

ASSESSING JOB STRESS: DEVELOPMENT OF AN INVENTORY AND RELATIONSHIP WITH MANAGERS' INTENTION TO STAY

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Abstract *In order to ascertain the specific causes of job stress, it is important to measure it accurately. The present paper made a modest attempt to develop a job stress inventory through factor-analytic approach. Two-hundred-and-seventy-six practicing managers from various companies took part in the study, answering the initial pool of 66 items of job stress of which finally 38 items were retained under five meaningful factors, such as distressful and agonizing job feelings, perceived neglect and fear of supervisors, fear of attrition, stressful work conditions, insecurity, etc. The psychometric properties of items and Cronbach's Alpha Reliabilities calculated for subscale were quite satisfactory, ranging from .95 to .80. The Pearson's correlation coefficient with subscales and intention to stay were found to be negative. The findings suggest that stressed managers are not satisfied and are inclined to leave the organization at the very first opportunity, resulting in their inability to contribute to organization's potential and productivity.*

Keywords: *Job Stress, Intention to Stay, Mental and Physical Disturbance, Stressful Work, Agonizing Job Feelings*

INTRODUCTION

The concept of job stress proliferates primarily due to its adverse effects on individual as well as organizational levels. It affects individuals' mental and physical ability and eventually affects the organizations' overall productivity. Struggling to live up to expectations, cut-throat competition, and the lure of higher positions and pay, all cause a great deal of stress within employees, which can collectively be termed as job stress. Stress is understood as disagreement between external environment (workplace) conditions and the employees' feelings towards negative emotional and physical pressure. If it continues for longer time, it creates various mental and physical health issues, which are the matter of great concern to everyone working in the organization.

JOB STRESS

The definition of stress is still evolving (Malagris & Fiorito, 2015). It is a concept, which has influenced almost all fields, particularly workplace. Work is unavoidable, but increasingly, so is the stress associated with it (Angelica et al., 2015). Stress causes physical and emotional exhaustion, leading to ill health (Trindade & Lautert, 2010). Further, it is subdivided in three phases: the alert, resistance, and

exhaust (Malagris & Fiorito, 2015; Matos & Jacome, 1998; Jerrold, 2002). Potential causes for stress are: working hours, monetary issues, working environment, lack of independency, job insecurity (Serra, 2011; Ferreira, 2015). There are various factors which make individuals subject to stress (Matos, 1998), i.e. environmental - result of external stimuli (stressor), and personal evaluation (appraisal) of the same, psychological - mental, emotional, and behavioural functions (Kahn & Byosiore, 1992), sociological (unemployment) and physiological (Jerrold, 2002). There are four perspectives to understand job stress: a) response-based view, cognitive, physiological and behavioural, b) stimulus-based view - analogy to job stress, c) interactional view - interplay between two distinct stressors, and d) transactional view - person-environment mutual relationship.

Thus, job stress is a forceful process in which personal cognitive assessments of job-related stressors produce damaging health and/or behavioural strain outcomes. It is understood as a situation where leadership and interpersonal problems are prominent and employees are unable to cope with the demand of the situation (Pereira, 2014). Stress occurring at a workplace is spreading like a chronic disease, caused by conditions in the workplace that negatively affect an individual's performance and overall well-being of his/her body and mind. Job stress is negatively related to performance (Setar et al., 2015).

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Understanding mental workload still vastly lacks theoretical coherence (Matthew et al., 2014; Mandrick et al., 2016; Young et al., 2015). Though there are various definitions being proposed, all include different workload variables based on different fields of application, beliefs, and even intuition (Longo, 2015; Young & Stanton, 2002).

INTENTION TO STAY

Intention to stay is the converse of turnover intention, which consistently demonstrates negative relationship with turnover (Kim, Price, Mueller, & Watson, 1996; Black & Stevens, 1989; Tett & Meyer, 1993; Igharia & Greenhaus, 1992). It is a positive aspect of work, which makes employees willingly work and commitment towards the organization (Liu, 2010; Hewitt, 2004).

JOB STRESS AND INTENTION TO STAY

Job stress and its effects on mental illness, i.e., depression, anxiety, and other (psychiatric) symptoms, are related to employees' inclination to leave the job (Braaten, 2000). It was found that more stress leads to more employee turnover intentions (Kavanagh, 2005; Cropanzano, Rapp, & Bryne, 2003). Further, job stress is positively related to intent to leave present employment (Williams, 2003; Layne, Hohenshil, & Singh, 2001). Certain parameters like partiality at workplace, ill-treatment and pestering, non-cooperative and non-supportive management relationships, lack of safety and security, etc., may lead to job stress which make employees decision easy, to stay or leave the organization (Bothma & Roodt, 2013; Kumar & Govindarajo, 2014).

OBJECTIVES OF THE STUDY

In view of the above, the main objectives of the study were:

- Available studies related to dimensions of job stress tests (Ferreira & Sérgio, 2015; Rui, Esteves, & Gomes, 2014; Mahmood, Coons, Guy, & Pelletier, 2010) are mostly from health or IT sectors. It is required to search for new meanings in the domain concept of job stress, which could be applicable across multiple sectors. The present study is an attempt to develop a scale of job stress inventory to refine some of the constructs evaluated by the researchers as measuring job stress, through factor analytic approach and also make available for Indian people as an indigenous scale.
- To validate job stress dimensions through an assessment of intention to stay of the managers in organizations as a test of job stress for predicting individually and/or organizationally valued outcomes

METHOD

Development of Job Stress Inventory

Using framework of Selye Hans (1976) and Robbins et al. (2002) who have defined stress as one of the crucial workplace problems, items related to measure the job stress were initiated. Studies of Brief & Aldag, (1976), Greene, (1972), Katz & Kahn, (1978), Wynne et al., (1993, 1994), Brook (1973), Ivancevich & Matteson (1980a, 1980b), Pejtersen, Kristensen, Borg, & Bjorner (2010), Lindstrom, Elo, Skogstad, et al. (2000), Sims, Szilagyi, & Keller (1976), Lambert, Hogan, Camp, & Ventura (2006), Mahmood, Coons, Guy, & Pelletier (2010), Judge et al., (1994), etc., were also reviewed to prepare items related to job stress. The items were prepared based on what is experienced on day-to-day basis in working situation and reactions to such an experience. Negative aspect signifies that individual has higher level of stress, letting his self-esteem go down during the stressful situation. Largely, negative and severe reactions to ongoing events or stimuli of life are indicative of poor emotional intelligence. Thus, job stress items were designed to encompass stress expression from various events of job, experience, related to stress and reaction to them, besides indicating how individuals take them through and optimistic approach or in a way that signifies grumpiness. The feeling towards boss, lack of manpower, infrastructures, perspective on things (positive or negative outlook), or having physical problem created due to job related issues, etc., all were covered in the initial pool of items as a dictionary of job stress. It was related to the job distress and agonizing job feelings, perceived neglect and fear of supervisor, feeling of attrition, stressful work, and insecurity-related stress.

The statement written with the above-mentioned concepts were to be rated on a 7-point scale ranging from 1- "not at all true to me" to 7- "to a great extent true to me". Higher score was key to present higher job stress, whereas lower score represented low job stress. Constructing job stress inventory with subscales needs proper classification of items into a set of piles either through an intuitive judgment approach or a factor-analytic approach. In the present case, latter approach was adopted for the classification of items and developing a summated scoring procedure.

Sample

The study was conducted in various organizations located in western India. Obtaining the sample in a manner that ensures sticking to probability sampling with opportunity sampling bias is suggestive of including divergent elements that represent wider application advantage. Thus, the sample represented a cross-section of industries with their managers with varied personal backgrounds and different in functions, roles, and responsibilities. The heterogeneity of the sample

ensured varying levels of personal attainments in the organization for validating job stress scale.

In all, 276 managers responded to the questionnaire, of which 56 percent belonged to upper management and 44 percent belonged to middle management cadre. The age of the respondents varied from 22 to 55 years (mean = 38.83, SD = 11.20). The work experience ranged from 4 to 23 years.

DATA ANALYSIS

The 66 items responses were subjected to principal Axis Factoring methods with Kaiser Normalization and varimax rotation. Several attempts were made to arrive at a factor structure that parsimoniously classifies items into minimum number of factors, explaining maximum possible variance. The number of factors initially obtained with eigenvalue of 1.00 or more were 10, which were rejected in favour of better solutions. After attempting for a better and acceptable solution, 5-factor solution was adjudged as more meaningful than a solution with more or less than 10 factors. Finally, five factors were retained. In order to validate the inventory correlations were computed between job stress dimensions and intention to stay.

RESULTS

Dimensions of Job Stress

The responses to 66 items of job stress inventory yielded 10 factors with the default eigenvalue being 1.0. After a careful examination of the item loading for factors that were falling between 7 and 10, it was noted that items were either loaded on a single factor or multiple loadings occurred, factor loadings did not yield clear direction. In view of the above, it was decided that less number of factors be extracted that would give a clear loading and clustering of variables would be meaningful. Hence, five factors solution was obtained, which was expressing clear factors indicating to job stress. These five factors clearly indicate the dimensions of job stress. Each of these was rotated for varimax criterion for better interpretation. After close examinations of various rotated factor structures, a factor solution with five factors was accepted; each factors was clear with meaningful loadings. However, at this stage, reliability analysis was also done for checking corrected items to total correlations for the group of items clustered under each factor. Factors which were dissimilar on item content were rejected. Finally, five factors were accepted. Table 1 reports factor loadings for five factors.

Table 1: Principal Axis Factor Analysis of Job Stress items with Varimax Rotation

F 1. Distress and Agonizing Job Feelings

Item No.	Items	F1	F2	F3	F4	F5
62	I develop severe headache when I think about searching for a new job.	86				
63	I am anxious when I think about being jobless.	85				
61	I spent sleepless night in search of job.	81				
64	I did not like my surroundings and wanted to be alone when I was jobless/under stress.	81				
59	I started palpitating a lot during recession time.	78				
60	I developed acidity when I was without a job/lost the job.	76				
65	I used to get irritated a lot at the time of attrition.	76				
55	My blood pressure increased during recession time.	73				
53	I started losing my weight in the process of looking for another job.	75				
56	I felt depressed during the bad phase of my working life.	64				
51	I developed blood sugar in the process of search of job.	56				
52	I was under tremendous pressure to get this job.	55				

Factor 2: Perceived Neglect and Fear of Supervisor

40	My boss becomes angry with me for something that is not my fault.	81				
39	My boss is verbally abusive towards me.	78				
33	I fear that my officers or employer might misunderstand me, even if I have done my duties properly.	74				
32	I fear that my officers or employer may give me the notice to leave the job without giving apparent cause for it.	74				
37	I apprehend that my officers may get annoyed with me.	73				
22	I am blamed for others mistakes.	66				

44	My boss becomes upset with me for taking too long to do something.		65			
25	I often feel that by staying here, I cannot improve my competency and efficiency.		64			
20	My boss punishes me severely for trivial mistakes.		64			
19	I had to leave my earlier job because my boss made my life miserable.		60			
42	I am unable to contact my boss in an emergency.		57			

Factor 3: Fear of Attrition

4	I want to leave my job, because due to this job I am deprived of respect from the society, and sympathy from relatives.		84			
5	I had to leave my earlier job due to salary cut.		84			
7	I had to leave my earlier job due to financial crises in the company.		78			
3	I had to leave my earlier job due to recession in organization.		71			
6	I had to leave my earlier job due to de-motivating environment of the company.		63			
1	I changed my job due to less salary.		48			

Factor 4: Stressful Work

47	Another employee's negligence makes it difficult for me to perform my own work properly.		80			
46	I have to do extra work because another unit or department did not do their own work properly.		79			
48	I see another employee relaxing and taking it easy while I am very busy.		74			
45	My unit is short-staffed due to non-recruitment.		68			
49	I have so much to do that I have to work overtime.		65			

Factor 5: Insecurity Related Stress

12	I think that what will happen to my family if I am turned out of job.		59			
9	I think and worry about my promotions.		54			
8	I fear that I may be terminated from my job.		52			
15	I am afraid that I may be suspended from my job.		44			

Note: Decimal Points are omitted, $N = 276$

Factor 1: Distress and Agonizing Job Feelings - Factor 1 consisted of several items indicated one's job stress, which includes feeling of anxiety towards job-related issues, physical and mental stress, feelings of depression towards work and its availability. Getting upset easily and not being able to sleep, also getting physical health problem, which was raised due to job stress. In all, 12 items clubbed together in this factor suggest a range of job stress experiences. For example, item no. 63 reads 'I am anxious when I think about being jobless', and clearly shows strong insecurity in thought process and feelings resulting from stress of the person. Similarly, item 62 'I develop severe headache when I think about searching for a new job' indicates that individual has high level of pain when it comes to finding new job, which creates agonizing job feelings. Similarly, items like 'I felt depressed during the bad phase of my working life', 'I am under tremendous pressure to do this job', 'I used to get irritated a lot at the time of attrition' were strongly related with distress and agonizing job feelings. The factor loadings ranged from .55 to .86 and the corresponding loadings were close to zero in almost all cases.

Factor 2: Perceived Neglect and Fear of Supervisor - This factor consists of such items where stress is created by the supervisors of the organization. All 11 items clustered together under this factor indicating job stress due to perceived neglect and fear of supervisors, item no. 33 'I fear that my officers or employer might misunderstand me, even if I have done my duties properly', 'My boss becomes upset with me for taking too long to do something', 'My boss punishes me severely for trivial mistakes', 'I am unable to contact my boss in an emergency and item like', and 'My boss becomes angry at me for something that is not my fault' clearly indicate the clear factor of job stress. This factor consists of items where superiors create stress. The factor loadings ranged from .57 to .81 and the corresponding loadings were close to zero in almost all cases.

Factor 3: Fear of Attrition - This factor classifies such items that typify attrition-related stress within an individual. If such deeply personal processes are understood well and handled deftly by the organization/individual, it would be indicative of his/her capability to manage stress. There were six statements in this factor, of which most of them appeared

to be semantically close to each other with one exception such as 'I had to leave my earlier job due to de-motivating environment of the company', perhaps the individual feels that due to the impact of de-motivating environment of the company it is creating frustration within him which in turn is creating stress. The factor loadings ranged from .48 to .84 and the corresponding loadings were close to zero in almost all cases. Feelings of attrition-created stress factor consist of items where person had to leave the job due to de-motivating environment and financial crises in the company, e.g., items such as 'I had to leave my earlier job due to de-motivating environment of the company' 'I had to leave my earlier job due to recession in organization', etc.

Factors 4: Stressful Work - This factor signifies individual's understanding of stressful work environment. This gives feeling to individual that he/she handles amount of work without proper support and lack of work force, due to non-recruitment. For instance, 'My unit is short staffed due to non-recruitment' and 'I have so much to do that I have to work overtime', etc., signify the stress of the individual's work. The factor loading had a range from .65 to .80 and the corresponding loadings were close to zero in almost all cases.

Factor 5: Insecurity Related Stress - The fifth factor was labelled as insecurity related stress that seemed to colour one's fear of losing job and concern about family future. The factor appeared to share commonality of meaning underlying

insecurity related stress; for instance, the statements like 'I think that what will happen to my family if I am turned out of job', 'I am afraid that I may be suspended of my job', etc., clearly communicate the meaning that such individuals have stress about losing job and in turn, family concern is there. The factor loading ranged from .44 to .59 with near minus corresponding to other factors.

Table 2 reports a summary of item analysis selected by the factor analytic methods. Along with scale means and SDs, corrected item total correlations are also given. Item total correlation tests the ability of an item whether it belongs to the same group of items where it is being classified. Higher corrected item total correlation indicates that the item is relevant in that group of items, whereas lower corrected item total correlation signifies that the item does not qualify to be included in the intended group. Since there were many items in each factor ally identified subscale, what has been reported is the calculated median item total correlation for the accepted subset of items. The Cronbach's Alpha coefficient calculated for the accepted subset of items is also reported as internal consistency estimate for the defined group of items referred to in Table 1. Corresponding alpha reliabilities for the above scales ranged from .77 (insecurity related stress) to .95 (distress and agonizing job feelings). These findings fully supported the factor loadings, which showed a great deal of uni-dimensionality for the subset of items classified under five accepted factors. In view of above, finally 38 items were retained.

Table 2: Summary of Item Analysis on Extracted Factors

Accepted factors	No. of Items	Scale mean	Scale SD	Median of corrected items, total correlations	Alpha reliability
Distress and agonizing job feelings	12	28.78	16.66	.86	.95
Perceived neglect and fear of supervisor.	11	27.34	15.45	.67	.93
Fear of attrition	06	7.40	6.66	.80	.85
Stressful work	05	4.22	22.00	.97	.89
Insecurity related stress	04	9.51	7.55	.81	.77

Intension to Stay: Often, retention was studied in the form of 'intention to quit' perspective, which was significantly negatively correlated with 'intention to stay' (Black & Stevens, 1989). Many researchers have used single item to measure the 'intention to stay' (D'Amanto & Herzfeldt, 2008; Quinn, 2011). However, five and four items scale (Mowday, Koberg, & McArthur, 1984; Price & Muller, 1986) was developed to measure the intention to stay. For the purpose of the present study, four items scale, developed by Price and Muller (1986), was used. The items were rated on 7-point scale ranging from 1 'Strongly disagree' to 7 'Strongly agree' (Table 3).

There was a single dimension to measure intention to stay, four items with loading 81 to lowest to 95 to highest with reliability of .87 (Table 4).

Table 3: Principal Axis Factor Analysis of Intention to Stay Items

No.	Statements	IS
1	I plan to leave this organization as soon as possible.	85
2	Under no circumstances will I voluntarily leave this organization before I retire.	81
3	I would be reluctant to leave this organization.	88
4	I plan to stay in this organization as long as possible.	95

Note: Decimal Points are omitted, N = 276

Table 4: Summary of Item Analysis on Extracted Factor (Intention to stay)

factor	No. of Items	Scale mean	Scale SD	Median of corrected items, total correlations	Alpha reliability
Intention to stay	4	25.24	5.27	.77	.87

VALIDATING THE SCALE

To validate job stress scale, correlation between job stress dimensions and employee intention to stay were calculated. To measure the employee intention to stay, items used were such as

‘under no circumstances will I voluntarily leave this organization before I retire’, ‘I would be reluctant to leave this organization’, and ‘I plan to stay in this organization as long as possible’. Result of factor analysis for the items of intention to stay revealed single factor, which was named as ‘intention to stay’.

Result shown in Table 5 revealed dimensions of job stress such as distress and agonizing job feelings, perceived neglect and fear of supervisor, fear of attrition-related stress, stressful work, insecurity related stress were negatively correlated with employees' intention to stay with organizations. It is interesting to note that all dimension of job stress were negatively correlated with intention to stay at significant level more than 0.1. Table 6 presents inter-correlation among

various dimensions of job stress with intention to stay. Result clearly shows that each dimension of job stress is positively yet semantically different from each other. Result of structural relationship model relating to job stress with intention to stay is summarized here (Fig. 1).

Model fit was deemed acceptable. Structure path between construct were significant at 1% level (CFI= $\geq$.95; NFI= $\geq$.94; RMSEA=.03; N=276). Structural model indicate that job stress negatively affects intention to stay.

Table 5: Correlation between Job Stress Dimensions and Managers' Intention to Stay with the Organization

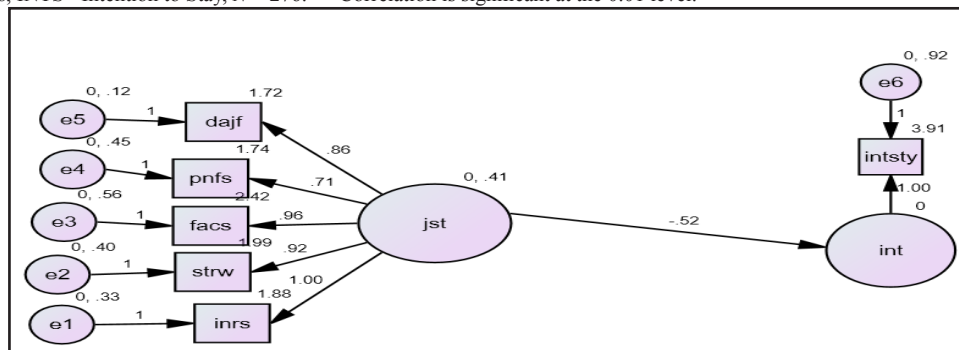
Job Stress Dimensions	Intention to Stay
Distress and agonizing job feelings	-.37**
Perceived neglect and fear of supervisor.	-.46**
Fear of attrition	-.31**
Stressful work	-.18**
Insecurity related stress	-.17**

Note: Decimal points are omitted, N = 276, **p0.01

Table 6: Inter-Correlation between Measured Dimensions of Job Stress and Employees' Intention to Stay

Factors name	DAJF	PNFS	FACS	STRW	INRS	INTS
DAJF	-					
PNFS	.94**	-				
FACS	.75**	.75**	-			
STRW	.64**	.75**	.68**	-		
INRS	.67**	.68**	.48**	.53**	-	
INTS	-.37**	-.46**	-.31**	-.18**	-.17**	-

Note: DAJF= Distress and agonizing job feelings, PNFS= Perceived neglect and fear of supervisor, FACS = Fear of attrition, STRW= stressful work, INRS= Insecurity related stress, INTS= Intention to Stay, N=276. ** Correlation is significant at the 0.01 level.



Note: DAJF= Distress and agonizing job feelings, PNFS= Perceived neglect and fear of supervisor, FACS = Fear of attrition, STRW= stressful work, INRS= Insecurity related stress N=276.

Fig. 1: Result of Structural Relationship Model Relating to Dimensions of Job Stress and Intention to Stay. Model fit was accepted with all Dimensions of Job Stress

DISCUSSION

Objective of the present study was to develop a scale to measure job stress. Result of factor analysis has revealed five dimensions of job stress, which are perceived by the individual. Foremost dimension of job stress was distress and agonizing job feelings. When individual is in search of job or has to change the job, it is a stressful feeling and person perceives physical and mental stress.

Another dimension of job stress discovered was perceived neglect and fear of supervisor, which is a very important aspect. Organizations must pay attention to this where individuals/employees are put under pressure by the superior. It is perceived that if the boss is threatening or not supportive, it creates a lot of stress within the employees' mind. Boss plays an important role in employees' career, promotion, etc. Thus, the individual is always conscious about any negative gesture or behavioural pattern of the boss, and feels under stress. It is recommended to provide interpersonal training to the superiors to check their behaviour to help employees to reduce their stress level and increase productivity and efficiencies. Hence, supervisors play a central role in the creating job stress among the employees. Subordinates' performance start deteriorating, as it is found out that 80% of the managers do not fully utilize their potential because of the stress (Bytyqi et al., 2010).

Factor analysis suggested the third factor of job stress, which was named as the feeling of attrition-related stress. This factor expresses that the reason for job stress is the feeling of attrition or to be removed from the job, salary cutting, and financial problem in the company.

Fourth important factor of job stress was stressful work, where individuals felt that they are working more as compared to others. Lack of sufficient work force is the major cause of job stress in the working environment. Usually, it is seen that due to cost-cutting policy, organizations do not hire more people and one person is overburdened with the work, producing job stress. It was also apparent, due to a different employee's negligence or incompetence, someone else has to work extra to complete the required task resulting in increased stress.

Fifth factor of job stress was job insecurity, which was causing, inducing, and inculcating stress among individuals. When individuals have job insecurity and are not aware about the period for which they are going to be with their organizations, it generates stress among the individuals. Employees start worrying about themselves and family member's future.

Thus, over all, five important and genuine dimensions of job stress were discovered by the statistical analysis in the present study. To confirm the same, SEM was used, which again revealed the five clear factors of job stress.

It is significant to note that all dimensions of job stress were negatively related to intention to stay, indicating that if organizations do not take care of the factors which create job stress, employee will not stay with the organization and may leave at very first given opportunity (Villanueva et al., 2009).

IMPLICATION OF THE STUDY

Stress is one of the most challenging concerns in the modern society, especially at workplace. It is continuously harming mental and physical health of the individuals. Job stress is the new epidemic at workplace; thus, it becomes essential to understand the main grounds of job stress, felt by the individual at workplace. Scale of job stress, developed in the present study, is extremely useful to understand the cause of stress, particularly in Indian work situation, generally at the global level. Using this scale, organizations will be able to understand the reasons of stress at workplaces. This research is helpful to understand the cause of job stress, which in turn can be utilized to reduce the stress levels of the employees. Level of stress should be negligible, not affecting individual's health and organizational productivity.

As the present study has revealed, the main reason for job stress among employees is the behaviour of the superiors. It can be suggested that superiors may be given proper training from HR department to interact with the subordinates to be more productive and less destructive. In addition, when employee joins the firm, some security must be assured to them by the organization to make them feel secure. Finally, once parameters of the situations which contribute in increasing stress are known, it becomes easy to be deal with them by taking immediate measurements to resolve the issue.

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