

## JOB STRESS AND WORK PERFORMANCE

### Remaining Healthy in the Encounter with Stress

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Over the last twenty years, the medical literature has increasingly warned that stress has an etiological influence on illness (1,2). Both single, severe stresses and multiple, moderate stresses have been implicated in the onset of both severe and mild symptoms. Lately, this literature has permeated the popular communications media with the message that one should avoid stress in order to remain healthy. We are currently witnessing a dramatic movement toward stress avoidance, sometimes involving broad social shifts (e.g., attempts to return to a simpler life of preindustrial days), other times involving more individual shifts (such as meditation and increased reliance upon alcohol and drugs). So unrealistically extreme have attempts at stress avoidance become that one recent magazine article advocated staying off the Los Angeles freeway following the occurrence of stressful events for fear that one will have become accident-prone.

If the best advice that health maintenance professionals can give is to avoid stress, they have truly failed. The thrust of human energy and ingenuity is toward ever-increasing industrialization and urbanization; and that means mushrooming levels of change, demanding readjustment of living patterns. You will recognize the last part of this statement as the standard definition of stress: An event is stressful if it constitutes a change requiring readjustment of the persons experiencing it (3). As technological advance occurs, the continual production of new procedures, machines, and knowledge increase the complexities and opportunities of human life. As urbanization increases, the complexities and opportunities of human life also increase. So inherently stressful are

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This paper, based on the doctoral dissertation of Doctor Kobasa, was presented by Doctor Maddi.



the changes constituting industrialization and urbanization, that to attempt to avoid them lest one become ill is to miss the promise of modernity. As if this failure to capitalize on opportunities were not enough, the attempt to avoid stress also renders the person and his society too vulnerable to the dangers of modernity. Such unwanted side-effects of industrialization and urbanization as pollution and crime must be dealt with, but they will not be cured by those persons who rush to avoid stress.

Is it possible to encounter (rather than avoid) stress and remain healthy? Surely everyone can recall hardy persons who withstand great stress without becoming ill. There is even an occasional person who has thrived on stress, becoming psychologically or physically healthier. Anecdotal observations of this sort provoked us to look more carefully at the basis for the generalization that stress leads to illness. We found that it is common for measures of stress and illness to show correlations of only .30, with standard deviations eight times those of the means. Consequently, there are bound to be many subjects who remain healthy despite severe stress experiences. That these hardy persons have not received much study is a serious flaw in the attempt to understand the effects of stress. We decided to study these hardy persons, hoping that they might constitute a model for the rest of us.

The next step was to theorize what might permit some persons to face stress without becoming ill. Three general factors seemed relevant: 1. constitution, 2. social support systems, and 3. personality. We decided to focus upon personality. In other words, "What personality dispositions decrease the debilitating effects of stress?" In hypothesizing answers to this question, we were aided most by the literature on coping (4), human development (5), and existential personality theory (6).

Our first hypothesis is that among persons experiencing considerable stress, those who have a sense of commitment to (rather than alienation from) the various aspects of their lives will remain relatively healthy. Committed persons possess the sense of purpose and active involvement that minimizes the threat of otherwise stressful events and provides a basis for continual grappling with problems and setbacks (6,7,8). By contrast, the alienated



persons consider the world rather worthless and find insufficient value in stressful events to justify coping with them (9,10).

Our second hypothesis is that among persons experiencing considerable stress, those who remain relatively healthy believe that they have control over their lives (rather than feeling externally controlled). Persons who feel in control of their lives experience less threat in stressful life events because they believe in their ability to transform situations cognitively, and they respond flexibly enough to be effective (11). By contrast, persons who believe they are externally controlled are overwhelmed by stress because they feel powerless to cope, to influence, to transform, and are nihilistic in the face of the presumed power arrayed against them (6).

Our third hypothesis is that among persons experiencing considerable stress, those who seek novelty and challenge (rather than familiarity and security) will remain relatively healthy. Those who seek novelty and challenge have well explored their environment, know where to turn for resources in coping with stress, and are well practiced at self-imposed readjustment. Consequently, they can enjoy stress, be less debilitated by it, and recover from it more quickly (8,9,12). In contrast, those who seek security and familiarity will dislike stressful life events intensely and will be relatively unable to cope with them.

## PROCEDURE

### Subjects and Groups

Selected for the study were the management personnel of a large public utility situated in a major metropolitan area. All members of this pool were mailed standardized questionnaire measures of stressful life events (3) and symptomatology (13). These are the measures that have provided much of the evidence that stress increases the likelihood of illness; each measure includes a wide range of stress events and symptoms, and requires the subject to indicate the frequency and month of their occurrence over the previous three years. The rate of questionnaire return was 80%.

From these questionnaire results, two groups were constructed. Both were comparably high in stress; but where one was also high



in illness, the other was low. Subjects, as well, were selected whose scores were well above or below the median of the distribution of stress and illness scores. Care was taken to insure that high stress scores preceded in time either high or low illness scores. The resulting High Stress/Low Illness and High Stress/High Illness groups were quite homogeneous and comparable on demographic characteristics that are thought to be conducive to successful coping (e.g., high income, good education, socially-valued employment, stable family situation).

### Personality and Stress-Perception Measures

One hundred randomly selected subjects from each group were mailed standardized questionnaire measures of personality dispositions, including the Alienation Test (14), the Internal vs. External Locus of Control Scale (15), and a number of scales from the Personality Research Form (16) and the California Life Goals Evaluation Schedules (17). In addition, subjects were asked to give global ratings of the stressfulness of various areas of their lives (e.g., work, home). The rate of return for properly completed questionnaires was such that 75 High Stress/Low Illness and 86 High Stress/High Illness subjects were available for further study.

### Data Analysis

In determining the personality and stress-perception differences between the High Stress/Low Illness and High Stress/ High Illness groups, reliance was placed on the discriminant function. This computation selects the best combination of variables at hand for explaining the differences between groups. In the computation, each variable appearing in the discriminant function is purified of the effects of the others and assigned a weight indicating its importance in explaining the group differences. Finally, an estimate is given of the amount of the total group difference accounted for by the discriminant function.

## RESULTS

### Descriptive Statistics for Entire Pool

Consistent with earlier work, the correlation we obtained between stress and illness in the entire pool of management personnel is



.24. The means and standard deviations of the stress and illness distributions are also comparable to those in other studies (399 and 162, resp., for stress; and 913 and 1155, resp, for illness).

#### Group Differences in Personality and Stress-Perception

Table 1. Variables which discriminate between the high stress/low illness and high stress/high illness groups

Variable	Standard Discriminant Coefficient
Alienation from Self	0.985
Vegetativeness	-0.990
Nihilism	0.316
Perception of Financial Stress	-0.336
Perception of Personal Stress	0.696
Perception of Interpersonal Stress	-0.476
Social Desirability	-0.236
Achievement	-0.452
Leadership	0.407
Interest in Novel Experiences	-0.274
Endurance	0.258

Table 1 shows the personality and stress-perception variables identified as important discriminators between the High Stress/Low Illness and High Stress/High Illness groups. There is support in these results for all three hypotheses stated earlier. Confirming the first hypothesis, the most potent discriminator shows that High Stress/High Illness subjects are more alienated from self than are High Stress/Low Illness subjects. Alienation involving work, interpersonal relations, social institutions, and family did not seem to make the same kind of difference. Confirming the second hypothesis are several discriminators: High Stress/Low Illness subjects are less vegetative and nihilistic than are High Stress/High Illness subjects, indicating their belief that one can control the events of one's existence. Confirming the third hypothesis, the High Stress/Low Illness subjects are more interested in novel experiences; at the same time, they are more oriented toward achievement and show more endurance than



do the High Stress/High Illness subjects. These variables signify the importance of perception of change as an opportunity and a challenge rather than a threat.

In response to stress-perception questions, High Stress/Low Illness subjects perceived less threat in personal, financial and interpersonal areas than did High Stress/High Illness subjects. It is important to recognize that these subjective perceptions constitute different data than the stress scores upon which subjects were initially assigned to groups. These latter stress scores represent objective or consensual indicators of the stressfulness of subject's lives. Thus, for the same objective levels of stress, subjects who do not become ill feel less threatened subjectively than subjects who do become ill. These findings are consistent with those more directly testing the hypotheses.

The only discriminator which seemingly does not fit shows that High Stress/Low Illness subjects are higher in the wish to appear socially desirable than are High Stress/High Illness subjects. This wish is often regarded as a sign of conventionality and passivity. But, as is common with business persons, both groups were extremely high on this variable. Extremely high scores probably indicate ambition and high standards more than conventionality per se. Thus, on second thought, this finding is not inconsistent with the rest.

The discriminant function identified accounts for 74% of the total variance of the differences between the groups, and as such, is highly significant (Wilks' lambda = .57;  $p < .001$ ).

## DISCUSSION

This study provides a basis for understanding how persons can willingly or unwillingly encounter great stress and remain healthy. One must be aware of and involved with oneself, believe that one can control and transform the events of one's experience, and perceive change as an opportunity and challenge rather than a threat. The longer one has this overall orientation, the greater will be his accumulated skills and resources for dealing with stress. When stress actually occurs to such a person, he or she will be energized and exhilarated rather than debilitated and worried.



However, additional study is needed before these results can be put into practice. As in many studies of the effects of stress, ours collected stress, illness, and personality data at approximately the same point in time. It is difficult, therefore, to make any definite causal inferences. All three variables might well be influencing each other. One needs to collect stress and personality data at "time one" and then see if their interaction will predict illness at "time two"; we are currently collecting data for such a prospective study. This study will also supplement questionnaire responses with interviews to cover both the present and past. Should the results of this prospective study confirm what we have reported here, there will be a solid empirical basis for putting the notions discussed here into practice.

Consider the implications for occupational medicine. With mounting economic, political, and consumer pressures, industries and businesses place ever-increasing amounts of stress upon employees at all levels of the organizational hierarchy. As a culture, we are increasingly unwilling to believe that stress at work is necessary. If there is much stress, then the business or industry is regarded as failing in its responsibility to employees. This cultural trend toward rest and relaxation as an ideal is supported by the communications media who regard stress as a cause of illness. The occupational physician is confronted more and more with angry and frightened employees who attempt to enlist his aid in the avoidance of stress. There is pressure on labor unions and employers to increase job protection and curb changes that impact on workers. At the same time, employees are becoming less involved in their work, putting their energies and talents into avocations. Alcohol and drug use are still increasing. All of these movements can be seen as avoidance of stress. What is so unrealistic is that there are also societal forces which are increasing stress on industries and businesses, and inevitably on their employees.

With the results of this study, the occupational physician is given another option in his treatment of employees. The physician does not have to participate in unrealistic attempts to avoid inevitable stresses. Rather, he can counsel the employees that stresses must not necessarily lead to discomfort and illness. The personality dispositions and perceptions of stress associated



with the hardy, highly stressed individual can be shared with other employees. This knowledge alone may help persons to be less frightened and threatened. It should also be possible to encourage workers to identify with these hardy individuals.

Other employees may be so preoccupied with security and their inability to cope with stress that exhortation alone will not be enough. In these cases, psychotherapy would seem indicated. But one must recommend with care the kind of therapy that is responsive to the problem. Practices that specialize in psychotherapy for stress management are springing up like weeds. Most of them conclude that stress leads to illness, and teach the patient various techniques of stress avoidance, from relaxation to meditation. Our findings, on the other hand, call for the kind of psychotherapy that has nothing to do with stress-avoidance. Instead, it seeks to transform the patient's outlook and actions such that he is:

- highly aware of and involved with his own internal thoughts and feelings;
- willing and able to influence and transform events of his experience through the decision-making process;
- believes change to be inevitable and an opportunity for growth.

This therapy assumes that life best led is a strenuous process, and that fulfillment of human capabilities is ultimately more satisfying than is rest, leisure, and easy security. We call it existential psychotherapy, and regard it as a good preparation for modern times.



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