

# **OCCUPATIONAL STRESS AND COPING MECHANISM TO INCREASE JOB SATISFACTION AMONG SUPERVISORS AT KARACHI PHARMACEUTICALS**

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## **Abstract**

This research explores the extent of stress and coping mechanism, in pharmaceuticals based in Korangi and other industrial areas in Karachi. The research is based on a previous study conducted by MA Khan (2006). The findings substantiate the view that coping mechanism increases job satisfaction of supervisors in the sampled firms. The design of the research is based on the measurement of the Organizational Stress Index. The data collected and analyzed is both from national and multinational pharmaceutical companies.

Major causes of job stress have been identified as task demand, role demand and organizational structure. In Korangi area there is no significant difference in overall stress and job satisfaction levels between national and multinational pharmas. In the non Korangi sample job satisfaction is higher and job stress level in the multinationals is lower than in national pharmas.

## **I. OBJECTIVE**

The objective of this study is to measure job induced stress and job satisfaction in pharmaceutical units based in Korangi Industrial Area and other Industrial areas of Karachi.

## **II. LITERATURE SURVEY**

### **II.1 Job Stress and Job Satisfaction**

Stress is a concept describing the response by a person to stressors in the environment. Selye's General Adaptation Theory (Selye, 1976) described stress response as bio -

physiological in nature. When a person is subjected to a stressor, a characteristic syndrome of physical reactions will occur. The stress response can be physical, psychological, emotional or spiritual in nature and is usually a combination of these dimensions. Stress, similarly, can arise from one or more dimensions and can be either internal or external.

Lazarus and Folkman (1984) viewed stress as a dynamic and reciprocal relationship between the person and her environment. In this theory, stressors can range from catastrophic events to irritating incidents. However, these stressors do not elicit a stress response in the individual until the person appraises it as exceeding the available resources for coping with the changed situation.

Stress and the negative outcomes of stress have been recognized as financially costly. Negative outcomes of job stress among individuals include illness, decline in overall quality of work, job dissatisfaction, absenteeism, and staff turnover (Schwab, 1996). Job stress describes the stress associated with the professional or work environment. Tension is created when the demands of the job or the job environment exceeds the capacity of the person to respond effectively. Job stress varies with each work environment.

The study of stress in organizations began most recognizably with work on role conflict and role ambiguity (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964). Since that beginning, many theories have been developed concerning the relationship between organizational stressors and resulting strains or illnesses (Beehr, 1998; French et al., 1982; French, Rogers, & Cobb, 1974; Karasek, 1979), and also the relationship between stressors and coping strategies (Lazarus, 1966; Lazarus & Folkman, 1984; McGrath, 1976), the underlying psychological appraisal processes (Lazarus & Folkman, 1984), and the causes of organizational burnout (Maslach, 1998)

Predominantly, researchers have studied the relationship between organizational stress and a post-stressor outcome or response (Kahn & Byosiere, 1992). On the other

hand, organizational antecedents to stress have received little systematic attention (Kahn & Byosiere, 1992; Koslowsky, 1998). Additionally, stress analysis has remained largely independent of other aspects of organizational behavior. Edwards' (1992) cybernetic model is one of the few attempts to establish explicitly a foundation for integrating organizational stress analysis research with other domains of organizational behavior. In spite of this effort, organizational stress remains unrelated to other areas of study such as motivation, absenteeism, and goal setting (Edwards, 1992). The result is that we still know little about organizational and extra organizational factors that cause and moderate organizational stressors and the ensuing stress (Kahn & Byosiere, 1992).

The condition of being under stress for continuing periods of time results in stress-based strains and illnesses. We refer to this pattern of continuing stress as chronic stress. Strains and illnesses are caused by long term or chronic exposure to stress-response hormones that are general in nature and which may be triggered by a variety of stressors (Sapolsky, 1992a). To clearly understand the research problem posed by this observation, three points must be recognized:

- The stress-response occurs quickly. The hormonal stress-response begins within seconds of perceiving the stressor (Sapolsky, 1992a).
- The hormonal responses associated with stress are designed to maximize energy available to the individual in order to cope with the immediate stressor, and are general to all classes of stressors (i.e., we cannot perform a blood-screening, and, based on the hormonal profile, identify the class of stressor to which the individual has been exposed).
- Stress-related strains and illnesses develop over extended periods of time during which the individual is exposed to stress-response hormones with insufficient recovery time.

The European Commission's definition of work-related stress is 'a pattern of emotional, cognitive, behavioral and physiological reactions to adverse and noxious aspects of work content, work organization and work environment ... Stress is caused by mismatch between the employee and his work, by conflicts between employee roles at work and outside it, and by not having a reasonable degree of control over work and over life.' (<http://agency.osha.eu.int/>).

Any job that is high in role conflict and ambiguity, low in autonomy and variety and situated in an organization that provides poor supervision will generate much job stress. However, people differ in their vulnerability to stress and in their coping effectiveness. The individual factors that increase susceptibility among workers are personality traits, career goals and previous experience. The amount of social support and stress experienced by the individuals outside of work also plays a role. (Edwards, 1992)

The literature suggests that the following measures should be adopted to ensure prevention of job stress:

- Ensure that the workload is in line with staff members' capabilities and resources.
- Design jobs to provide meaning, stimulation, and opportunities for employees and volunteers to use their skills.
- Clearly define roles and responsibilities.
- Give staff members opportunities to participate in decisions and actions affecting their jobs.
- Improve communications—reduce uncertainty about career development and future employment prospects.
- Provide opportunities for social interaction among staff members.
- Establish work schedules that are compatible with demands and responsibilities outside the job.

Psychologists refer to how employees feel about their jobs and how well they have adjusted to them as job satisfaction. Although psychologists vary in how they measure and define the term, job satisfaction implies that the job has met the individual's

requirements. It is usually measured by self-reporting questionnaires asking workers about various aspects of their jobs. Job satisfaction has been shown to be closely affected by job stress. Irvine and Evans (1995) also found a strong negative correlation between stress and job satisfaction although not as strong as that found by Blegen. Job satisfaction has also been negatively linked to intention to leave and actual turnover (Hinshaw & Atwood, 1983; Irvine & Evans, 1995; Price & Mueller, 1981).

Five aspects of satisfaction with the job are considered in the present project. These include satisfaction with: (i) opportunities for growth and one's perception of the extent to which one's efforts are valued; (ii) aspects of the job itself (e.g. job security); (iii) aspects of organization design and structure, such as communication flow; (iv) aspects of organizational processes (e.g. style of supervision); and (v) relationships with others at work (peers, superiors, subordinates)

## **II. 2. COPING MECHANISMS**

“Coping refers to behavior that protects people from being psychologically harmed by problematic social experience, a behavior that mediates the impact that societies have on their members” (Pearlin & Schooler, 1978). For the present project, six methods which people commonly adopt to cope with work stress are measured: (i) social support (the degree to which individuals rely on others as a means of coping with stress); (ii) task strategies (the degree to which individuals cope through strategies directed at reorganizing their work, such as planning ahead, setting priorities, and delegating); (iii) logic (coping through attempts to be rational and handle situations in an objective manner); (iv) home and work relationship (the extent to which the home is viewed as a refuge, and the existence of interests and activities that a person engages in outside of work); (v) time (the individual's use of time e.g. whether he/she deals with problems immediately rather than stalling); (vi) involvement (the degree to which the individual forces himself/herself to come to terms with reality, through strategies like recognizing his/her limitations, being able to release tension and concentrating on specific problems).

Much of the research on coping with job stress has viewed coping as a response to a stressor (Folkman & Lazarus, 1980; Latack, 1986; Havlovic & Keenan, 1991) and the context of the coping event clearly has an effect on the method of coping that a person adopts. However, there is some evidence that rather than being merely a response to an environmental stimulus, coping is an active and ongoing force that shapes what will occur during subsequent coping episodes (Cohen & Edwards, 1988). Dolan and White (1988) found that individuals were relatively consistent in the strategies they adopted to cope with everyday stressors. Fleishman (1984) provided evidence to link aspects of personality to coping methods: he found that the personality variable of self-denial affected the use of emotion-focused coping, and nondisclosure reduced advice-seeking. Laboratory studies show that avoidance strategies can reduce stress reactions to such things as cold, radiant heat or noise (Chaves & Barber, 1976).

Sources of managerial stress have been well documented since the late 1970s. Ivancevich and Matteson (1980) identified four categories of work stressors: physical environment, individual level (a mixer of role and career development variables), group level (primarily relationship-based) and organizational level (a mixture of climate, structure, job design and task characteristic) Schuler (1982) also identifies seven categories of work stressors in organizations:

job qualities, relationships, organizational structure, physical qualities, career development, change and role in the organization.

Quick and Quick (1984) proposed four categories of stressors: task demands, physical demands, interpersonal demands and organization structure. These stressors have been earlier explained in the study conducted by Khan (April 2006). Stress is involved in an environmental situation that is perceived as presenting demands which threaten to exceed the person's capabilities and resources for meeting it, under conditions where he or she expects a substantial differential in the rewards and costs from meeting the demand as against not meeting it (Mc Grath, 1976). From documented evidence, it is clear that as far as work life is concerned extreme stress is so aversive to employees that they will try to avoid it by withdrawing either psychologically (through disinterest or lack of involvement in the job etc.) physically (frequent late coming, absenteeism, lethargy etc.) or by leaving the job entirely (Beehr and Newman, 1978). It predisposes the individual to develop several psychosomatic illness. In contrast, the absence of extreme stress would result in more satisfied, happy, healthy and effective employees.

However, the stress one experiences in the job varies from mild to severe depending on one's physiological, psychological and social make up (French and Caplan, 1970, Margolis et al., 1974., Miller 1960 and Wardwell et al., 1964).

Stressors at the individual level have been studied more than any other category. Role conflicts, role ambiguity, role overload and under load, are widely examined individual stressors (Mc Grath 1976; Newton and Keenan, 1987). It is also reported by many researchers that low job satisfaction was associated with high stress (Hollingworth et al., AbdulHalim, 1981; Keller et al., 1975; Leigh et al, 1988).

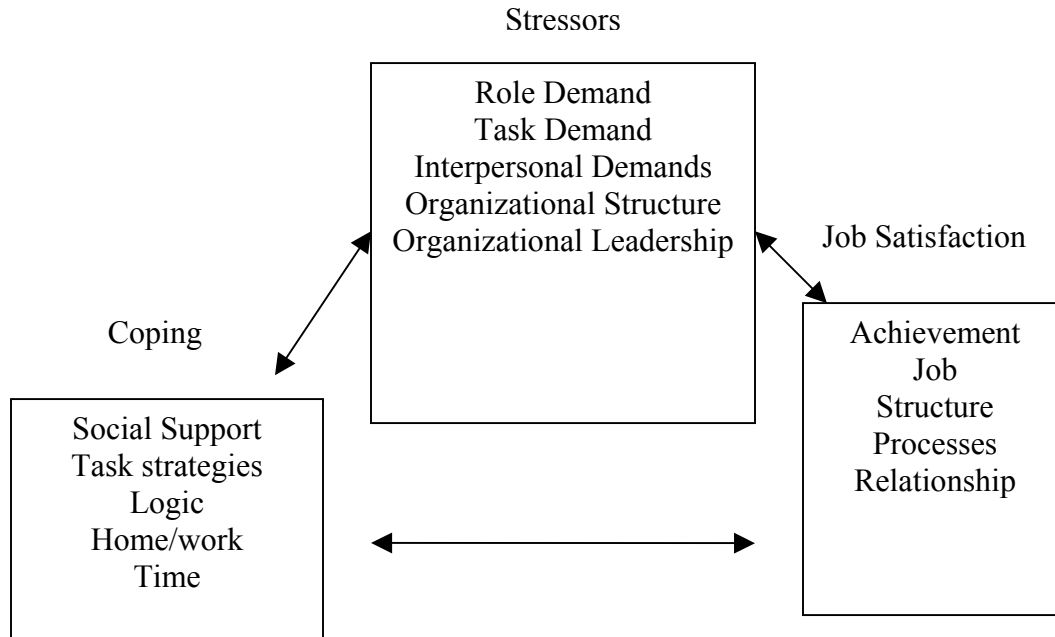
### **III. METHODOLOGY**

The present study is concerned with a range of environmental factors, in the workplace and at the work-nonwork interface, which have been linked to stress-related outcomes (Caplan et al, 1975; Cooper, 1986; Cooper & Marshall, 1976; Frew & Bruning, 1987. Jackson, & Schuler, 1985; Parasuraman & Alutto, 1984; Rizzo, House & Lirtzman, 1970; Schuler, 1980; Van Sell, Brief & Schuler, 1981). The present paper examines five potential workplace stressors (Task Demands, Role Demands, Interpersonal Demands, Organizational Structure and Organizational Leadership) Figure 1

Five aspects of satisfaction with the job are considered in the present project. These include satisfaction with: (i) opportunities for growth and one's perception of the extent to which one's efforts are valued; (ii) aspects of the job itself (eg job security); (iii)

aspects of organization design and structure, such as communication flow; (iv) aspects of organizational processes (e.g. style of supervision); and (v) relationships with others at work (peers, superiors, subordinates).

Figure1: The relationship between Stressors, Coping and Job Satisfaction



### III.1 The Sample

The sample for this study consisted of 93 supervisors, drawn on the basis of random sampling from 17 pharmaceutical companies situated in Korangi and other industrial areas of Karachi. The respondents' function within the company included supervising various production processes, supply and distribution, quality assurance and the well being of the workers under his supervision. All the respondents completed a questionnaire based on Occupational Stress Index, (OSI) (Srivasta and Singh 1981).

### III.2 Procedure:

Data for this investigation were collected in the third quarter of 2006 in two steps starting with seeking permission from the authorities concerned to involve supervisors in their company in the study. Almost all the authorities agreed to cooperate in the study.

Prior appointments were obtained from supervisors who were given the questionnaire to complete at their own time and leisure. Those who had free time in the office filled in the questionnaire on the spot and others chose some other time.

### **III.3 Questionnaire**

The questionnaire was based on the Occupational Stress Index (OSI) and used the Likert scale; which is the most commonly used rating scale. This consists of a set of declarative statements with which respondents are asked to indicate the degree of their agreement or disagreement.

The Occupational Stress Index (OSI) is questionnaire-based, and does not require on-the-job analysis. The Occupational Stress Index (OSI) is an additive burden model, which focuses on work stressors relevant to the cardiovascular system (Belkic 1995(a)). The OSI incorporates elements of the Job Strain Model (Karasek 1979), as well as other formulations of how stress leads to cardiovascular disease, such as features of work in high-risk occupations. The underlying motivation for developing such an approach is to help pinpoint areas for intervention, by striving to reflect actual work experiences. The Occupational Stress Index (OSI) can be tailored to specific occupations, thus allowing comparison among occupations of the stress burden faced by workers.

## **IV RESULTS**

**Measures** of central tendency and dispersion classified by Job satisfaction, stressors and coping mechanism are presented in table 1. It is obvious that the highest level of stress is recorded with respect to “task demand” (i.e. structure of a person’s job including the degree of independence, use of machinery to do the tasks formerly done by people, working conditions and physical layout) and “organizational structure” (including tooleadership (employees are afraid of losing their jobs or whether they trust that things will work out)).



Table 1: Central tendencies of stressors, job satisfaction and coping mechanism whole sample

The lowest level of stress is generated by factors grouped under “organizational

	<i>Job satisfaction</i>	<i>Task demand</i>	<i>Role demand</i>	<i>Interpersonal demands</i>	<i>Org Structure</i>	<i>Org Leadership</i>	<i>Coping mechanism</i>	<i>Overall stress</i>
Mean	3.71	3.28	2.90	2.52	2.93	2.44	3.40	2.80
Standard Error	0.06	0.08	0.06	0.07	0.08	0.10	0.07	0.06
Median	3.75	3.50	2.80	2.50	3.00	2.50	3.40	2.92
Mode	3.38	3.50	2.80	3.00	3.00	3.00	3.60	3.09
Standard Deviation	0.60	0.77	0.62	0.71	0.80	0.97	0.63	0.77
Sample Variance	0.36	0.60	0.38	0.51	0.65	0.93	0.39	0.33
Kurtosis	11.13	0.97	2.49	(0.13)	0.46	(0.33)	5.93	3.01
Skew ness	(1.90)	(0.27)	(0.53)	0.01	(0.28)	0.32	(1.56)	(1.02)
Range	4.64	4.48	4.09	3.68	4.07	4.08	4.21	3.90
Minimum	0.23	0.52	0.31	0.46	0.59	0.92	0.29	0.26
Maximum	4.88	5.00	4.40	4.14	4.67	5.00	4.50	4.16
Sum	341.75	301.52	266.66	232.19	269.43	224.33	312.75	257.17
Count	92.00	92.00	92.00	92.00	92.00	92.00	92.00	92.00

leadership (employees are afraid of losing their jobs or whether they trust that things will work out).

It can be seen that overall- job satisfaction level is high (an average of 3.71 i.e. 74.2 percent of the maximum possible score 5) among respondents. This may be due to their coping mechanism (the ways in which employees themselves alleviate stress levels and promote higher quality of life). The high score on the coping mechanism (i.e. 68 percent of the possible maximum) indicates that people focus on improving quality of life and in doing so incorporate elements of positive psychology. The result is that they are less stressed and more satisfied in their jobs.

The standard deviation of all stressors was in general low (an average of 27% of the mean for all stressor). This indicates that the overall level of stress among supervisors in the sampled companies is broadly similar and there is not much variation in the underlying causes of supervisor stress.

It is interesting to note that a relatively low standard deviation relative to mean is recorded for the role demand stressor (only 21 percent of the mean). The role demand stressor is the second highest stress generator and it appears that there is little difference among the sampled employees in terms of role ambiguity, overload, incompatibility and expectations.

The overall stress level average is 2.80 with a standard deviation of 0.77 (only about 27.5 percent of the mean) showing that there is very little difference in the overall stress generated by work processes for supervisors in our sample.

The overall job satisfaction level average is 3.71 with a standard deviation of 0.60 (only 16 percent of the mean) showing that there is very little difference in overall stress generated by work processes for supervisors in our sample of companies. Hence, the job satisfaction level is high.

The overall coping mechanism level on average is 3.4 with a standard deviation of 0.63 (only 18 percent of the mean) showing that employees have managed their time effectively and efficiently. Also they have managed stress arising from the environment. Besides this employees have established short-term plans which help eliminate anticipatory stressors by focusing attention on immediate goal accomplishment instead of contemplating a possibly fearful future. The employees are also coping with stress through a “small-win” strategy i.e. a tiny but definite change made in the desired direction. In short, they have resiliency or capacity to cope effectively with stress.

Following Srivasta and Singh(1981) we define low stress, as a score below 50 percent of the maximum score (which in our case is 2.5). High scores are seen as exceeding 50 percent of the maximum. The average stress score is 2.80 (i.e. 56% of maximum score) and the highest average score recorded (for task demand) is 66% of the maximum score. We may therefore conclude that overall stress is medium to high. Only “task demand” and “organizational structure” scores are well above high threshold. Clearly the job of a supervisor in the companies of our sample is stressful with varying degrees of stress levels.

This finding is somewhat modified by the value of the skewness indicator which is negative for task demand, role demand and organizational structure. This indicates that the majority of respondents' record scores below the mean indicating that stress generated is perhaps lower than reflected by the means of these stressors. For interpersonal demand and organizational leadership indicators skewness is positive

indicating stress perhaps significantly higher for most supervisors than reflected in the mean.

(Table 2a) Average stress level of sampled firm from Korangi area

Firms	<i>A</i>	<i>B</i>	<i>C</i>	<i>E</i>	<i>F</i>	<i>D</i>	<i>G</i>
Mean	2.88	2.85	2.51	3.32	2.39	2.54	2.93
Standard Error	0.24	0.23	0.23	0.21	0.22	0.19	0.08
Median	3.07	2.82	2.47	3.09	2.36	2.70	2.93
Mode	-	-	-	3.09	-	-	-
Standard Deviation	0.53	0.51	0.50	0.48	0.50	0.42	0.18
Sample Variance	0.28	0.26	0.25	0.23	0.25	0.18	0.03
Kurtosis	(2.55)	1.62	1.24	4.76	(0.33)	0.59	(1.17)
Skewness	(0.44)	(0.36)	0.60	2.17	(0.27)	(1.20)	0.33

(Table 2b) Average stress level of sampled firm from Non Korangi Areas

	<i>H</i>	<i>M</i>	<i>N</i>	<i>O</i>	<i>Q</i>	<i>I</i>	<i>P</i>	<i>J</i>	<i>K</i>	<i>L</i>
Mean	3.08	3.28	2.68	2.40	2.61	2.91	2.69	3.03	2.58	2.93
Standard Error	0.23	0.12	0.30	0.18	0.35	0.24	0.13	0.05	0.20	0.26
Median	3.09	3.24	2.26	2.21	2.48	2.92	2.63	3.07	2.33	3.24
Mode	-	-	-	-	-	-	-	-	-	-
Standard Deviation	0.50	0.26	0.68	0.39	0.79	0.53	0.29	0.12	0.46	0.58
Sample Variance	0.25	0.07	0.46	0.15	0.62	0.29	0.09	0.01	0.21	0.34
Kurtosis	2.00	2.34	(3.28)	(1.71)	(2.62)	2.00	(1.20)	4.71	(3.06)	0.16
Skewness	(1.35)	0.84	0.58	0.52	0.27	(0.22)	0.57	(2.15)	0.49	(1.20)

Table 2 (a) presents scores of companies in terms of overall stress for Korangi area and table 2 (b) presents the data for non-Korangi area. For Korangi based companies, the highest level of skewness is recorded for the multinational ‘E’. This is approximately 32 percent higher than the lowest stress level recorded by a multinational company (‘F’) and 18 percent higher than the average stress level.

Korangi based pharmaceutical companies ‘G’, ‘A’ and ‘B’ have an average stress score level of 2.93, 2.88 and 2.85 respectively which is the second, third and fourth highest in our sample and slightly (statistically insignificant) above the overall average stress (by about 5 percent). The other two Korangi pharma; ‘C’ and ‘D’ have overall stress levels below the group average level (by about 10 percent). We therefore conclude that the overall level of stress experienced by supervisors in Korangi pharma is not

significantly different from that in other companies. Skewness for ‘C’, ‘E’ and ‘G’ is positive (and standard deviation is low relative to mean) indicating that most supervisors experience more stress than that reflected in the average overall score of these companies. Skewness for ‘A’, ‘B’, ‘F’ and ‘D’ is negative (and standard deviation is low relative to mean) indicating that most supervisors experience less stress than that reflected in the average overall score of the company.

For Non-Korangi based companies the highest level of stress is recorded for a multinational ‘M’. This is more than 36% higher than the lowest stress level recorded by a company ‘O’ and 17 percent higher than the average stress level. Other companies e.g. ‘H’, ‘I’, and ‘J’ have an average score level of 3.08, 2.91 and 3.03 respectively and slightly above the overall average (by about 10 percent). We therefore conclude that the overall level of stress experienced by supervisors in these pharmas is not significantly different from that in other companies.

The other companies e.g. ‘N’, ‘Q’, ‘P’ and ‘K’ have an average score level 2.68, 2.61, 2.69 and 2.58 respectively and slightly below (statistically insignificantly) below the overall average. We therefore conclude that the level of stress in these companies is not significantly different from that in other companies.

Skewness for six companies out of ten outside Korangi is positive (and the standard deviation is low relative to mean) indicating that most supervisors experience more stress than that reflected in the average overall score of these companies.

Skewness for four companies out of ten is negative (and standard deviation low relative mean) indicating that most supervisors experience less stress than that reflected in the average overall score of these companies.

The average job satisfaction level in Korangi based and Non Korangi based companies is found higher than overall average job satisfaction level in about 11 companies out of 17 (65% of the companies) indicating that employees are coping with stress.

Table 2 c) Average Job Satisfaction level of sampled firms Non Korangi Area

	<i>H</i>	<i>M</i>	<i>N</i>	<i>O</i>	<i>Q</i>	<i>I</i>	<i>P</i>	<i>J</i>	<i>K</i>	<i>L</i>	Mean	3.
Median	3.67	3.83	4.58	3.67	4.29	3.83	3.67	3.08	3.13	3.38		
Mode		-		-	-	3.67	4.46	3.83	3.63	3.04	-	- Star
Sample Variance	0.08	0.13	0.31	0.03	0.20	0.11	0.07	0.02	0.06	0.09		
Kurtosis	(1.79)	4.33	(2.77)	3.98	0.30	3.49	(0.52)	(2.98)		3.24		
Skewness	0.13		0.17			(2.05)	(0.49)		1.91	(1.16)		
	(1.80)	1.08	0.59		1.61	1.12						

(Table 2 d) Average Job Satisfaction level of sampled firms in Korangi

*A*      *B*      *C*      *E*      *F*      *D*      *G*

Mean	3.79	4.41	3.48	3.73	4.07	3.80	3.29
Standard Error	0.26	0.12	0.19	0.20	0.13	0.19	0.18
Median	3.63	4.38	3.38	3.50	4.08	3.88	3.33
Mode	-	-	-	3.38	3.50	4.08	-
-							
Standard Deviation	0.58	0.26	0.42	0.44	0.30	0.42	0.41
Sample Variance	0.34	0.07	0.18	0.19	0.09	0.18	0.17
Kurtosis	3.68	(0.44)	4.16	0.47	1.78	(1.71)	1.03
Skew ness	1.85	0.72	1.99	1.16	0.27	(0.26)	0.22

(Table 2 e) Average Coping Mechanism of sampled firms Non Korangi

	<i>H</i>	<i>M</i>	<i>N</i>	<i>O</i>	<i>Q</i>	<i>I</i>	<i>P</i>	<i>J</i>	<i>K</i>	<i>L</i>
Mean					3.56	3.27	2.76	3.42	3.33	3.46
3.63	2.98	3.16		3.00						
Standard Error	0.19	0.11	0.17	0.22	0.36	0.19	0.09	0.17	0.14	0.35
Median	3.70	3.22	2.80	3.30	3.56	3.40	3.56	3.20	3.30	3.10
Mode	3.90	-	3.10	3.00	-	-	3.50	3.20	3.30	3.10
Standard Deviation	0.42	0.26	0.38	0.50	0.81	0.42	0.21	0.38	0.31	0.78
Sample Variance	0.18	0.07	0.14	0.25	0.66	0.18	0.04	0.14	0.10	0.61
Kurtosis	0.58	1.13	(0.31)	0.54	1.22	0.58	4.20	0.02	(0.25)	3.00
Skew ness	(1.17)	1.03	(0.78)	1.09	(0.73)	0.83	2.02	(1.14)	(0.77)	(1.45)

(Table 2 f) Average Coping Mechanism of sampled firms Korangi Area

	<i>A</i>	<i>B</i>	<i>C</i>	<i>E</i>	<i>F</i>	<i>D</i>	<i>G</i>
Mean	3.73	4.02	3.41	3.68	3.76	3.70	3.64
Standard Error	0.24	0.19	0.13	0.22	0.34	0.21	0.09
Median	3.67	4.00	3.20	3.80	4.10	3.80	3.70
Mode	-	-	3.20	-	4.40	3.20	3.70
Standard Deviation	0.54	0.42	0.30	0.50	0.77	0.48	0.19
Sample Variance	0.29	0.18	0.09	0.25	0.59	0.23	0.04

Kurtosis	1.20	0.27	(2.67)	(0.41)	(1.92)	(2.96)	4.45
Skewness		0.15	(0.60)	0.72	(0.29)	(0.73)	(0.23)
	(2.05)						

It can be seen that in Korangi & Non-Korangi based 13 companies out of 17, the employees are coping well with stress. The other 4 companies are insignificantly under the overall average.

Table 3 (a) presents data on stressors, classified by companies based in Korangi which are further divided into national and multinational companies.

**National Company-Korangi**

The minimum stress level is recorded in national company “A” which is 3.11 (62%) of the maximum and this is due to relatively low stress generated by organizational leadership and interpersonal demands. It can be seen that the national company “C” has the highest overall stress 3.441 (68% of the maximum) and this is mainly due to relatively high stress generate by organizational leadership and task demand. Company B has the highest Job Satisfaction 4.10 level (82% of the maximum) which can be attributed to the high coping mechanism score 3.84 (77% of the maximum).

There is no significant difference between Korangi based national and multinational pharma in terms of average levels of overall stress job satisfaction and coping.

**(Table 3 a) Stressors, Job Satisfaction and Coping Mechanism classified by Companies based in Korangi area**

	<b>Job</b>	<b>Task</b>	<b>Role</b>	<b>Interpersonal</b>	<b>Org.</b>	<b>Org.</b>	<b>Coping</b>
<b>Overall</b>	<b>satisfaction</b>	<b>demand</b>	<b>demand</b>	<b>demand</b>	<b>structure</b>	<b>leadership</b>	<b>mechanism</b>
<b>stress</b>							
A	3.47	3.20	3.20	2.75	3.13	2.30	3.34
	3.11						
B	4.10	3.30	3.07	2.70	2.87	1.85	3.84
	3.25						
C	3.48	3.70	3.40	3.39	2.07	4.10	3.37
	3.41						

**Multinational**

D	3.81	3.30	3.48	2.55	3.80	2.85	3.70
	3.39						
E	3.70	2.60	2.64	2.37	2.20	2.50	3.68
	2.86						
F	4.07	3.70	2.88	2.21	2.77	2.00	3.76
	2.57						
G	3.29	2.80	2.92	2.35	3.80	2.88	3.64
	3.38						

High stress level is recorded by “D” and this is mainly because of organizational structure 3.80 (76% of the maximum) and role demand 3.48 (70% of the maximum) however the company also recorded a high job satisfaction score 3.81 (76% of the maximum) which is due to high coping mechanism 3.70 (74% of the maximum). The lowest stress level of 2.57 (52% of the maximum) is in company “F” where job satisfaction is high as in their coping mechanism score.

Table 3 b provides data for companies based in Non Korangi areas and further classified into national and multinational.

In Non Korangi Based companies it can be seen that the highest overall stress level is in company “I”, this is due to task demand 3.70 (74% of the maximum) and organizational structure 2.93 (59% of the maximum). The lowest stress is recorded in company “H” which is 2.80 (56% of the maximum), the same company records high job satisfaction 3.63 (73% of the maximum) due to high coping mechanism 3.56 (71% of the maximum).

### **Multinational Company- Non Korangi**

Company “M” records the highest overall stress level which is 3.11 (62% of the maximum) and this is due to the organizational leadership 3.65 (73% of the maximum) and task demand 3.30 (66% of the maximum).

**(Table 3 b) Stressors, Job Satisfaction and Coping Mechanism classified by Companies based in Non Korangi area**

<b>Overall stress</b>	<b>Job satisfaction</b>	<b>Task demand</b>	<b>Role demand</b>	<b>Interpersonal demand</b>	<b>Org. structure</b>	<b>Org. leadership</b>	<b>Coping mechanism</b>
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H	3.63	3.10	2.60	2.80	3.20	2.95	3.56
	2.80						
I	3.70	3.70	3.11	2.99	2.93	2.10	3.46
	3.51						
J	3.14	3.50	2.88	2.80	3.47	2.75	2.98
	3.08						
K	3.18	3.10	2.96	2.42	2.87	1.80	3.16
	2.84						
L	3.50	3.20	2.68	2.70	3.07	3.25	3.04
	3.37						
	<b>Multinational</b>						
N	4.31	2.90	2.52	2.08	2.73	1.10	2.76
	2.22						
O	3.83	3.30	2.48	2.30	2.73	1.70	3.62
	2.31						
P	3.88	3.10	2.92	1.95	2.93	2.70	3.63
	2.65						
Q	4.11	4.00	3.08	2.71	2.53	1.50	3.33
	2.59						

The lowest stress level 2.22 (44% of the maximum) is recorded by “N” and this is due to high Job Satisfaction 4.31 (86% of the maximum) and low ratings on stressors.

Outside Korangi multinational pharmas seem to have significantly high levels of job satisfaction averaging 4.06 – almost 20 percent higher than the average job satisfaction score of national pharmas outside Korangi. Overall job stress is on average significantly lower in non Korangi multinationals than in non Korangi national pharmas.

Table 4a Correlation Matrix Stressor, Job Satisfaction and Coping Mechanism Korangi

To identify the impact of each stressor on job satisfaction and over all stress a correlation matrix is developed. The summarized results are given above.

Correlation between Job satisfaction and coping mechanism is 0.73 which is relatively high. This indicates that Job satisfaction is associated with coping mechanism in companies situated in the Korangi area.



Similarly a relatively stronger relationship is found between overall stress and role demand 0.68, interpersonal demand 0.59 and organizational leadership 0.58 which indicates that these stressors contribute the most to overall stress in Korangi based companies.

Table 4b Correlation Matrix Stressor, Job Satisfaction and Coping Mechanism Non Korangi

Job mechanism	Task Stress	Role Stress	Interpersonal Sat.	Org demand	Org demand	Org demand	Coping structure	Overall leadership	
Job Satisfaction			1.00						
Task Demand			0.01	1.00					
Role Demand			0.01	0.50	1.00				
Interpersonal Demand			-0.16	0.60	0.64	1.00			
Organizational Structure			-0.48	-0.13	0.28	0.47	1.00		
Organizational leadership			-0.21	-0.06	0.43	0.49	0.78	1.00	
Coping Mechanism			0.20	0.28	0.38	0.09	-0.11	0.25	1.00
									Overall stress

Job mechanism	Task Stress	Role Stress	Interpersonal Sat.	Org demand	Org demand	Org demand	Coping structure	Overall leadership	
Job Satisfaction			1.00						
Task Demand			0.15	1.00					
Role Demand			-0.01	0.48	1.00				
Interpersonal Demand			-0.20	0.49	0.55	1.00			
Organizational Structure			-0.24	-0.18	0.16	-0.09	1.00		
Organizational leadership			-0.38	-0.02	0.44	0.59	0.17	1.00	
Coping Mechanism			0.21	-0.01	0.27	-0.05	0.06	0.14	1.00
Overall stress			0.45	0.11	0.63	0.64	0.34	0.64	0.16
									1.00

Table 4 c presents data for the whole sample. Here the correlation between overall stress and Interpersonal demand is 0.64, Organizational leadership is also 0.64 and with Role demand it is 0.63 is relatively high, which indicates that these stressors contribute the most to overall stress. It is interesting to note that in Tables 4a, 4b and 4c, a significant positive correlation exists between job satisfaction and average stress – prima

face a paradoxical result. The strengthens our conclusion (stressed throughout the paper) that it is effective personal coping that allows supervisors to achieve job satisfaction despite relatively high level of job stress in the sample companies in both Korangi and non Korangi areas.

## V. CONCLUSION

Stress level among supervisors in the pharmaceutical companies in our sample is medium to high in terms of our scale of measurement.

The main sources of work related stress are Task demand, Role demand and Organizational Structure. The overall message seems to be that pharma companies must seek to redesign job structure to redirect task demand and role demand. Role expectations must be clearly articulated. Similarly there is a considerable room for improvement in “Organization Structure” and “Interpersonal demands” by improving personal relationships at work and by providing open channels of communication and career growth and motivation.

Job satisfaction level among supervisors in all the pharmaceutical companies in our sample is medium or slightly above average in term of our scale of measurement. A Non Korangi company ‘J’ has relatively low job satisfaction level (3.14 i.e. 15 percent below the overall average) and it is evident that their coping mechanism is also well below the average, that is why they are more stressed and less satisfied compared with those who are coping well with the stress and are therefore more satisfied. Hence it can be concluded that although supervisors on the average are satisfied with their jobs this is because they are coping well with stress but their job can be made more satisfying by alleviating stressor effect by redesignings organizational processes.

## Reference

Beehr, T. (1998). An Organizational Psychology Meta-Model of Occupational Stress. In C. L. Cooper (Ed.), *Theories of Organizational Stress* (pp. 6-27). Oxford: Oxford University Press.

Edwards, J. R. (1992). A cybernetic theory of stress, coping, and well being in organizations. *Academy of Management Review*, 17(2), 238-274.

Edwards, J. R., Caplan, R. D., & Harrison, R. V. (1998). Person-Environment Fit Theory. In C. L. Cooper (Ed.), *Theories of Organizational Stress* (pp. 28-67). Oxford: Oxford University Press.

French, J. R. P., Caplan, R. D., & Harrison, R. V. (1982). *The Mechanisms of Job Stress and Strain*. New York: John Wiley & Sons.

French, J. R. P., Rogers, W., & Cobb, S. (1974). A model of person-environment fit. In G. V. Coelho, Hamburg, & J. E. Adams (Eds.), *Coping and Adaptation* . New York: Basic Books.

Kahn, R. L., & Byosiere, M. (1992). Stress in organizations. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of Industrial & Organizational Psychology* (2nd ed., Vol. 3, pp. 571-650). Palo Alto, CA: Consulting Psychologists Press.

Kanfer, R. (1992). Motivation Theory and Industrial and Organizational Psychology. In M. D. Dunnette & L. Hough (Eds.), *Handbook of Industrial & Organizational Psychology* (Second ed., Vol. 1, pp. 39-74). Palo Alto, CA: Consulting Psychologists Press, Inc.

Karasek, R. A. (1979). Job demands, job decision latitude and mental strain: implications for jobs redesign. *Administrative Science Quarterly* (24), 285-307.

Koslowsky, M. (1998). *Modeling the stress-strain relationship in work settings*. New York: Routledge.

Lazarus, R. S., & Folkman, S. (1984). *Stress, Coping, and Adaptation*. New York: Springer-Verlag.

Locke, E. A. (1968). Toward a theory of task motivation and incentives. *Organizational Behavior and Human Performance*(3), 157-189.

Locke, E. A., Shaw, K. N., Saari, L. M., & Latham, G. P. (1981). Goal-setting and task performance: 1969-1980. *Psychological Bulletin* (90), 280-289.

Maslach, C. (1998). A Multidimensional Theory of Burnout. In C. L. Cooper (Ed.), *Theories of Organizational Stress* (pp. 68-85). Oxford: Oxford University Press.

McGrath, J. E. (1976). Stress and behavior in organizations. In M. D. Dunnette (Ed.), *Handbook of industrial and organizational psychology*. Chicago: Rand McNally.

Muhammad Ahmad Khan, Work stress in Korangi Pharmaceuticals. Market Forces April 2006

Sapolsky, R. (1992a). Neuroendocrinology of the stress-response. In J. Becker, S. Breedlove, & D. Crews (Eds.), *Behavioral Endocrinology*. Cambridge: MIT Press.

Sapolsky, R. M. (1992b). *Stress, the Aging Brain, and the Mechanisms of Neuron Death*. Cambridge, Massachusetts: MIT Press.

Selye H. Stress of Life (1976) General Adaptation Syndrome (GAS)

Srivasta and Singh 1981, Organizational stress index.

Vancouver, J., & Putka, D. J. (2000). Analyzing Goal-Striving Processes and a Test of the Generalizability of Perceptual Control Theory. *Organizational Behavior and Human Decision Processes*, 82(2), 334-362.

Weiss, J. (1971a). Effects of coping behavior with and without a feedback signal on stress pathology in rats. *J Comp Physiol Psychol*.(77), 22.

## Websites

[www.cdc.gov/noish/stresswk.html](http://www.cdc.gov/noish/stresswk.html)  
[www.safetyline.wa.gov.au/pagebin/disegen10007.html](http://www.safetyline.wa.gov.au/pagebin/disegen10007.html)  
<http://agency.osha.eu.int/>  
[www.nlm.nih.gov/hmd/emotions/stress.html](http://www.nlm.nih.gov/hmd/emotions/stress.html)  
[www.salvador.edu.ar/ua1-9pub01-4-04.htm](http://www.salvador.edu.ar/ua1-9pub01-4-04.htm)  
[www.lifepositive.com/stress.html](http://www.lifepositive.com/stress.html)

Gayle A. (et al) (1990, *Psychology At Work*, New York, Prentice Hall.

## Appendix 1: Questionnaire

Circle the number on the scale that represents the amount of the characteristic being rated. That is low numbers represent minimum amounts and high numbers represent maximum amounts. Thus, if you think there is very little of the characteristic associated with your job circle 1. If you think there's a little circle 2. If you think there is a lot of the characteristic circle 4 and so on. For each scale circle only one number. Please do all the scales.

1. The extent to which my job is challenging:
  - a. How much is there now?      1      2      3      4      5
  - b. How much should there be?      1      2      3      4      5
  
2. The feeling of personal accomplishment one gets from being in my job position:
  - a. How much is there now?      1      2      3      4      5
  - b. How much should there be?      1      2      3      4      5
  
3. The extent to which the pay associated with my job is appropriate:
  - a. How much is there now?      1      2      3      4      5
  - b. How much should there be?      1      2      3      4      5
  
4. The feeling of security one has in my job:
  - a. How much is there now?      1      2      3      4      5
  - b. How much should there be?      1      2      3      4      5
  
5. The opportunity one has to work closely with others and develop close friendships:
  - a. How much is there now?      1      2      3      4      5

- b. How much should there be?      1      2      3      4      5
6. The extent to which one is recognized for achievements in performing my job:
- a. How much is there now?      1      2      3      4      5
- b. How much should there be?      1      2      3      4      5
7. The extent to which my job gives me prestige and status within the organization:
- a. How much is there now?      1      2      3      4      5
- b. How much should there be?      1      2      3      4      5
8. The opportunity my job provides for developing a sense of responsibility:
- a. How much is there now?      1      2      3      4      5
- b. How much should there be?      1      2      3      4      5
9. The extent to which my job provides an appropriate set of fringe benefits:
- a. How much is there now?      1      2      3      4      5
- b. How much should there be?      1      2      3      4      5
10. The opportunity my job provides for being involved in making decisions:
- a. How much is there now?                      1      2      3      4      5
- b. How much should there be?                      1      2      3      4      5
11. The extent to which my job provides appropriate working conditions:
- a. How much is there now?                      1      2      3      4      5
- b. How much should there be?                      1      2      3      4      5
12. The opportunity for autonomy (that is independent thought and action) in my job:
- a. How much is there now?                      1      2      3      4      5
- b. How much should there be?                      1      2      3      4      5
13. Task Demands
- a. Do you lack power or influence in your job? 1 2 3 4 5
- b. Does your job provide task and skill variety? 1 2 3 4 5
14. Role Demand
- a. Are you certain about the exact requirements of the part you are expected to play as a member of your team.                      1      2      3      4  
5
- b. Do you feel unable to cope at work?      1      2      3      4      5
- c. Are your skills or abilities fully utilized? 1      2      3      4      5
- d. Does your concept of expected behavior contradicts the organizations concept of expected behavior?                      1      2      3      4  
5
- e. Do you face a situation in your job in which contradictory expectations create inconsistency?                      1      2      3      4      5

15. Interpersonal Demands
- a. Are you dissatisfied with your personal relationships at work?  
1 2 3 4 5
  - b. Are you embarrassed to ask for help at work?  
1 2 3 4 5
  - c. Are you often not appreciated and people let you down in your work place?  
1 2 3 4 5
  - d. Are your friendly gestures not reciprocated by colleagues who make things difficult for you at workplace.  
1 2 3 4  
5
16. Organizational Structure
- a. Do you have your say in decision making or in matter's that affect you or important to you?  
1 2 3 4 5
  - b. Do you have too many rules to follow, stringent policies to abide by and centralized decision making at your work place?  
1 2 3 4  
5
  - c. Are you under pressure to keep up with technological break through all the time?  
1 2 3 4 5
17. Organizational Leadership
- a. Is your work a source of worry for you?  
1 2 3 4  
5
  - b. Are you under constant fear and anxiety at work? Or do you have a tendency to talk quickly or hasten conversation?  
1 2  
3 4 5
  - c. Do you think that your superior impose tight controls and are ruthless and insensitive in getting the job done at any cost?  
1 2 3 4  
5
  - d. Do you feel insecure in your job?  
1 2 3 4 5
18. I've been concentrating my efforts on doing something about the situation I'm in.  
1 2 3 4 5
19. I've been getting emotional support from others.  
1 2 3 4 5
20. I've been taking action to try to make the situation better.  
1 2 3  
4 5
21. I've been looking for something good in what is happening.  
1 2 3 4 5
22. I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.  
1 2 3 4  
5

23. I've been accepting the reality of the fact that it has happened. 1 2 3 4  
5
24. I've been trying to find comfort in my religion or spiritual beliefs. 1 2 3 4  
5
25. I've been trying to get advice or help from other people about what to do. 1 2 3 4  
5
26. I've been thinking hard about what steps to take. 1 2 3 4  
5
27. I've been praying or meditating. 1 2 3 4  
5

### **Appendix 2: Firms In the Sample**

#### **Pharmaceutical companies**

<b>Korangi</b>	<b>Non Korangi Area</b>
• Efroz	Sami Pharma
• Nabi Qasim	Pharmevo
• Shaaf Nutropharma	Helix
• Unitech	Actimed
• Roche	KCI
• Bosch	Reckitt Benckiser
• Sanofi Aventis	Glaxo
	Merck
	Searle
	MSD

Table 4 b Companies based in Non Korangi area the correlation between Overall stress and Interpersonal demand 0.75, Organizational leadership 0.66 and Organizational structure 0.60 is relatively high, which indicates that these stressors contribute the most to overall stress.

#### **Table 4c Correlation Matrix Stressor, Job Satisfaction and Coping Mechanism Korangi & Non Korangi**