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A COMPARATIVE STUDY OF OCCUPATIONAL STRESS AMONG EXECUTIVES, MANAGERS, AND ENGINEERS[#]

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The study aimed at comparing the occupational stress level as experienced by executives, managers, and engineers. The sample consisted of 135 respondents who were white collared employees (69 executives, 42 managers, and 24 engineers) exclusively different from blue and green collared employees, who responded on the Occupational Stress Index (Shrivastava & Singh, 1984). The results revealed that executives have highest role overload and strenuous working conditions. Engineers are said to possess the highest scores in role ambiguity, role conflict, unreasonable group and political pressure, under participation, and powerlessness; lowest scores in low status and overall highest occupational stress. Managers have least strenuous working conditions, as compared to executives and engineers. Strategies for coping with stress have been discussed.

Stress has become a major buzzword and legitimate concern of our times. Employees are working longer hours, taking on the work once done by laid off colleagues, meeting deadlines, and cutting back on expenses. Combine this with the double income family demands of monthly mortgages, childcare issues and aging parents, and the result for many is, anxiety, sleeplessness, irritability, physical, and mental deterioration (Geber, 1996).

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Seyle (1976) defined stress as the 'non-specific response of the body to any demand'. The contemporary analysis of stress proposes that stress is a transactional phenomenon, experienced when some situation is appraised as taxing the individual's resources beyond tolerable limits (Lazarus, 1991). The specific stress experienced by people often depends on the nature and demands of the setting in which people live. In this modern life, the vocation and occupations of the people govern these settings. The specialization in the sphere of work has shaped the experience of people significantly. Thus, teachers, engineers, doctors, executives, managers, and other people in other professions experience different types of stress to different degrees.

By and large, stress related research in India, has been mostly the replication of research conducted in the West, and the scales used are those constituted in Anglo-European cultures consisting of dramatic discrete events (Evans, Palsane, & D'Souza, 1983). However, several tools for measuring stress in organizational settings have been developed by many researchers in India (Pareek, 1982; Shrivastava & Singh, 1984).

Studies in general on executives, managers, and the engineers revealed that their roles are extremely demanding. They work under different management systems where the working conditions are not alike. In a survey of Fortune, 500 Chief Executive Officers (CEO's), over three-fourths agreed with the statement that 'large companies all over the world will have to push their managers harder, if they are to compete successfully with the Japanese and other global competitors (Solo, 1990).

US Government data indicate that an 'astonishing two-third of all American workers over 75 million people put in anything but traditional hours. Rather, they clock more than half their workday outside Ward Cleaver's time zone, the one that starts after breakfast and ends before supper, Monday to Friday (as cited in Fiereman, 1995). Research indicates that such chronic occupational demands can lead to stress (Schaubrocek & Daniels, 1993).

The present study is aimed at comparing the occupational stress levels of executives, managers, and engineers of Industrial Corporations in and around Mysore City. These three groups of people were analyzed on the dimensions of all the subscales present. It was hypothesized that the three groups will differ on these dimensions because of their different role demands and working conditions.

METHOD

Sample

Stratified random sampling was adopted to gather data; a total of 135 (129 men, 6 women) respondents (69 executives, 42 managers, and 24 engineers) working in Industrial Corporations in and around the city of Mysore participated in the study. Their age ranged from 29 to 52 years.

Instrument

Occupational Stress Index

Occupational Stress Index (OSI) by Shrivastava and Singh (1984) was administered to assess the level of stress among the three groups.

The scale consists of 46 items, each to be rated on the five-point scale. Out of 46 items, 28 are 'true' keyed and the rest 18 are 'false' keyed. Two different patterns of scoring have to be adopted for two types of items. For true items, strongly disagree – 1, disagree – 2, undecided – 3, agree – 4, strongly agree – 5 and for false keyed items, the reverse of the true keyed items are used. The items relate to almost all relevant components of the job life, which cause stress in one way or the other, such as role overload, role ambiguity, role conflict, group and political pressure, responsibility for persons, under participation, powerlessness, poor peer relations, intrinsic impoverishment, low status, strenuous working conditions, and un-profitability. The reliability index ascertained by split half (odd-even) method and Cronbach's alpha-coefficient for the scale as a whole were found to be .94 and .90 respectively. Shrivastava and Singh (1984) determined these indices exclusively on Indian population exclusively on 700 employees of different cadres operating in various production and non-production organizations. The validity of the OSI was determined by computing coefficients of correlation between the scores on OSI and various measures of job attitudes and behaviour and they were found to be sufficiently high.

Procedure

The questionnaire was given to each participant, who was requested to fill up and to return the same in four days. They were also briefed about the purpose of the study and their informed consent was obtained. It was made sure that they would read each question carefully and answer later, rather than stereotyped answering.

Scoring and Analysis

One way ANOVA has been employed to test significance of the difference between means of subscales of occupational stress of executives, managers, and engineers. After a significant *F* was obtained, more comparisons are made among a number of means, using Duncan Multiple Range Test (DMRT), (Duncan, 1955) as a post-hoc test is used in the present study.

RESULTS

Table 1 presents mean scores on each sub-scale of Occupational Stress Index of Executives, Managers and Engineers along with results of One Way ANOVA.

Table 1

Mean and One Way ANOVE of Executives, Managers and Engineers on Different Subscales of Occupational Stress Index

Sub Scales	Group Means				
	Executives	Managers	Engineers	F-ratio	*p*
Role overload	19.48 [b]	17.50 [a]	18.63 [a]	4.57	0.012
Role ambiguity,	9.35 [a]	9.00 [a]	11.13 [b]	6.21	0.003
Role conflict,	12.87 [a]	11.86 [a]	14.75 [b]	9.23	0.000
Unreasonable group and political pressure,	12.35 [a]	12.14 [a]	13.88 [b]	5.06	0.008
Responsibility for persons,	10.91	11.00	10.50	0.71	0.494
Under participation,	10.09 [a]	10.71 [a]	12.13 [b]	4.47	0.013
Powerlessness,	7.78 [a]	8.57 [a]	9.00 [b]	4.28	0.016
Poor peer relations,	10.52	10.64	10.75	0.19	0.827
Intrinsic impoverishment,	9.48	9.21	9.75	0.48	0.619
Low status,	6.39 [b]	6.64 [b]	5.25 [a]	4.60	0.012
Strenuous working conditions	11.00 [b]	9.71 [a]	10.88 [b]	4.13	0.018
Un-profitabilility	6.30	6.86	7.00	2.27	0.107
Total occupational stress	126.52 [a]	123.86 [a]	133.63 [b]	3.59	0.030

Note. Means followed by different superscripts are significantly different from each other as indicated by DMRT; (p=.05) df's 2, 132

Role overload

Results of One Way ANOVA revealed that executives, managers, and engineers differed significantly in their role overload ($F = 4.57$; $p<0.012$). Further, DMRT revealed that executives, having highest role overload scores, significantly differed from engineers and managers in their mean scores.

Role Ambiguity

In this subscale also, executives, managers, and engineers differed significantly ($F = 6.21$; $p<.003$). Further, DMRT revealed that only engineers significantly differed from executives and managers in their mean scores; managers and executives had equal mean scores. In other words the engineers had the highest role ambiguity.

Role Conflict

Results of One Way ANOVA revealed that executives, managers, and engineers differed significantly in their role conflict ($F = 9.26$; $p<.000$). DMRT revealed that engineers significantly differed from executives, and managers in their mean scores, and managers and executives had equal mean scores. In other words, engineers had the highest role conflict.

Unreasonable Group and Political Pressure

In this subscale, executives ($M = 12.35$), managers ($M = 12.14$) and engineers ($M = 13.88$) differed significantly ($F = 5.06$; $p<.00$). Further, DMRT revealed that only engineers significantly differed from executives and managers in their mean scores; managers and executives had equal mean scores. In other words, the engineers had the highest unreasonable group and political pressure.

Under Participation

In this subscale, executives, managers, and engineers ($M = 12.13$) differed significantly in their underparticipation scores ($F = 4.47$; $p<.013$). In other words the engineers had the highest amount of underparticipation.

Powerlessness

Results of One Way ANOVA revealed that executives, managers, and engineers differed significantly in their powerlessness subscale ($F = 4.28$; $p<.016$). That only engineers significantly differed from

executives and managers in their mean scores; and had the highest amount of powerlessness as compared to two other groups.

Low Status

In this subscale also, executives (M = 6.39), managers (M = 6.64) and engineers (M = 5.25) differed significantly (F = 4.60; p<.012). Further, DMRT revealed that only engineers significantly differed from executives and managers in their mean scores; managers and executives had equal mean scores. The engineers had the least status scores as compared to the other groups.

Strenuous Working Condition

Results of One Way ANOVA revealed that executives, managers and engineers differed significantly also on this subscale (F = 4.57; p<.012). Further, DMRT revealed that managers significantly differed from executives and engineers in their mean scores; executives and engineers had equal scores. In other words, managers had the least strenuous working condition scores.

Total Occupational Stress

In total, engineers were found to have significantly (F=3.59; p<.030) highest amount of occupational stress, followed by executives and managers, which is further confirmed by DMRT.

However, in rest of the subscales like Responsibility for Persons, Poor Peer Relations, Intrinsic Impoverishment, and Unprofitability, non-significant differences were observed among executives, managers and Engineers.

DISCUSSION

The major findings that have emerged from this study are:

1. Executives have more role overload, strenuous working conditions as compared to engineers and managers.
2. Engineers are said to posses the highest role ambiguity, role conflict, unreasonable group and political pressure, underparticipation, powerlessness; lowest in low status scores; and highest occupational stress as compared to executives and managers.
3. Managers have least strenuous working conditions as compared to executives, and engineers.

4. Non-significant differences were noticed in poor-peer relations, responsibility of stress, intrinsic environment, and unprofitability among all the three groups.

In the present study, engineers had highest occupational stress as compared to executives and managers. A thorough survey of literature did not yield any specific results on stress levels among white collared employees. The reasons may be that the engineers have to deal most of the time with machinery, floor level workers, and other related aspects (failure/breakdown of machinery; load shedding etc), this leads to decrease in stress tolerance leading to increased occupational stress; whereas the executives and managers showed highest stress on few factors, most of the times they are not directly dealing with floor level workers, their role demands are comparatively lesser than engineers. Engineers have to deal with technical aspects, which may cause more mental strain, whereas executives and managers deal with more of human relations and other related aspects, which may have lesser job stress compared to engineers. Apart from the above, many engineers may have to work considerably for a longer duration. To solve organizational production and related problems most efficiently, industrial engineers have to carefully study the product and its requirements, design manufacturing, and information systems, and use mathematical analysis methods such as operations research to meet those requirements. They have to develop management control systems to aid in financial planning and cost analysis, design production planning, and control systems to coordinate activities and control product quality, and design or improve systems for the physical distribution of goods and services. At times, deadlines or design standards may bring extra pressure to a job. When this happens, engineers may work long hours and experience considerable stress.

Psychologists and management scientists have different views about potential psychological and situational conditions or job factors, which cause job stress. Daniels (1996) proposes two perspectives on risk perceptions, the psychometric, and cultural views. The psychometric view suggests that senior managers may underestimate the risks associated with stress. The cultural view suggests that managers may consider stress management to be appropriate, since individuals not organizations, should be responsible for coping with stress. In a study of junior and senior managers, Chandraiah, Kenswar, Prasad, and Chaudhary (1996) found that junior managers expressed higher sources of job related tensions. Upinder and Bhinwa (1996) in a study on executives revealed that job stress does not increase with

experience and job stress inhibits thinking. Even bio-chemical analysis on engineers revealed that adrenaline reflects reactions to acute job-events, whereas cortisol seems to capture the chronic state of work-stress reactions (Yuko & Kazuko, 1997). It was found that marriage and family were not major stressors and in some cases, it was actually a positive feature of job satisfaction (Fox, 1996). Ling, Cary, and Donald (1997) in their study on employees found that sources of stress were negatively related to job satisfaction and positively related to mental and physical ill-health.

Strategies for coping with occupational stress

Several strategies have been put forth to deal with job stress by many researchers in the field (see, for example, Daniels, 1996; Frank, Campbell, & Stanislav, 1994). The core issues pertaining to the intervention strategies are to focus attention on work design variables such as:

(i) Control and specification of the area of work of the individual employee;

(ii) Uncertainty in terms of job-continuity;

(iii) Intrapersonal and interpersonal Conflicts;

(iv) Task demands of the job per se of the individual employee; and

(v) Surveillance of psychological disorders among the employees in workplace.

Further, the use of stress management strategies like conflict management and clarification of work expectations and ambiguities can predict the reduction in stressors like role conflicts, role ambiguity, work overload, time pressure, and overall stress reaction. Finally, education of executives, managers, and engineers concerning psychological well being and understanding, analyzing, and solving the stressors in work place, reduction in health care claims, and costs can play a major role in reducing the occupational stress.

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