

## A CORRELATIONAL STUDY ON JOB STRESS AND PSYCHIATRIC PROBLEMS AMONG INDUSTRIAL WORKERS

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**Abstract:** *The main purpose of the present research is to establish the relationship between job stress and probabilities of psychiatric problems in relation to nature of job and income/ salary among the industrial workers. For this purpose 200 workers of Tata Motors Ltd in Jamshedpur have been selected. These workers were divided on the basis of nature of jobs (high / low risk) and salary (high / low paid). Thus, there were four sub-groups and in each sub-group there were 50 cases.*

**Methods:** *A survey was conducted with 200 samples to investigate the stress level of workers. The Occupational Stress Index (O.S.I) developed by Srivastava and Singh in 1981 was administered and to examine the psychiatric problems the Middlesex Hospital Questionnaire (M.H.Q) constructed by Crown & Crisp (1966) and adapted in Hindi by O.N. Srivastava and V.K. Bhat in 1974 was administered on these 200 workers.*

**Results:** *The results revealed that there was positive relation between job stress and psychiatric problems in relation to nature of jobs (high and low risk) and salary/income (high and low paid) among the industrial workers in both the scales of O.S.I and M.H.Q and its sub-scales.*

**Conclusions:** *Job stress has significant and positive correlation with psychiatric problems, indicating, thereby, that higher the job stress, higher is the psychiatric problems.*

**Keywords:** *Job stress, Psychiatric problems, Nature of jobs, Level of payment, Industrial workers.*

### INTRODUCTION

The main purpose of the present research is to establish the relationship, if any, between job stress and psychiatric problems in relation to nature of job and income. The stresses relating to job have become predominant feature of modern life, exerting far reaching effects on focal employee's behaviour and adjustment "on" as well as "off" the job. To define job stress McGrath (1976) said..... "There is a potential for stress when an environment situation is perceived as presenting

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demand which threatens to exceed the person's capabilities and resources for meeting it, under conditions where he expects a substantial differential in the rewards and costs from meeting the demand versus not meeting it."

Margolis and Kroes (1974) defined job stress "as a condition as worth interacting with worker characteristics to disrupt psychological or physiological homeostasis. The causal situation and conditions are job stresses and the disrupted homeostasis is job related strain". According to Beehr and Newman (1978) "Job stress refers to a situation where in job related factors interact with a worker to change (i.e. disrupt or enhance) his psychological and or physiological condition such that the person (i.e. mind-body) is forced to deviate from normal functioning". In any job situation layout of the organization (Physical Condition) and leadership styles, communication process (psychological conditions) are significantly important variables (stressors) to generate a stress conditions (perception). Constant stress condition results in a wide variety of maladjustments (stress responses). In an organization, if a person is unable to meet technological and human demands effectively, the ultimate outcome becomes incongruent, which is an indicator of stress in a worker. In organization systems, the process of smooth management is to integrate the technological and human demands effectively. When system of the management fails to integrate such demands, it leaves an air of stressful situation in the work place. Such a failure may be due to mismatch between technology of organization and human abilities. Nowadays the organizational theorists emphasize that there should be "right person for right job" approach rather "right job for right person". The former is modern concept (person-environment fit theory) and the latter is traditional concept (techno-economic theory). The person-environment fit theory advocates for matching individuals in the right place. So far the techno-economic theory is concerned the organizational theorists say that it is counter productive and should be avoided. Also such theory is capable of generating significant amount of stress among the workers. The effect of 'eustress' leads to fruitful results for the individuals and the organization but 'distress' is having bad effects. The distress in the worker crops up due to long and mismanaged stress. The distress condition will have behavioural, psychological and medical consequences. Effects of such consequences are increased medical bills, physical and psychological ill-health, sickness, absenteeism and low productivity in the organization.

Stress is generally understood to have adverse effect on individual's life and organization's effectiveness. Contrary to this moderate stress is welcome as it can increase effort, stimulate creativity and encourage diligence in one's work. But excessively high stress can overload and breakdown a person's physical and mental systems. Performance can suffer as people experience illness brought on by very intense stress and/or react to high stress through absenteeism, turnover, errors, and dissatisfaction and reduced performance.

Mental health deals with psychology of normal working people, not with psychiatric causes, but it focuses on an overall assessment of the mental health of these men. The concept of mental health is taken in a wider sense. It is not a representation of any psychodynamic unit but as a loose description, designated for an overall level of success, personal satisfaction, effectiveness and excellence of the individual's functioning at present. Mental health means the ability to balance feelings, desires, ambitions, and ideals in our daily life. It means the ability to face and accept the realities of life (Kuppuswami, 1962). According to Kornhauser (1965) mental health refers to a combination of psychological and behavioral attributes, some of which the person must possess above a required minimum and others of which signify better mental health the more they are present. Higher index of mental health indicates high individual effectiveness, and good effectiveness reflected in organizational effectiveness. With advancement of industrialization and urbanization in India, the problem of mental health among workers/employees is becoming very fast. We have no accurate statistics about the percentage of mental health problems in industrial employees or workers, who are maladjusted. In fact, very little attempts have been made by behaviorist researchers for studying the existing patterns of mental health problem among workers.

Some people at their jobs in the factory look feel and behave differently. They will often appear bored, irritated, frustrated and tense, probably grumbling about the management and perhaps watching the clock until they can leave. Some will be political extremists, others just the rather unhappy people, who are to be found in every industrial community. In the factory escape into strikes, absenteeism, illness and psychosomatic breakdown is unduly common. These are the keys to industrial mental health and to a high level of productivity in all industrialized countries. Moreover, these minor psychological symptoms usually remain unnoticed and so do not receive professional assistance. The practical importance of these symptoms lies in the fact that not only they lead to impairment in productivity, but also mistakes at work and accident proneness (August, 1977).

From all these observations, what we want to reflect is that stress is a part and parcel of the industrial life- process. But, we use the term stress only to connote overloading of the psycho-physiological system by a trigger of some such conditions external or internal that is being perceived by the individual as threatening to his existence and giving rise to some kind of maladaptive behavior. It is common knowledge that much time is lost in factories because of neurotic symptoms. Doubts, as to social security, boredom from the monotony of mechanized jobs, fear of employment or of inability to work, all have a decidedly injurious psychological effect on the workman. In spite of the various efforts made to interest him in his task, including social work of all kinds, incentives schemes sharing in benefits, paid holidays and national insurance, the fact

remains that large numbers of industrial workers have lost joy in their work. In a world, which is so insecure, it is not surprising that anxiety arising from feeling of instability should plunge into psychoneurosis in those people who are so predisposed. Factors tending to produce neurosis are uncongenial working condition, mental sub normality, poor placement in which the job requires more skill than the operative processes, together with extra-factory stresses related to the worker's social and domestic life.

## LITERATURE REVIEW

Job stress has aroused a considerable interest among social and organizational psychologists and generated a vast amount of researches in the area. But there is paucity of researches on "Job stress and probability of psychiatric problems among the industrial workers." Three pioneering studies are worth mentioning in this context which attempted to focus job stress and health outcome and also formed the conceptual and operational basis of the organizational stress.

The first study took place during the World War II and was conducted by Stouffer (1949) and is discussed in the book, "*The American Soldier*". Research was carried out among American bomber pilots who flew from England to Germany and those who participated in the invasion of Normandy. The study provided the clinical concept of 'coping behaviour' as also indicated that stress does not merely have psychological effect but also physiological ones. The dynamics of job related stress, for the first time was analyzed in clinical terms as the study evidenced that such a stressful situation influenced motivation, attitudes, decreased willingness to volunteer, effect upon morale and sleep disturbances.

The large scale project on organizational stress in the area of industry was conducted by Kahn et. al (1964) and was described in the book, "*Organizational Stress*". The most important finding of the study was the prevalence of role ambiguity and role conflict, both of which were shown to be the most important sources of job related stress. The pioneer scientific study in relation to mental health and distress of individual workers was conducted by Kornhauser (1964). He found that a worker's performance at his task is closely related to his mental health. Since then many attempts have been made in this regard (Agrawal & Divakar, 2003; Beehr & Newman, 1987; Kar et al, 2003; Mittal et al, 2000; Mohanty et al, 1998; Samanta and Singh, 1993; Srivatava, 1991;). Kornhauser (1964) studied the psychological condition of workers in modern mass production industries and attempted to assess and compare the mental health of men at higher and lower skill levels, with special attention to the human effects of a routine production job.

A number of literature reviews on occupational stress have also examined the relationship of occupation-specific stressors (job-related SPECS) with the indices of psychological strains like anxiety, depression, job dissatisfaction, burnout etc. (Brief, Fisher, 1989; Ghadially & Kumar, 1989; Ivancevich & Atteson, 1980; Pestonjee, 1992; Prakash, 1990; Schuler & Van Sell, 1980; Sharma & Sharma, 1983; 1984, 1987; Sharma & Sharma, 1989; Sharma, 1988a; Srivastava & Singh, 1988; Srivastava, 1982, 1983).

Shigemi, Mino, Tsuda, Babazono and Aoyama (2007) evaluated the relationship between job stress and mental health. A cross-sectional study was conducted using a questionnaire related to demographics, subjective job stress and mental health state. The questionnaire consisted of a 30-item Japanese version of the General Health Questionnaire (GHQ) developed by Goldberg in addition to questions about subjective job stress, mental health and job stress conditions respectively. All subjects were employees of an electronic company in Japan. Among 782 workers, 763 workers responded to the questionnaire satisfactorily (response rate was 97.6%). People whose GHQ score was more than 7 were classified as having psychiatric problems, while the remaining respondents were considered as having no mental health problems. The researchers employed a multiple logistic regression analysis to estimate the relationship between subjective job stress and mental health, adjusting for gender, age, marital state, familial stress, and physical health state. Subjective job stress was significantly associated with the state of mental health. In particular, the items of "too much trouble at work," "too much responsibility," "are not allowed to make mistakes," "poor relationship with superiors," and "cannot keep up with technology" were significantly related to mental health.

Carolyn, Elizabeth, Kooehaun and Elliot Goldner (2007) examined the links between psychiatric disorders and work-related stress as well as between psychiatric disorders and physical conditions. The study explores the relationships between chronic work stress, psychiatric disorders and chronic physical conditions and disability among workers. By doing so, the study sought to understand how these factors are associated with worker disability when they are experienced alone versus in combination with one another. The study population was drawn from the Canadian Community Health Survey 1.2, a national population-based survey that gathered cross-sectional data on health status from 22,118 working respondents. The relationship between chronic work stress, chronic physical conditions and psychiatric disorders and disability in the past 14 days was examined for working respondents by using logistic regressions controlling for socio-demographic characteristics, region and occupation. It was found that 31% of respondents experienced chronic work stress either alone or in combination with a chronic physical condition, a psychiatric disorder, or both. 46% reported at least one chronic physical condition either alone or

in combination. Finally, 11% had a psychiatric disorder. Compared with the group with none of the factors, those with an increasing number of combined conditions had increasing odds of disability after the analysis controlled for socio-demographic characteristics, occupation and region. The researcher concluded that the presence of chronic work stress seems to amplify effects of psychiatric disorders and chronic physical conditions on disability. In addition, psychiatric disorders co-occurring with physical illness seem to be associated with significantly higher odds of disability.

Srivastava (1991) conducted a study on 300 employees of supervisory cadre from life insurance Corporation to examine the relationship between employees role stress and mental health. The analysis indicated that employees role stress and mental ill-health positively correlated ( $r=.84$ ).

Khalique and Khalid (2009) studied the effect of occupational stress and general well-being. The study is conducted on sales & marketing professionals working in various top most companies. The Occupational Stress Index developed by Srivastava and Singh along with the PGI-General well-being measure developed by Verma and Verma were administered to sales professionals. It was found that role ambiguity, role conflict, unreasonable group pressures, impoverishment, low status, strenuous working conditions, unreliability and responsibility of persons are the factors which contribute more occupational stress which in turn affects the General well-being of the individual. The researchers concluded that higher the occupational stress lower is the general well-being.

Employing the same research design as in the present study Khalid and Khalique (2012) examined the effect of nature of job (High risk / low risk) on occupational stress of 200 workers. Results clearly indicated that nature of job (high and low risk) played a significant role in creating stress in workers. Workers doing high risk jobs showed greater stress compared to workers doing low risk jobs in both high paid and low paid categories. Role overload, role ambiguity, responsibility of persons, unreasonable group pressures, under participation, poor peer relations, low status, strenuous working conditions, unprofitability were the factors which contributed more occupational stress. They found that high risk job workers had significantly greater stress compared to low risk job workers.

It is evident from the review of studies that there have been very few researches in India on the relationship of job stress and psychiatric problems particularly in industrial setting causing in great loss of industrial productivity. In view of the paucity of Indian researches, the present research was carried out with the following **objectives**:

- To study the effect of nature of job (High and Low risk) on job stress and probabilities of psychiatric problems.
- To study the effect of income (high and low paid) on job stress and probabilities of psychiatric problems.
- To find out the relationship between job stress and psychiatric problems in relation to nature of jobs and salary/income.

### **Methodology**

**Sample:** A sample of 200 workers was selected from the TATA Motors Ltd., Jamshedpur. The workers were divided into two categories namely 'High Risk' workers and 'Low Risk' workers and further these workers were sub-divided into two categories, that is, 'Low Paid' and 'High Paid' workers. The sample was based on a 2x2 factorial design. Therefore, there were four sample sub-groups and each sub-group was represented by 50 workers, making a total of 200.

### **Tools Used**

The following tools have been used in the present study:

1. **Personal Data:** Personal Data Sheet was specially designed for the present study which include data related to personal identification of the workers, specially their names, addresses, factories in which they are working, designation, nature of the job and salary etc.
2. **The Occupation Stress Index (O.S.I):** Perceived stress among the automobiles workers were measured by using the Occupational Stress Index Scale. The scale was developed by Dr. A.K. Srivastava and A.P. Singh in 1981. The scale has 12 sub-scale related to 12 dimensions of job life viz. role overload, role ambiguity, role conflict, unreasonable group and political pressure, responsibility for persons, under participation, powerlessness, poor peer relations, intrinsic impoverishment, low status, strenuous working conditions and unprofitability.
3. **The Middlesex Hospital Questionnaires (M.H.Q.):** The presence of mental ill health of the workers was measured by using the Hindi version of the Middlesex Hospital Questionnaire. It is constructed by Crown & Crisp (1966) and adapted in Hindi by O.N. Srivastava and V.K. Bhat in 1974. This test consists of six sub-scales having 8 questions each. These sub scales are: Free-floating anxiety (FFA), Obsessional traits and symptoms (OBS), Phobic anxiety (PHO), Somatic concomitants of anxiety (SOM), Neurotic depression (DEP) and Hysterical personality traits (HYS).

### Statistical Analyses

The following statistical techniques have been used in the analysis of obtained data:

- The mean scores have been calculated and graphically shown.
- The sub-groups based on the nature of jobs and level of payment has been compared by t-test.
- The co-efficient of correlations by Pearson Product Moment method have also been computed to examine the relationship of job stress and psychiatric problems.

### RESULTS AND DISCUSSIONS

The present research has come out with some significant findings. The main aim of this research was to investigate the relationship of nature of job (high risk and low risk) and income (high paid and low paid) with job stress and psychiatric problems and interrelationships of O.S.I and its sub-scales with M.H.Q and its sub-scales.

The finding of this research shows that the risk factors (high and low risk jobs) and salary/income (high and low paid) played a significant role in creating stress on industrial workers. Mean scores and t-test were calculated which showed that high risk job workers have obtained significantly higher mean scores in Occupational stress index (OSI) and its sub-scales as compared to low risk job workers. The result has confirmed that high risk job workers have high stress as compared to low risk job workers and low paid workers have high stress as compared to high paid workers (Tables 1 and Figure 1).

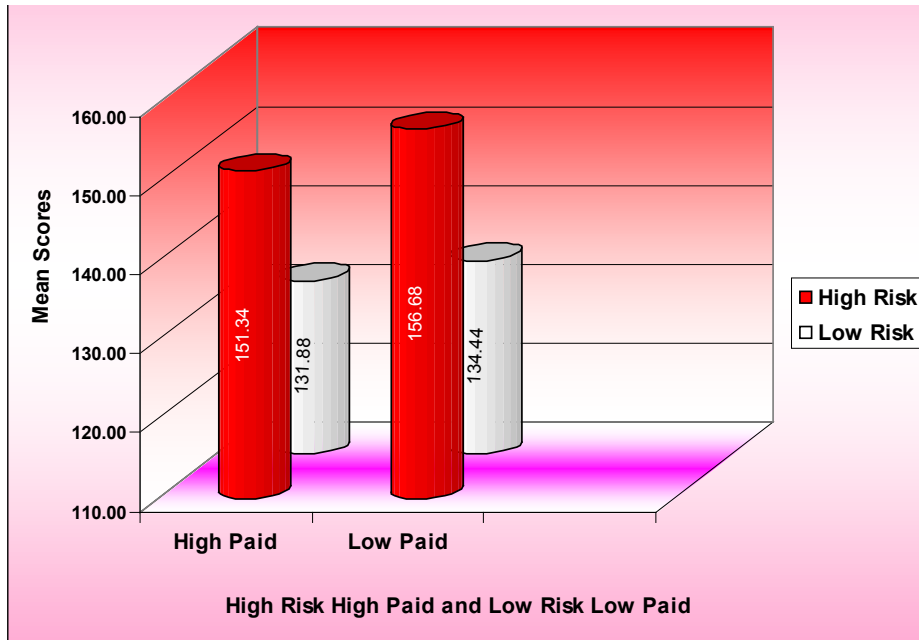
**Table 1**  
**Comparisons of high risk and low risk job workers on O.S.I: t-values**

	<i>High Risk</i>			<i>Low Risk</i>			<i>t-Value</i>
	<i>N</i>	<i>Mean</i>	<i>S.D</i>	<i>N</i>	<i>Mean</i>	<i>S.D</i>	
High Paid	50	151.34	17.55	50	131.88	25.55	4.44**
Low Paid	50	156.88	15.48	50	134.44	26.02	5.13**
<b>Total</b>	<b>100</b>			<b>100</b>			

\*\* = Significant at .01 level



**Figure 1: Mean Scores of all the four groups on O.S.I.**



A very clear cut finding emerges in relation to nature of job (high/low risk) and level of payment (high and low paid) on psychiatric problems. The t-test presented in Table 2 and mean scores in Figure 2 indicate that all the t-test is statistically significant at .01 level. The mean scores indicate that high risk job workers have significantly higher mean scores in psychiatric problems as compared to low risk job workers and low paid job workers have higher mean scores as compared to high paid job workers. This explains that the nature of job and level of payment has significant effect on psychiatric problems.

**Table 2**  
**Comparisons of high risk and low risk job workers on M.H.Q: t-values**

	<i>High Risk</i>			<i>Low Risk</i>			<i>t-Value</i>
	<i>N</i>	<i>Mean</i>	<i>S.D</i>	<i>N</i>	<i>Mean</i>	<i>S.D</i>	
High Paid	50	38.44	14.07	50	26.82	13.06	4.27
Low Paid	50	43.2	14.02	50	28.68	12.66	5.44
<b>Total</b>	<b>100</b>			<b>100</b>			

Figure 2: Mean Scores of all the four groups on M.H.Q.

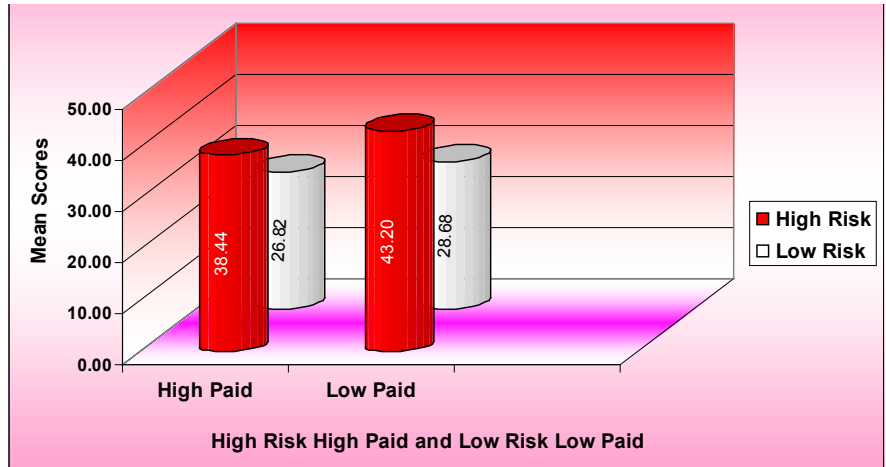


Table 3  
Co-efficient of Correlations between O.S.I and M.H.Q and their sub-scales in Total Sample (N=200)

Sub-Scales of Occupational Stress Index (OSI)	The Middlesex Hospital Questionnaire (MHQ)						
	FFA	OBS	PHO	SOM	DEP	HYS	Total M.H.Q.
I. Role Over Load	.50**	.44**	.45**	.49**	.49**	.45**	.50**
II. Role Ambiguity	.51**	.53**	.51**	.54**	.52**	.44**	.47**
III. Role Conflict	.42**	.45**	.46**	.46**	.44**	.45**	.47**
IV. Un-Reasonable Groups & Political Pressure	.49**	.49**	.43**	.47**	.45**	.45**	.49**
V. Responsibility for a Person	.52**	.52**	.47**	.47**	.53**	.51**	.53**
VI. Under Participation	.27**	.21**	.24**	.23**	.26**	.25**	.26**
VII. Powerlessness	.36**	.42**	.43**	.39**	.41**	.44**	.43**
VIII. Poor Peer Relations	.56**	.61**	.62**	.61**	.58**	.58**	.63**
IX. Intrinsic Impoverishment	.43**	.45**	.49**	.49**	.45**	.43**	.48**
X. Low Status	.56**	.61**	.51**	.54**	.54**	.55**	.58**
XI. Strenuous Working Conditions	.58**	.56**	.54**	.57**	.58**	.52**	.59**
XII. Un-Profitability	.33**	.35**	.28**	.35**	.32**	.30**	.34**
<b>TOTAL O.S.I.</b>	<b>.79**</b>	<b>.79**</b>	<b>.78**</b>	<b>.80**</b>	<b>.80**</b>	<b>.77**</b>	<b>.84**</b>

All correlations are significant at .01 level

In order to examine the relationship between job stress and psychiatric problems coefficient of correlations have been computed by using the product moment correlation techniques. Correlations have been computed for high risk / low risk and low paid / high paid 200 workers to establish the relationships of job stress and its sub-scales with psychiatric problems. The correlations have been reported in Table 3 which reveals that there are significant positive correlations between job stress and psychiatric problems in both total scales as well as in their sub-scales. Thus, the data clearly indicate that higher the job stress, higher is the psychiatric problems. Let the correlations be examined in the light of their levels of significance. Table 3 presents the correlations of job stress and its sub-scales namely, role overload, role ambiguity and role conflict, unreasonable groups and political pressure, responsibility for a person, under participation, powerlessness, poor peer relations, intrinsic impoverishment, low status, strenuous working conditions and unprofitability, with psychiatric problems and its sub-scales namely free floating anxiety(FFA), obsession compulsion (OBS), phobia (PHO), somatic complaints (SOM), depression (DEP), and hysteria (HYS) in total sample of workers. It may be observed that all the correlations are statistically significant at above .01 level of significance and further all the correlations are in positive direction. It means that job stress and psychiatric problems are positively correlated with each other.

## CONCLUSIONS

All the above mentioned correlations have shown that the job stress and its sub-scales have significant and positive correlations with psychiatric problems and its dimensions. It means when a subject gets a higher score in a sub-scale of job stress he also gets a higher score in a sub scale of psychiatric problems. In other words, job stress increases psychiatric problems. Thus, on the whole, it can be concluded that stress and its sub-scales have significant positive correlations with psychiatric problems and its sub-scales.

## References

- Agarwal, R.D. (1991). Occupational Health and Productivity. *Journal of Occupational Health Services (OHS Mirro)* : 1(1), 25-28.
- Agarwal, S.M. and Divakara, P.G. (2003). Psychiatric Morbidity in a Steel Industry. *Industrial Psychiatry Journal*, 12(1), 58-62.
- Agarwala, R.K. (1989). Cardiac Neurosis and Absenteeism in Industry. *Industrial Psychiatry Journal*, 2(1), 21-26.
- Ahmad, S. (1991). Organizational Role Stress : A Psychological Study of Middle Managers. *Journal of Personality and Clinical Studies*, 7(1), 43-48.

- Ahmad, S. and Khanna, P. (1992) Job Stress and Job Satisfaction of Middle Level Hotel Employees. *Journal of Middle Level Hotel Employees. Journal of Personality and Clinical Studies*, 7(1), 43-48.
- Ahmad, S. and Razzack, B. (1983). A Study of Mental Health and Job Satisfaction of Industrial Workers, *Indian Journal of Clinical Psychology*, (10), 239-244.
- Ahmad, S., Ahmad, H. (1992). role Stress and Work Satisfaction : A Study on Middle Managers. *Industrial Psychiatry Journal*, 5 (1), 15-21.
- Bhatt, D.J. (1977). Job stress, job involvement and job satisfaction of teachers: A correlation study. *Indian Journal of Psychometric and Education*, 28(2), 87-94.
- Biswas, U.N. (1998). Life-style stressors, organizational commitment, job involvement, and perceived organizational effectiveness across job levels. *Indian Journal of Industrial Relations*, 34(1), 55-72.
- Brown, G.W. & Harris. T. (1978). Social Origins of Depression : *A Study of Psychiatric Disorder in Women*. London : Tavistock.
- Chandrasekhar, S.F., Chandra Mouli, D., & Anjaiah, P. (1995). Job stress and psycho-somatic problems of nurses at select hospitals. *Indian Journal of Applied Psychology*, 32 (1&2), 1-5.
- Choudhry, A.N. (1990). Psychological Aspects of Job Stress in Industries. *Industrial Psychiatry Journal*, 3(1), 29-36.
- Choudhry, S. (Lt. Col.) (2000). Psychiatric Morbidity in the Central Reserve Police Force. *Industrial Psychiatry Journal*, 9(1), 38-50.
- Divakera, P.G. (1989). A Psychological Study of Job stress Among Executives Working in an Industry. The Ph.D. Dissertation, Ranchi University.
- Doby, Victoria, J. and Caplan, Robert, D. (1995). Organizational Stress as threat to reputation : Effects on Anxiety at Work and at Home. *Academy of Management Journal*, 38(4), 1105-1123.
- Eliashof, Byron, A. and Streltzer, J. (1992). The Role of 'Stress' in Workers Compensation Stress Claims. *Journal of Occupational Medicine*, 34(3), 297-302.
- Ferguson, D. (1974). A Study of Occupational Stress and Health : *Man Under Stress*, (Ed.) A.T. Welford, New York, a division of John Willey and Sons Inc., 83-98.
- Johns, N.W. (1974). Stress and Coronary Heart Disease. *Man under Stress*, (Ed.) A.T. Welford, New York, a division of John Willey and Sons Inc., 117-124.
- Johnson, G. David, Thomas, J. Stephen and Riordan, Catherine A. (1994). Job Stress, Social Support and Health Amongst *Shrimp Fisherman*. *Work and Stress*, 8(4), 343-354.
- Kar, G.C. and Tophan Pati (1990). Psychiatric referrals from the Industrial Sectors. *Industrial Psychiatry Journal*, 3(1), 19-22.
- Kar, N. and Haridas, K. (2003). Mental III health in Industrial Environment : Risk Factors and Management Issues. *Industrial Psychiatry Journal*, 12(1), 3-6.

- Khalique and Khalid (2009). "A study on occupational stress and general well being in sales professionals" *Behavioural Research Review*, 2009 Vol. 1(1), 56-59.
- Khalid and Khalique (2012). "Nature of job and occupational stress: A study of workers of an industry." *International Journal of Physical Social Sciences, USA*, Vol, 2. Issue, 2. Feb 2012.
- Kirk Caldy, Bruce, Cooper Cary L. and Ruffalo, Paul (1995). Work Stress and Health in a sample of U.S. Police. *Psychological Reports*, 76(2), 700-702.
- Kohler, G. (1992). Combating Office Stress with the Martial Arts. *Occupational Hazards*, 10:123-126.
- Kristensen, Tage S. (1996). Job Stress and Cardiovascular Disease : A theoretic critical review. *Journal of Occupational Health Psychology*, 1(3), 246-260.
- Lazarus, R.S. (1966). *Psychological Stress and the Coping Process*. New York : McGraw-Hill.
- Misra, Girishwar, & Jain, Uday G. (1996-97). Stress vulnerability: Nature and determinants. *Perspectives in Psychological Researches*, 19 & 20(1 & 2), 42 -54.
- Mohanty, Sujata, & Mishra, P.K. (1998). Occupational stress: A comparative study of public and private sector. *Social Science International Interdisciplinary Readings*, 14(1 & 2), 29-39.
- Nanda, P.K.; Dass, P.K. and Mishra, D.C. (1989). Hazards of Work Environment and Mental Health. *Industrial Psychiatry Journal*, 2(1), 39-41.
- Nilson et al (1992). Mental and Psychosomatic Work Injuries in Sweden. *Journal of Occupational Medicine*, 34(7), 726-730.
- Pandey, S. and Srivastava, S. (2003). Work Stress and Coping as Predictor's of Health Status of Career Women. *Journal of the Indian Academy of Applied Psychology*, 29(1&2), 83-92.
- Pani, Minaketan (1998) Environmental stress and mental health: Some innovative approaches to stress management. *Indian Journal of Psychometry and Education*, 29(1), 31-34.
- Parikh, J.C. and Rane, S.S. (1991). Mental Health of Fertilizer Employees: A Cross Cultural Study. *Indian Journal of Applied Psychology*, 28(1), 45-48.
- Pattanayak, B.P., & Dhar, Upider (1998) Psychological correlates of hierarchy and work area-A study in the Rourkela Steel Plant. *Management and Labour Studies*, 23(1), 269-276.
- Pestonjee, D.M. (1985). Stress Research : An Applied Focus. *Journal of Personality and Clinical Studies*, 1(1), 31-35.
- Pramanik, K.B. (1991). Stress at Work Place. *Journal of Occupational Health Services (O.H.S. Mirro)*, 1(1), 29-32.
- Rao, K. (1990). stress and illness : An Overview. *Indian Journal of Psychiatry*, 13-23.
- Selye, H. (1956). *The Stress of Life*. New York : McGraw-Hill.
- Shukla, T.R. and Kumar, S. (1989). A Study of Psychoneurosis in Industries. *Industrial Psychiatry Journal*, 2(1), 27-29.

- Singh, K. (Col.) (1989). A Study of Mental Illhealth in E.S.I. Population in Delhi. *Industrial Psychiatry Journal*, 2(1), 31-37.
- Srivastava, A.K. (1983). Role Base Stress and Mental Health of White Collar Employees. *Indian Journal of Clinical Psychology*, 10, 343-347.
- Srivastava, A.K. (1991). A Study of Role Stress Mental Health Relationship as Moderated by Adopted Coping Strategies, *Psychological Studies*, 36(3), 192-197.
- Srivastava, A.K. and Singh, A.P. (1981). *Manual of the Occupational Stress Index Varanasi: Department of Psychology, Banaras Hindu University.*
- Srivastava, k. (2003). Brief Intervention for Alcohol Problems. *Industrial Psychiatry Journal*, 12(1), 1-2.
- Srivastava, O.N. and Bhat, V.K. (1974). The Middle - Sex Hospital Questionnaire (M.H.Q.) Standardization on A Hindi Version. *Indian Journal of Psychiatry*, 16, 283-286.
- Stephoe, A. (1991). The Link between Stress and Illness. *Journal of Psychosomatic Research*, 35, 633-644.
- Taylor, P. and Gardner, W. (1975). *Health at Work, Man Under Stress* (Ed.). A.T. Welford, New York, a division of John Willey and sons Inc.
- Taylor, S. (1991). *Health Psychology*. New York : Random House.
- Welford, A.T. (1974). *Stress and Performance. Man under stress* (Ed.). A.T. Welford, New York, A division of John Willey & Sons.