming, sleeping excessively, excessive thirst, stiffness, shivering, whining, mouthiness, hyperactivity, blinking, moving excruciatingly slowly, sitting or laying down. With this background, the present study is attempted to measure the relationship between stress indicators and work life balance of women employees in IT sector in Chennai.

Review of literature: Rapidly changing global scene was increasing the pressure of workforce to perform maximum output and enhance competitiveness. Indeed to perform better to their job, there was a requirement for workers to perform multiple tasks in the workplace to keep abreast of changing technologies (Cascio, 1995; Quick, 1999). The ultimate results of this pressure had been found to one of the important factors influencing job stress in their work (Chan *et al.*, 2000).

Ganster and Schaubroeck (1991) pointed that women experienced the greater level of stress as they were more vulnerable to the demands of work to the extent that they often have more non-work demands than men. Gregory (1990) notified that for the female professional, gender stereotyping in the workplace added to the role conflict stress experiences while Comish and Swindle (1994) explained that role demands such as that of being wife, mother and professional provoked role conflict. Fotinatos-Ventouratos and Cooper (2005) revealed significant differences in terms of physical and psychological wellbeing amongst the male and female sample. Staff employed at the higher job levels were found to be less stressed than those employed at the lower job levels (Dua, 1994). As well, different levels of management influenced preference for stress coping styles, specifically as it was progressed towards the more senior levels of management, delegation and maintaining style relationships were considered the most useful forms (Kirkcaldy and Furnham, 1999).

Vinokur-Kaplan (1991) stated that organisation factors such as workload and working condition were negatively related with job satisfaction. Fletcher and

Payne (1980) identified that a lack of satisfaction could be a source of stress while high satisfaction could alleviate the effects of stress. This study revealed that both of job stress and job satisfaction were found to be interrelated. The study of Landsbergis (1988) showed that high levels of work stress were associated with low levels of job satisfaction. Low job satisfaction correlated with contemplation of giving up work due to stress there was a negative correlation between job stress and job performance. Those subjects who had high level of job stress had low job performance (Dowell, 2001) and such stresses increased the chances of fatal errors lowering job performance (Kazmi, 2007).

MATERIALS AND METHODS

Statement of the problem: Stress appears to be a common denominator in the description of contributing factors to workplace violence. The companies downsize, reorganize, reengineer and demand more of each employee, stress levels increase to the breaking point, causing work related stress to escalate. High levels of tension are inherent in the aggressive behavior at work including lack of cooperation, spreading rumors or gossip, arguing, belligerency and the use of offensive language. As the stress level increases, so does the levels of aggression involving verbal threats, feeling of prosecution, sabotage, destruction of property, physical fights and the use of weapons. Everyday interpersonal work relations may also breed hostility, aggressive behavior and high levels of tension. In addition to the competitive nature of work, other reasons for high stress are reported as: unreasonable expectations in work accomplishments, authoritarian management and hopelessness about economic conditions, downsizing, mergers and layoffs.

Mismanaged stress and accumulated tension do not go away over-time but become a potential threat for more damaging consequences. Stress management can be a cornerstone of violence prevention efforts in organizations. Identification of stress inducing factors has been noted as essential for risk management in violence prevention. Assessment of stress-related factors such as workload, management style, work environment and culture and degree of support for prevention programmes can identify the stress levels experienced by the workers. Assisting employees to avoid high levels of tension can prevent an outburst of workplace violence and stress related diseases.

Scope of the study: Every women respond to stress in a different way, it is only by understanding the nature of individual responses that will be useful for fighting stress

herself and others. Reduction or elimination of stress is necessary for psychological and physical well being of an individual. The present study will be helpful to extend certain suggestions incorporating the impact of role stress assessed from the women employees and the influence of the stress dimensions of role set and space on the same that will enable in throwing upon a diagnostic review on the current organizational systems and scope for improvements and growth in several areas that will facilitate in women empowerment and overall increase in employee involvement in organizational activities.

Efficiency in stress management enables the individual to deal or cope with the stressful situations instead of avoidance. Strategies for stress management, body-mind and mind-body relaxation exercise and seeking social support help individual improve their physical and mental resources to deal with stress successfully. Apart from helping employees adopt certain coping strategies to deal with stress providing them with the service of counselor is also useful. Many strategies can be developed to help manage stress in the work place.

Objective of the study: To measure the relationship between stress indicators and work life balance of women employees in IT sector in Chennai City.

Hypothesis of the study:

- There is no significant difference between stress indicators of the women employees in IT sector
- There is no significant influence of stress indicators on work life balance of women employees in IT sector

Area of the study: Chennai City was chosen for this study. Chennai is on the Southeast coast of India in the Northeast of Tamil Nadu on a flat coastal plain known as the Eastern Coastal Plains. Chennai is next to Bangalore as far as a software export is considered. Many software and software services companies have development centers in Chennai.

Sources of data

Primary data: The data and information was collected from the primary source of women employees through pre-tested, structured interview schedule by direct interview method.

Secondary data: The data and information was collected from the secondary sources of journals, research papers, research reports, conference proceedings, magazines, newspapers and websites.

Sampling technique: The City of Chennai has been selected to conduct study to measure the relationship

between stress indicators and work life balance of women employees in IT companies and accordingly the women employees have been selected in random. Each individual is chosen randomly and entirely by chance. Based on the women employees' response through pretest, 300 women employees were selected for the present study.

Data analysis and statistical techniques

Data analysis: The analysis has done through SPSS 16 (Statistical Package for Social Sciences).

Statistical techniques

Descriptive statistics: In order to understand the demographic features, stress dimensions, stress indicators, stress related diseases and level of stress of the women employees in IT sector, the percentage analysis and frequency distribution have been worked out.

Analysis of Variance (ANOVA): In order to study the difference among job stress dimensions, stress indicators and stress related diseases and between stress levels and stress related diseases among different categories of women employees in IT sector, the Analysis of Variance (ANOVA) has been employed and the formula is:

$$F = \frac{\text{Variance between samples}}{\text{Variance within samples}}$$

i.e.,

$$F = \frac{\text{Greater variance}}{\text{Smaller variance}}$$

Multiple regression: In order to study the effect of stress on job satisfaction of women employees, influence of stress indicators on work life balance of women employees and the effect of stress related diseases on stress levels of women employees in IT sector, the multiple linear regression analysis by Ordinary Least Square (OLS) estimation has been applied. The functional form of multiple liner regression models are given below:

$$Y = \alpha + \beta_1 X_1 + e_i$$

Where:

Y = Dependent variable-job satisfaction/work life balance/stress levels

X_i = Independent variable-effect of stress/stress indicators/stress related diseases

i = 1 to n

α = Intercept

β_i = Partial regression coefficients

e_i = Random error or stochastic disturbance term

The α and β_i are the coefficients which are to be calculated through Ordinary Least Square (OLS) estimation.

RESULTS AND DISCUSSION

Socio-economic characteristics of women employees: The socio-economic characteristics of women employees were analysed and the results are presented in Table 1. The results indicate that the majority of women employees (60.00%) belong to the age group of 26-30 years followed by 31-35 years (23.00%), 21-25 years (13.33%) and >35 years (3.67%). It is apparent that more than one third of the women employees (34.66%) are B.E. (IT) followed by BE(CS) (24.00%), MCA (16.67%), MBA (14.00%) and the other educational qualifications are varying from Msc (IT) (6.67%) to M Tech (CS) (0.67%).

The results show that about 65.33% of women employees earn monthly income of Rs. 25001-30000

followed by Rs. >25000 (18.67%), Rs. 30001-35000 (11.00%) and Rs. >35000 (5.00%). The results indicate that about 90.67% of the women employees are married while the rest of 9.33% are married and about 39.00% of the women employees have the total experience of 2-4 years followed by <2 years (29.33%), 4-6 years (25.00%) and >6 years (6.67%).

Stress indicators and work life balance of women employees

Stress indicators of women employees: The distribution of stress related diseases of women employees in IT sector were worked out and the results are presented in Table 2:

- H_0 = There is no significant difference between stress indicators of the women employees in IT sector

The results show that about 72.34% of women employees in IT sector strongly agree with the apathy as

Table 1: Socio-economic characteristics of women employees

Particulars	Women employees (N = 300)		Particulars	Women employees (N = 300)	
	Frequencies	Percentage		Frequencies	Percentage
Age (Years)			Educational qualification		
21-25	40	13.33	BE (CS)	72	24.00
26-30	180	60.00	BE (IT)	104	34.66
31-35	69	23.00	BTech (CS)	4	1.33
>35	11	3.67	MTech (CS)	2	0.67
Marital status			ME	6	2.00
Married	272	90.67	MBA	42	14.00
Unmarried	28	9.33	MCA	50	16.67
Working experience (years)			MSc (IT)	20	6.67
<2	88	29.33	Monthly income (Rs)		
2-4	117	39.00	<25000	56	18.67
4-6	75	25.00	25001-30000	196	65.33
>6	20	6.67	30001-35000	33	11.00
			>35000	15	5.00

Primary data

Table 2: Stress indicators of women employees in IT sector

Stress indicators	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Total
Apathy	217 (72.34)	33 (11.00)	10 (3.33)	25 (8.33)	15 (5.00)	300 (100.00)
Depression	184 (61.33)	33 (11.00)	31 (10.33)	29 (9.67)	23 (7.67)	300 (100.00)
Sleeplessness	192 (64.00)	49 (16.34)	21 (7.00)	19 (6.33)	19 (6.33)	300 (100.00)
Recurrent minor illnesses	24 (8.00)	173 (57.67)	42 (14.00)	28 (9.33)	33 (11.00)	300 (100.00)
Disharmony with colleagues	152 (50.67)	97 (32.33)	25 (8.33)	12 (4.00)	14 (4.67)	300 (100.00)
Decline in efficiency and productivity	214 (71.33)	43 (14.33)	16 (5.33)	17 (5.67)	10 (3.33)	300 (100.00)
Compulsive eating	61 (20.33)	112 (37.33)	39 (13.00)	47 (15.67)	41 (13.67)	300 (100.00)
Excessive use of alcohol or other substances	10 (3.33)	15 (5.00)	62 (20.67)	165 (55.00)	48 (16.00)	300 (100.00)
Smoking	78 (26.00)	92 (30.67)	49 (16.33)	51 (17.00)	30 (10.00)	300 (100.00)
Avoidance of meeting people	86 (28.67)	64 (21.33)	49 (16.33)	63 (21.00)	38 (12.67)	300 (100.00)
Yawning	132 (44.00)	74 (24.67)	55 (18.33)	21 (7.00)	18 (6.00)	300 (100.00)
Stretching	140 (46.67)	67 (22.33)	63 (21.00)	14 (4.67)	16 (5.33)	300 (100.00)
Shaking	119 (39.66)	80 (26.67)	27 (9.00)	39 (13.00)	35 (11.67)	300 (100.00)
Confusing	114 (38.00)	73 (24.24)	49 (16.33)	42 (14.00)	22 (7.33)	300 (100.00)
Excessive grooming	52 (17.33)	51 (17.00)	142 (47.33)	23 (7.67)	32 (10.67)	300 (100.00)
Excessive thirst	75 (25.00)	115 (38.33)	56 (18.67)	44 (14.67)	10 (3.33)	300 (100.00)
Stiffness	153 (51.00)	63 (21.00)	28 (9.33)	32 (10.67)	24 (8.00)	300 (100.00)
Shivering	40 (13.33)	50 (16.67)	135 (45.00)	45 (15.00)	30 (10.00)	300 (100.00)
Mouthiness	122 (40.66)	59 (19.67)	47 (15.67)	30 (10.00)	42 (14.00)	300 (100.00)
Blinking	72 (24.00)	148 (49.33)	33 (11.00)	27 (9.00)	20 (6.67)	300 (100.00)

The figures in the parentheses are percentage to total; primary and computed data

a major stress indicator followed by decline in efficiency and productivity (71.33%), depression (64.00%), stiffness (51.00%), disharmony with colleagues (50.67%), stretching (46.67%), yawning (44.00%), mouthiness (40.66%), shaking (39.66%) and confusing (38.00%) as perceived by them.

The results also indicate that about 57.67% of the women employees of IT sector agree with the recurrent minor illnesses as a stress indicator followed by blinking (49.33%), excessive thirst (38.33%), compulsive eating (37.33%) and smoking (30.67%) based on their perceptions. The women employees in IT sector are neither agreed nor disagreed with excessive grooming (47.33%) and shivering (45.00%) while about 55.00% of women employees of IT sector disagree with excessive use of alcohol or other substances as stress indicators. In order to examine the difference between stress indicators among the women employees in IT sector, the ANOVA test has been employed and the results are presented in Table 3.

The F-value of 75.474 is statically significant at 1% level indicating that there is a significant difference between stress indicators among the women employees in IT sector. Hence, the null hypothesis of there is no significant difference between stress indicators among the women employees in IT sector is rejected.

Influence of stress indicators on work life balance of women employees:

In order to analyze the influence of stress indicators on work life balance of women employees, the multiple linear regression analysis by Ordinary Least Square (OLS) estimation was carried out and the results are presented in Table 4. The stress indicators are considered as independent variables and the work life balance of women employees are considered as dependent variable.

- H_0 = There is no significant influence of stress indicators on work life balance of women employees in IT sector

The results show that the coefficient of multiple determination $R^2 = 0.82$ and adjusted $R^2 = 0.79$ indicating that the regression model is good fit. It is inferred that about 79.00% of the variation in dependent variable (Work Life Balance) is explained by the independent variables (stress indicators). The F-value of 27.928 ($p = 0.00$) indicates that the regression model is good fit between stress indicators and work life balance of women employees.

The apathy, depression, sleeplessness, disharmony with colleagues, confusing, excessive grooming and

Table 3: Stress indicators-Analysis of Variance (ANOVA)

Source	SS	DF	MS	F	Sig.
Between groups	1282.754	4	320.689	-	-
Within groups	25475.945	5995	4.249	75.474	0.000
Total	26758.699	5999	-	-	-

Primary and computed data

Table 4: Influence of stress indicators on work life balance of women employees-multiple regression

Stress indicators	Regression coefficients	t-value	Sig.
Intercept	2.046**	5.420	0.01
Apathy (X_1)	0.148**	4.329	0.01
Depression (X_2)	0.266**	4.106	0.01
Sleeplessness (X_3)	0.229**	3.792	0.00
Recurrent minor illnesses (X_4)	0.217*	2.192	0.02
Disharmony with colleagues (X_5)	0.212**	3.648	0.01
Decline in efficiency and productivity (X_6)	0.116	1.178	0.46
Compulsive eating (X_7)	-0.134	1.246	0.38
Excessive use of alcohol or other substances (X_8)	0.136*	2.310	0.03
Smoking (X_9)	0.129	1.124	0.29
Avoidance of meeting people (X_{10})	0.210*	2.228	0.03
Yawning (X_{11})	-0.121	1.016	0.31
Stretching (X_{12})	0.149	1.163	0.37
Shaking (X_{13})	-0.163	1.098	0.39
Confusing (X_{14})	0.198**	3.204	0.00
Excessive grooming (X_{15})	0.175**	3.341	0.01
Excessive thirst (X_{16})	0.142	1.024	0.39
Stiffness (X_{17})	0.193	1.162	0.26
Shivering (X_{18})	0.201**	3.620	0.00
Mouthiness (X_{19})	0.124	0.986	0.32
Blinking (X_{20})	0.151*	2.098	0.03
R^2	0.82	-	-
Adjusted R^2	0.79	-	-
F	-	27.928*	0.00
N	300	-	-

*, ** indicates significant at 5 and 1% leve

shivering are statistically significant at 1% of level and these indicators are positively influencing the work life balance of women employees.

The recurrent minor illnesses, excessive use of alcohol or other substances, avoidance of meeting people and blinking are also statistically significant at 5% of level and these indicators also are positively influencing the work life balance of women employees.

The forgoing analysis indicates that the majority of women employees belong to the age group of 26-30 years and more than one third of the women employees are BE (IT) graduates. The results show that about two-third of women employees belong to the monthly income group of Rs. 25001-30000 and the majority of women employees are married and about more than one-third of women employees have the total experience of 2-4 years followed by <2 years (29.33%), 4-6 years (25.00%) and >6 years (6.67%). The results indicates about 58.66% of women employees are facing high level of organisational stress followed by very high (21.67%) and medium level (19.67%) and there is a significant difference between the organisational stress levels among the women employees in IT sector.

The ANOVA test to examine the difference between stress indicators among the women employees in IT sector, the F-value of 75.474 is statically significant at 1% level indicating that there is a significant difference between stress indicators among the women employees in IT sector. The multiple regression analysis show that the apathy, depression, sleeplessness, disharmony with colleagues, confusing, excessive grooming and shivering are statistically significant at 1% of level and these indicators are positively influencing the work life balance of women employees. The recurrent minor illnesses, excessive use of alcohol or other substances, avoidance of meeting people and blinking are also statistically significant at 5% of level and these indicators also are positively influencing the work life balance of women employees.

CONCLUSION

In order to reduce effect of stress at work and make the employees to be satisfied, proper work-leisure balance strategies should be adopted. The practices of Yoga and meditation should be practiced by women employees for balancing work consequences besides proper mediation. It is also suggested that effective use of individual and organisational strategies may reduce the possibilities of stress among women employees. At the organisational level, pre and post departure training, language training cross-cultural training are needed to be implemented and they should be regularly monitored. At the individual level, women employees should be supported by the family and friends.

REFERENCES

- Barrett, K., T.F. Riggat, C.R. Flowers, W. Crimando and T. Bailey, 1997. The turnover dilemma: A disease with solutions. *The J. Rehabilitation*, 63 (2): 36-47.
- Cascio, W.F., 1995. Wither industrial and organizational psychology in a changing world?. *Am. Psychol.*, 50: 928-939.
- Chan, K.B., G. Lai, Y.C. Ko and K.W. Boey, 2000. Work Stress among Six Professional Groups: The Singapore Experience. *Soc. Sci. Med.*, 50 (10): 1415-1432.
- Comish, R. and B. Swindle, 1994. Managing Stress in the Workplace. *National Public Accountant*, 39(9): 24-28.
- Dowell, A., 2001. A survey of job satisfaction, sources of stress and psychological symptoms among new Zealand health professionals. *New Zealand Med. J.*, 114: 540-544.
- Dua, J.K., 1994. Job Stressors and their Effects on Physical Health, Emotional Health and Job Satisfaction in a University. *J. Edu. Administration*, 32 (1): 59-78.
- Fletcher, J.B. and R. Payne, 1980. Stress and work: a review and a theoretical framework. *Personnel Review*, 9: 1-20.
- Fotinos-Ventouratos, R. and C. Cooper, 2005. The Role of Gender and Social Class in Work Stress. *J. Managerial Psychology*, 20 (1):14-23.
- Ganster, D.C. and J. Schaubroeck, 1991. Work Stress and Employee Health. *J. Manage.*, 17 (2): 235-271.
- Garske, G.G., 1999. Rehabilitation Counselor Job Satisfaction: Self-Reported Rating and Recommendations. *J. Rehabilitation Administration*, 23 (1): 21-29.
- Glasser, M.A., 1984. Labor Looks at Work Stress. In: Krinsky, L.W., S.N. Kieffer, P.A. Carone and S.F. Yolles (Eds.), *Stress and Productivity*. Human Sciences Press, Inc., New York, pp: 55-64.
- Gregory, A., 1990. Are Women Different and Why are Women Thought to Be Different? Theoretical and Methodological Perspectives. *J. Business Ethics*, 9 (4/5): 257-266.
- Jex, S.M., 1998. *Stress and Job Performance: Theory, Research, and Implications for Managerial Practice*. SAGE Publications. Thousand Oaks, CA.
- Kazmi, R., 2007. Occupational Stress and its Effects on Job Performance: A Case Study of Medical House Officers of District Abbottabad. *First Proceedings of International Conference on Business and Technology*, Iqra University, Islamabad, pp: 182-186.
- Kirkcaldy, B. and A. Furnham, 1999. Stress Coping Styles among German Managers. *J. Workplace Learning*, 11 (1): 22-26.
- Landsbergis, P.A., 1988. Occupational Stress among Health Care Workers: A Test of the Job Demands-Control Model. *J. Organizational Behav.*, 9: 217-239.
- McGuigan, F.J., 1999. *Encyclopedia of Stress*. Allyn and Bacon, Needham Heights, MA.
- Minirth, F., D. Hawkins, P. Meir and R. Flournoy, 1986. *How to Beat Burnout* Moody Press, Chicago.
- Quick, J.C., 1999. Occupational health psychology: the convergence of health and clinical psychology with public health preventive medicine in an organizational context. *Professional Psychology: Research and Practice*, 30 (2): 123-128.
- Vinokur-Kaplan, J.X., 1991. Job Satisfaction among Social Workers in Public and Voluntary Child Welfare Agencies. *Child Welfare*, 15 (5): 81-91.