Stress, Satisfaction and Health at Work: tuning for high performance

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Some managers verge upon apoplexy when they hear the word stress. It annoys them intensely. They feel that stress is a lame excuse used by poor performers who try to exonerate themselves from blame and to fix it instead upon their employers whom they perceive as heartless, calculative and oppressive. Stress, some managers believe, is a notion invented by the weak in an attempt to level the playing field in their favour. It is an unfair strategy, they argue, because it disguises personal moral failings behind an intellectual mask of spurious generalities about the organizational sources and effects of stress on health and safety.

Many employees, on the other hand, persist in the belief that stress at work is a very real, organizationally produced phenomenon that wreaks needless harm upon their mental and physical health and places them at risk for a variety of injuries.

Where does the truth lie? In this writer’s view, it is essential that the evidence be known and understood by both management and labour because a failure to do so stands in the way of progress toward a healthier, safer, more productive and more competitive economy. We need to move beyond blame to a new empirical position where evidence has the first and last word.

In my opinion the importance of the relationship between employee stress of certain kinds, health, safety, performance at work and organizational efficiency has been established beyond a reasonable doubt in scientific terms. There is, however, a reluctance to accept and act upon this evidence. I think that one of the main reasons for this is a failure on the part of scientists to specify what they mean by stress and what they have found out about it in terms that cannot be ignored or misunderstood.

In the first place, we have to narrow our field of inquiry and redefine our major area of concern. The kind of stress that has been implicated in serious harm to employee health is not simply cumulative worries, annoyances and concerns. Rather, it is a specific set of conditions that are created or produced by the way work is organized and designed. Some of these conditions can be modified to produce a high performance edge and it is these upon which we should focus our attention.
The scientific evidence on stress, health and performance has concentrated in recent years upon two paradigms: the Demand/Control Model (Karasek and Theorell, 1990) and the Effort/Reward Imbalance Model (Siegrist, 1996). The essence of these models is the empirically verified proposition that too much demand coupled with too little job control and too much effort coupled with too little reward are stressors complicit in the production of numerous types of illness and injury. These harms range from the common cold to cancer and include various types of injury such as repetitive strains and back problems. An important aspect of the research on the two models is that the amount of stress required to produce harmful outcomes is increasingly quantifiable and measurable.

Since the health outcomes attributed to High Effort/Low Reward conditions are very similar to those attributed to High Demand/Low Control conditions they are summarized below together. Increasingly, it seems that both pairs of conditions are likely to co-exist in the same workplaces although not all adverse outcomes are simultaneously observed, given differences in type of work and means of production.

**Health Effects of Adverse Working Conditions: Summary**

1. High Demand/Low Control conditions at the extreme (highest 25% Demand level, lowest 25% Control level) compared with High Demand/High Control and Low Demand/High Control conditions are associated with:
   - more than double the rate of heart and cardiovascular problems
   - significantly higher rates of anxiety, depression and demoralization
   - significantly higher levels of alcohol and prescription/over the counter drug use
   - significantly higher susceptibility to a wide range of infectious diseases

   (Gardell, 1982; Greenberg and Grunberg, 1995; Johnson et al., 1996; Karasek and Theorell, 1990; Matthews et al., 1987; Theorell et al., 1997)
2. High Effort/Low Reward conditions at the extreme (highest 33% Effort level, lowest 33% Reward level) compared with High Effort/High Reward conditions are associated with:
C more than triple the rate of cardiovascular problems
C significantly higher incidence of anxiety, depression and conflict-related problems
(Bosma et al., 1998; Siegrist, 1996)

3. High Demand/Low Control conditions and High Effort/Low Reward conditions are associated with:
C higher incidence of back pain (up to 3 times the rates found in High Demand/High Control and High Effort/High Reward conditions)
C higher incidence of Repetitive Strain Injuries (excess rates of up to 150% have been reported)
(Polanyi et al., 1997; Shannon et al., 1996; Shannon et al., 1997; Smith, 1997)

4. A combination of High Demand/Low Control and High Effort/Low Reward conditions are implicated, along with other more general workplace stressors in the precipitation of colorectal cancer. People experiencing such adverse conditions had over 5 times the rate of colorectal cancer in one recent well-conducted study.
(Courtney et al., 1993)

5. There is strong evidence to suggest that many of the adverse health conditions listed above are linked. The processes responsible for the link can be traced often to the functions of the psychoneuroimmunological (PNI) system. (Kiecolt-Glaser and Glaser, 1995). Mind-body connections can be found, for example, in the aetiology of infections, cardiovascular diseases, certain types of cancers, injuries and hard-to-diagnose pain. (Cohen et al., 1991; Courtney et al., 1993; Kiecolt-Glaser and Glaser, 1995; Smith, 1997; Steptoe et al., 1997; Theorell et al., 1997; Polanyi et al., 1997; Shannon et al., 1997)
Persuasive though this evidence is, the way in which it is presented can stand in the way of finding constructive solutions. We can say, quite correctly and appropriately, that the Ademand and effort” parts of the two models just sketched are often not highly modifiable because the nature of the work dictates its pace and the type of labour required to meet the demand. This leaves the Acontrol and reward" parts of the models that are, in theory at least, amenable to change through different types of management decisions.

Numerous studies indicate that when management chooses to find ways of increasing employee control and reward, benefits can be expected in regard to decreased rates of almost all adverse health outcomes of the kind we can measure over relatively short periods of time. These outcomes include reductions in injury rates, absenteeism due to infectious diseases, anxiety, depression and certain types of pain. (Elden, 1986; Gardell, 1982; Greenberg, 1986; Johnson and Johansson, 1991; Kaplan and Rankin, 1993; Macy and Izumi, 1993; Painter and Smith, 1986).

However, if the whole discourse about control and reward is allowed to remain in the area of Astress”, we may be missing an opportunity to confront the issue in a more constructive manner. Another approach to the control/reward issue is to redefine it as a matter of job satisfaction rather than a matter of job stress.

Recently, in a series of workplace surveys of employee health, we had the opportunity to redefine the way in which demand relates to control and effort relates to reward by constructing a AStress/Satisfaction Offset Score” in which markers of demand and effort were seen as Astressors” and markers of control and reward were seen as Asatisfiers”. We were then able to assign every employee who took part in the survey a score based on the relationship between these specific stressors and these specific satisfiers in their particular work life.

Once every employee has an ASSOS” it is an easy matter to group them according to the range of scores in which they fall.
The SSOS is constructed from answers to four simple questions in the employee health survey, yielding two subscores and a final score derived from them, as follows:

**SATISFACTION Subscore** (Range 0-2)

\[ \text{SATISFACTION Subscore} = \text{REWARD} + \text{INVOLVEMENT} \]

- **REWARD** [I feel I am well rewarded for the level of effort I put out for my job]
- **INVOLVEMENT** [I am satisfied with the amount of involvement I have in decisions that affect my work]

**STRESS Subscore** (Range 0-2)

\[ \text{STRESS Subscore} = \text{PRESSURE} + \text{FATIGUE/EFFORT} \]

- **PRESSURE** [work stress in last six months from too much time pressure]
- **FATIGUE/EFFORT** [work stress in last six months from mental fatigue]

**STRESS SATISFACTION OFFSET SCORE (SSOS)** (Range -2 to +2)

\[ \text{SSOS} = \text{SATISFACTION Subscore} - \text{STRESS Subscore} \]

**BUSINESS HEALTH CULTURE INDEX (BHCI)**

\[ \text{BHCI} = \text{AVERAGE SSOS for the workforce as a whole} \]

- When the score is **negative**, it means that stress outweighs satisfaction.
- When the score is **positive**, it means that satisfaction outweighs stress.
- When the score is **zero**, it means that stress and satisfaction cancel one another out.

At a corporate, as opposed to an individual employee level, the SSOS becomes a **Business Health Culture Index** (BHCI) which is simple the mean (average) SSOS for the workforce as a whole. The Index is a measure of the extent to which the Health Culture of an organization is working for or against its Business Objectives. Health Culture, for these purposes, simply means the relationship between certain stressors and satisfiers at work.

- If the BHCI is **negative**, it means that the health culture is characterized by more stress than satisfaction.
- A **Business-Negative Health Culture** is one that works against the achievement of business objectives, whether these objectives are product-related or service-related.
- If the BHCI is **positive**, it means that the health culture is characterized by more satisfaction than stress.
- A **Business-Positive Health Culture** is one that works for the achievement of business objectives.
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