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OCCUPATIONAL STRESS AND JOB PERFORMANCE

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# ABSTRACT

**Objective:** The present study was conducted to assess the levels of stress among five different depart- ments of a Multinational Corporation and the effect of stress on employee performance.

**Design:** Cross sectional Survey.

**Place and duration of study:** Workplace of a multinational organization factory located near Faisalabad from March 2005 to July 2005.

**Subjects and Methods:** Sample consisted of 65 employees working in 5 different Departments of a multinational organization. Occupational stress scale (OSS) consisting of nine factors contributing to stress was used to assess stress level of workers and its effect on performance was measured by the job performance rating scale. One-way Analysis of Variance (ANOVA) was applied to see the difference in stress level of workers among five different departments and correlation analysis was done to see the relationship of stress and performance.

**Results:** Results showed that employees in the Human Resource, Productions, Engineering & Refrig- eration, Stores and Electrical & Instrument Departments had moderate levels of stress due to work overload, co-workers and repetitive work. However there was significant negative correlation between workload and job performance (-0.286; p<0.05). But there was no significant relationship between level of overall stress and job performance.

**Conclusion:** It was concluded that there was moderate level of stress with no significant difference in different departments however no affect of stress was found on job performance.

**Key words:** Occupational stress, Job performance, OSS.

# INTRODUCTION

Stress results from an imbalance between de- mands and resources1. Stressors intrinsic to the job in- clude workload, poor physical conditions, low decision making latitude, role-based stress; associated with role conflict, role ambiguity and responsibility. At the same time the most obvious cause of stress at work, regard- less of occupation, is sheer overload. Workers tend to underestimate the amount of overload they are being subjected to, and seem to feel as though it was their sole responsibility, thereby increasing the amount stress they are under2**.**

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Role ambiguity an additional source of stress may be present in the work place when an employee does not have adequate information in order to carry out the task; or does not understand or realize the expectations with that particular role. Stress arising from unclear goals and / or objectives can ultimately lead to job dissatisfac- tions, lack of self- confidence, feelings of futility, a low- ered sense of self-esteem, depression, low motivation to work, increased blood pressure and pulse rate and intention to leave the job3, 4.

Supervisors and managers can be major sources of stress to their subordinates2. Previous research shows that poor leadership behaviors- such as when supervi- sors fail to be supportive of their employees or refuse to allow participation in decision making—can lead to stress. Evaluating employees for salary, promotion, or termination decisions; providing incentives and re- wards; and managing their output on a daily basis can lead to stress for managers themselves. Managers are much more likely to report stress- related physical com- plaints than are employees such as accounts whose daily responsibilities do not include supervising others5.

Working conditions of work can create stress4. Dan- gerous tasks or work settings, toxic chemicals, high noise levels, dust, overcooling, unpleasant odours, and other

stressful factors can lead to illness or disease. Assem- bly line work is associated with stress because it is rep- etitious, monotonous, noisy, and lacks challenge and control6. A study of 662 blue collar workers in the Neth- erlands found that the percentage of workers in factory jobs, farming, and highway transport dealing with physi- cal stressors, such as excessive noise, is as high as 30%5.

A concept called the Yerkes- Dodson principle, which is applied to athletic performances, lends itself quite nicely to explaining the relationship between eustress, distress and health. When stress increases, moving from eustress to distress, performance and health decreases and there is greater risk of disease and illness. The optimal stress level is the midpoint, prior to where eustress turns into distress. Studies indicate that stress- related hormones in optimal doses actually improve physical performance and mental processing skills, like concentration, making workers more alert. Beyond the optimal level though all aspects of perfor- mance begin to decrease in efficiency7.

When there is no stress, job challenges are ab- sent and performance tends to be low as stress increase, performance tends to increase. Eventually stress reaches a plateau that corresponds approximately with a person’s top day to day performance capability. Finally if stress becomes too great performance begins to de- cline, because stress interferes with it. An employee loses the ability to cope and becomes unable to make deci- sions and erratic in behaviors8.

The severity of job stress depends on the magni- tude of the demands, work under load, supervision, re- petitive work, physical environment, co-workers, that are being made and the individual’s sense of control or de- cision-making latitude he or she has in dealing with them. Scientific studies based on this model confirm that workers who perceive they are subjected to high de- mands but have little control is at increased risk for car- diovascular disease9. The present research seeks to identify the relationship between the occupational stress and job performance. This study further aims to exam- ine the level of stress in different departments in one organization and its effect on the performance of the employees.

# SUBJECTS AND METHODS

An ice cream factory of a multinational organiza- tion was selected for the study. The departments se- lected were, Human Resource department, electrical and chemical department, stores, engineering department and production department.

Workers of five different departments having dif- ferent levels of job e.g. managers, executive managers, senior supervisors, supervisors, editors, machine op- erators, helpers, etc. served as a sample for the present study. Random sampling technique was used for the

selection of departments. After randomly selecting five departments of the organization, random sampling tech- nique was applied for the selection of workers. Thirteen workers from each department were taken; so total sample of 65 employees were selected.

Demographic Questionnaire comprised of 10 ques- tions and was constructed by the researchers. It included the information about gender, age, education, designa- tion, name of the department, income range, marital sta- tus, family status, no. of departments and duration of the training.

## *Occupational Stress Scale:*

Occupational Stress Scale (OSS) was developed having the reliability co-efficient 0.70. OSS assesses the level of stress a person has because of the job, its requirements and its environment. OSS takes the struc- ture, requirements and conditions of the job and as- sesses how all these factors contribute to stress. The scale has 36 items. Four items measure each facet. The nine facets are work over load, under load, supervision, co-worker, physical conditions, monotony and boredom, work family conflict, career development and role con- flict / ambiguity. High scores on the scale means high stress and vice versa.

Pilot study was conducted to finalize the tool by incorporating all the major suggestions. The irrelevant items were excluded from the scale. The researcher assured the employees about the full confidentiality of all information, which is obtained from them.

## *Job Performance rating Scale:*

Rating scale of the job performance is a single statement item on which the supervisor rates the perfor- mance of the employee. Performance rating was the actual rating of the employees done by the senior hu- man resource management according to their own cri- teria of the relative department.

The Hypotheses was analyzed by means of corre- lation and one-way ANOVA. The results are presented according to the formulated hypothesis. SPSS (Statisti- cal Package for Social Sciences) version 10 for win- dows was used to analyze data.

# RESULTS

Table 1 shows the mean values of factors that con- tributed to stress in different departments.

Workload, co-workers and repetitive work were identi- fied as the major factors causing stress having mean values 19.3, 13.0, 12.4 respectively.

It was hypothesized that high level of stress has adverse effects on the employee’s performance. Corre- lational analysis was carried out to examine the rela- tionship between job stress and job performance. Re- sults are given in table 1.

Table 1

Scores on nine factors related to stress in Occupational Stress Survey and Correlations of factors that contributing to stress and the performance.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Factor** | **Departments** | | | | | | | | | | **Correl- ation with perfor- mance** |
| **Human Resource Management** | | **Productions** | | **Engineering & Refrigeration** | | **Stores** | | **Electrical & Instruments** | |
|  | **Mean** | **SD** | **Mean** | **SD** | **Mean** | **SD** | **Mean** | **SD** | **Mean** | **SD** |
| Work Load | 19.5 | 4.01 | 18.5 | 2.93 | 19.9 | 1.60 | 19.3 | 4.07 | 19.5 | 2.50 | -0.286\* |
| Work Under load | 10.8 | 6.34 | 12.3 | 2.81 | 12.3 | 4.25 | 13.0 | 3.01 | 10.2 | 4.08 | -0.090 |
| Role Ambiguity & Conflict | 10.2 | 2.94 | 8.9 | 1.25 | 10.0 | 2.44 | 9.2 | 2.80 | 10.4 | 3.52 | .056 |
| Supervision | 7.3 | 3.40 | 9.3 | 3.77 | 9.8 | 4.94 | 8.6 | 4.48 | 9.3 | 4.49 | .098 |
| Career Development | 8.6 | 3.27 | 9.3 | 3.70 | 9.9 | 4.60 | 8.5 | 3.77 | 10.8 | 4.35 | .003 |
| Physical Environment | 10.5 | 2.90 | 10.4 | 3.99 | 11.3 | 3.85 | 10.2 | 4.58 | 11.6 | 5.85 | -.110 |
| Repetitive or meaningless job | 13.2 | 3.67 | 13.9 | 3.83 | 10.5 | 3.40 | 12.3 | 3.44 | 12.2 | 5.40 | .150 |
| Work-family conflicts | 10.8 | 2.37 | 11.4 | 3.71 | 10.5 | 4.44 | 12.0 | 2.61 | 12.3 | 3.75 | -.027 |
| Coworker | 13.6 | 2.89 | 12.9 | 2.75 | 12.1 | 3.21 | 13.4 | 2.29 | 13.2 | 3.53 | .206 |
| **Total** | 104.9 | 14.47 | 107.2 | 14.32 | 106.6 | 17.59 | 106.8 | 12.24 | 109.8 | 26.05 | .001 |

Note \*p<0.05, \*\*p<0.01

The results did not support the hypothesis. The results indicated no significant relationship between level of stress and performance of the employee. The results are significant only on the workload factor that contrib- utes to stress. The P-value on workload factor in table 1 shows a negative relationship with performance (p<0.05;-0.286)

Correlation analysis was also carried out to ex- amine the relationship between education and perfor- mance of the employees as the performance rating done by the HR executive was based on educational level of the employees. The results shown in table 2 indicated that there is strong positive correlation between educa- tion received by the employee and job performance of the employee.

One-way analysis of variance (ANOVA) was car- ried out to assess job stress in different departments of

Table 2

Correlations between education and job performance of the employees.

|  |  |  |
| --- | --- | --- |
|  | Education | Performance |
| Educaiton | 1.00 | -3.43\*\* |
| Performance | -3.43\*\* | 1.00 |

\*p<0.05 \*\*p<0.01

the organization. The departments are Human Resource department, electrical and Instrument department, stores, engineering department and production department. It is obvious from the table 3 that there is no significant difference among 5 departments on stress level.

Table 3

One Way ANOVA of 5 Departments of a Multinational Organization Factory and nine factors that contribute to stress

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Sum of squares** | **df** | **Mean Square** | **F** | **Sig.** |
| **TOTAL** *Between Groups* | 163.754 | 4 | 40.938 | 132 | .970 |
| *Within Groups* | 18635.692 | 60 | 310.595 |  |  |
| *Total* | 18799.446 | 64 |  |  |  |
| **Workload** *Between Groups* | 13.692 | 4 | 3.423 | .341 | .849 |
| *Within Groups* | 601.692 | 60 | 10.028 |  |  |
| *Total* | 615.385 | 64 |  |  |  |
| **Under Load** *Between Groups* | 72.769 | 4 | 18.192 | 1.398 | .246 |
| *Within Groups* | 780.769 | 60 | 13.013 |  |  |
| *Total* | 853.538 | 64 |  |  |  |
| **Role Conflict** *Between Groups* | 22.769 | 4 | 5.692 | .778 | .544 |
| *Within Groups* | 438.769 | 60 | 7.313 |  |  |
| *Total* | 461.538 | 64 |  |  |  |
| **Supervision** *Between Groups* | 46.862 | 4 | 11.715 | .646 | .632 |
| *Within Groups* | 1087.385 | 60 | 18.123 |  |  |
| *Total* | 1134.246 | 64 |  |  |  |
| **Career** *Between Groups*  **Development** *Within Groups*  *Total* | 48.154 | 4 | 12.038 | .762 | .554 |
| 948.000 | 60 | 15.800 |  |  |
| 996.154 | 64 |  |  |  |
| **Physical** *Between Groups* | 20.154 | 4 | 5.038 | .267 | .898 |
| **Environment** *Within Groups* | 1134.308 | 60 | 18.905 |  |  |
| *Total* | 1154.462 | 64 |  |  |  |
| **Repetitive** *Between Groups* | 84.523 | 4 | 21.131 | 1.305 | .278 |
| **Work** *Within Groups* | 971.538 | 60 | 16.192 |  |  |
| *Total* | 1056.062 | 64 |  |  |  |
| **Work Family** *Between Groups* | 29.015 | 4 | 7.254 | .604 | .661 |
| *Within Groups* | 720.923 | 60 | 12.015 |  |  |
| *Total* | 749.938 | 64 |  |  |  |
| **Co Worker** *Between Groups* | 18.523 | 4 | 4.631 | .525 | .717 |
| *Within Groups* | 528.923 | 60 | 8.815 |  |  |
| *Total* | 547.446 | 64 |  |  |  |

# DISCUSSION

This study investigated the effects of occupation stress on the job performance of the employees and level of stress in 5 different departments of the organiza- tion. Self-constructed questionnaire was administered to assess the level of stress and performance rating was used to find out the relationship between level of stress and job performance.

We found that although there was a different level of stress experienced by the employees working in 5 different departments but the results were not significant

indicating that there was almost same level of stress in 5 different departments. This may be because all depart- ments have similar management and overall atmosphere of the work condition was friendly and workers supported each other. The organization seemed to have a very strong culture.

The second hypothesis was the effect of stress on the job performance and it was not supported because the results revealed that there was no significant effect of stress on the performance of the employees. These results are not consistent with the previous studies such

as by Abramis10 who found out the relationship of job stressors to job performance.

We found that the work overload was a major fac- tor, which contributed to stress. Pressures to avoid er- rors or complete tasks in a limited time constitute (work overload), a demanding job is seen during the visit that only factor causes the stress as supported by a survey in the U.S.A by Margolis11 found that quantitative overload was significantly related to number of stress symptoms and poor work motivation which is obviously affect the performance. Task demands were high and increase because it was a multinational target goal. Some of the employees were expected to do more work within the limited time because of the customer’s demand.

The other factor that might be inducing stress in the employees at work place was repetitive work. In pro- duction department it was reported that the stress of repetitive work was relatively high than the engineering and refrigeration department.

Working conditions were another factor that con- tributed to stress and had the modest effects on stress. This may indicate the working conditions were condu- cive for workers and the employees found it easier to carry out their job. The effect of working conditions on stress was similar to that of the co-workers. Hawthorne Studies12,13 also found that unpleasant working condi- tions, the necessity to work fast, to expend a lot of physi- cal effort and working excessive and inconvenient hours were related to poor performance and mental health. However these working conditions were not found in the present study.

Although supervision is found to be contributing to stress by Sorrentino14 in present study the findings were not consistent with this factor on the stress and performance. This may indicate that supervision was adequate and satisfactory for workers It can be con- cluded that there was no significant difference between the stress levels of workers among five different depart- ments of the organization. Further it was also observed that the relationship between workers stress level and their performance was not significant. This study has demonstrated that in an organization with a structured environment and adequate support for workers, the rou- tine job duties is not associated with the job stress, irre- spective of the department in which worker is perform- ing the duty.

There is a need for further research in this field, based on multiple organizations with a large a sample size. Factors such as hygiene, peer pressure, and per- sonality should also be taken into account.

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