特別講演

Organizational Health :
A New Paradigm for Occupational Stress Research at NIOSH

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This paper gives a historical perspective on the growth of job stress as an occupational health problem in the U.S., and describes traditional (worker focused) practices for dealing with job stress in the U.S. workplace. As a point of departure, the emerging concept of "organizational health" is discussed as a new framework for understanding and preventing job stress. In this new approach, organizational effectiveness and worker well-being are seen as inseparable, and both are influenced by macro-organizational characteristics such as organizational climate and culture. NIOSH research in support of this model is presented.

Key words : Job stress, Organizational climate, Occupational health, Healthy companies.

Stress in American Workplace

In 1966, long before "job stress" became a household expression, a special report entitled "Protecting the Health of Eighty Million Workers A National Goal for Occupational Health" was issued to the Surgeon General of the United States (U.S. Department of Health and Human Services, 1966). The report was prepared under the auspices of the National Advisory Environmental Health Committee to provide direction to Federal programs in occupational health. Among its many observations, the report noted that psychological stress was increasingly apparent in the workplace, presenting new and subtle threats to mental health," and possible risk of somatic disorders such as cardiovascular disease (p. 9). Techno-

logical change and the increasing psychological demands of the workplace were listed as contributing factors. The report concluded with a list of two dozen "urgent problems" requiring priority attention, including occupational mental health and contributing workplace factors. Thirty years later, this report has proven remarkably prophetic. Job stress has become a leading source of worker disability in the U.S. In 1990, job stress related disorders accounted for 13% of all worker disability cases handled by Northwestern National Life, a major underwriter of worker compensation claims in the U. S. (Northwestern National Life, 1991). A 1985 study by the National Council on Compensation Insurance found that one type of claim, involving psychological disability due to "gradual mental stress" at work, had grown to 11% of all

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occupational disease claims (National Council on Compensation Insurance, 1985).

Looking to the future, changes in employment practices and the composition of the workforce pose unknown, and possibly increased, risks of job stress. For example, the U. S. workforce is aging rapidly at a time when job security is decreasing. Corporate downsizing and restructuring continue unabated into the last half of the 1990s at a rate of over 30,000 jobs lost per month (Roy, 1995). In a recent survey by the Families and Work Institute (Galinsky, Bond and Friedman, 1993), nearly one-fifth of workers thought it likely they would lose their jobs in the forthcoming year. At the same time, the proportion of "contingent" workers, who are generally without job security, health benefits and other safety nets continues to climb.

Prevention Practices

A 1989 interview survey of medical, personnel, and employee assistance (EAP) directors of some of the largest companies in the U.S. revealed that these organizations are aware that stress is an important problem in the workforce (New York Business Group on Health, 1989). Respondents commonly reported that over 25% of the employees in their companies were experiencing stress-related problems. Further, they estimated that 16 days of work were lost yearly for each employee suffering from stress, anxiety or depression. Of particular interest, however, was the nature of the organizational response to these problems. Despite an abundance of etiologic studies linking job stress to the conditions of work, the directors tended to pursue worker-focused prevention strategies. Most of the directors (over

60%) indicated they referred employees with stress or other mental health problems to an EAP or health service, and nearly half of the directors provided individual counseling or a referral to a psychiatrist or mental health professional. The survey report provided no indication that work reorganization was considered as a possible strategy for resolving these problems.

These data suggest that the organizational response to stress and mental health problems in the U.S. is heavily slanted toward strategies which focus on employee treatment or change. This approach is deeply rooted in U.S. industry. Psychiatric services were established in the U. S. textile industry in 1915 (Burlingame, 1947). In later decades, industrial mental health counseling programs became increasingly common in the U.S. (Swanson and Murphy, 1991). These programs later gave way to EAPs which have expanded dramatically from the 1950s to the present. The most current estimate is that over 80% of U.S. firms with 750 or more employees provide access to an EAP (U.S. Department of Health and Human Services, 1992). Stress management training is one of the most common elements of these programs.

The failure of organizations to pursue work organization interventions in response to workplace stress may be due to several interrelated factors. First, it is unclear whether or not corporate managers recognize work organization as an important source of job stress. Second, the scientific and trade literature is almost devoid of demonstration studies illustrating organizational interventions to reduce stress in the workplace. The third limiting factor, which is of particular relevance to this report, involves the traditional view that healthy and productive work cannot peacefully coexist; that

is, the belief that reform of working conditions to protect health will incur a cost in terms of productivity or other measures of organizational effectiveness (see Cox and Cox, 1993 for a critical discussion of this view).

Concept of Organizational Health

The premise that worker well-being and the interests of the organization are in conflict has been challenged in recent years by the emerging concept of "organizational health." According to Jaffe (1995) and others (Cox and Cox, 1993; Cox and Howarth, 1990), organizational health expands the notion of organizational effectiveness beyond performance (profit and productivity) considerations to include the well-being of employees and the community at large. From an occupational safety and health perspective, a healthy organization is not only productive and profitable, but it also engenders low rates of stress, illness, and injury, and enhances worker well-being. The concept is not simply that these two dimensions - organizational performance and worker well-being - are compatible, but that they are mutually reinforcing.

Jaffe (1995) traces the concept of healthy companies to humanistic theories of management in the 1960s (e.g., Argyris, 1964; McGregor, 1960) which were supportive of human needs. Recently, other authors also have written about the concept of healthy companies, and have suggested ways to achieve this ideal state of organization functioning (Cooper and Williams, 1994; Rosen, 1989).

NIOSH Research On Healthy Work Organizations (HWOs)

Beyond initial ideas of what might constitute a HWO, there has been no empirical research to support the concept of HWOs or demonstrate the utility of the construct. Studies are needed to establish, in a statistical fashion,
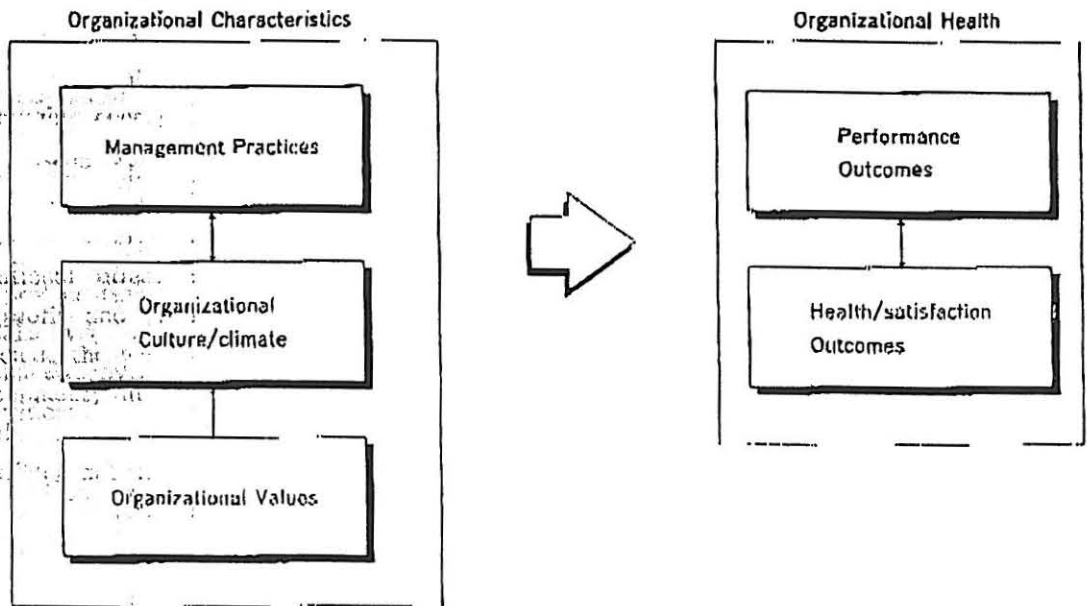

Figure 1. Model of organizational health research at NIOSH.

1) the relationship between the two dimensions of organizational health (organizational performance and worker well-being) and 2) the relationship between organizational characteristics and organizational health.

In 1991, NIOSH initiated a program of research to investigate healthy work organizations (Murphy, 1995; 1996). The objective was to move beyond traditional stressor-strain relationships and examine organizational health in its entirety. In this research, a healthy work organization is defined as one which maximizes the integration of worker goals for well-being and company objectives of profitability and productivity. The ultimate goal of this research is to establish a profile of organizational characteristics that determine healthy work organizations, thereby motivating organizational change interventions to protect worker health.

This new paradigm for research on work and stress is illustrated in Figure 1. Two features of the model shown in Figure 1 are noteworthy and novel to the stress field. First, as already discussed in some detail, the model specifies interrelationships among the well-being and performance dimensions of organizational health. Second, the model focuses on macro - organizational characteristics (e.g., organizational climate, values) instead of job-level factors (e.g., workload, autonomy, role stress, etc.) as risk factors for ill health and performance impairment.

NIOSH Case Study

At the outset, it was evident that research on healthy work organizations would require collaboration with corporate partners who would be willing to share relevant data with NIOSH. To this end, a research partnership was formed between NIOSH and a large international manufacturing company, headquartered in the U.S., to investigate relationships between organizational characteristics and overall organizational health. The company has nearly 20,000 employees deployed worldwide, and it manufactures a wide variety of products for the communications, laboratory sciences, environmental sciences, and consumer market segments. The company is well-known for its many alliances and joint ventures as a way of leveraging technology, as well as for its frequent managerial innovations, such as total quality management, high performance work systems, and diversity initiatives.

Under this research partnership, NIOSH provides expertise and technical assistance in the area of job stress assessment and intervention. The company, inturn, provides NIOSH researchers with access to three sets of data: 1) its biannual organizational climate survey data, 2) aggregate personnel and medical records data, and 3) aggregate productivity records for selected plant locations. The research methodology involves linking the climate survey data on organizational characteristics with indicators of employee health and company performance, including both self report measures and more objective medical and productivity records data.

Initial work in this project involved statistical analyses of company climate survey data for 1993. The database contained responses from 5,200 workers in 30 different locations. Occupations of workers in the database included production line workers (56%), administrative and technical (20%), and professionals and managers (24%). Sixty two percent were male and the majority were 25 45 years old (59%). Employment in the company is relatively sta-

ble, with 43% of the workers continuously employed by the company for more than 15 years.

The climate survey contained three major categories of questions relating to macro-organizational characteristics of work: management practices (e.g., strategic planning, employee performance rewards, career development opportunities), organizational culture/climate (e.g., innovation, diversity, intergroup cooperation), corporate values (e.g., commitment to quality, integrity, valuing the individual). Additionally, the survey was used to obtain data on perceived organizational performance (e.g., overall organizational effectiveness, work group performance, personal effectiveness) and on worker health or well-being (e.g., job satisfaction, stress, turnover intentions).

Multivariate, multiple regression analyses were performed to identify those organizational characteristics associated with both performance and health outcomes (Lim and Murphy, 1996). Three separate multivariate regressions were performed, one for each of the three categories of organizational characteristics (management practices, culture/climate, and values). Thus, each of the regression analyses were multivariate with respect to the performance and health outcomes, but not in terms of the organizational characteristics

The results of these regression analyses identified specific factors from each of the three categories of organizational characteristics which were linked to the performance and health indicators A summary of preliminary findings for two outcome measures indicative of organizational performance and health (perceived organizational effectiveness and perceived stress, respectively) are shown in Table

1. The management practices associated both with increased organizational effectiveness and with reduced stress were continuous improvement at work (i.e., TQM), career development, strategic planning, human resource planning, and fair pay/rewards. The culture/climate factors associated with these two organizational health indicators were innovation, cooperation, diversity, conflict resolution, and sense of belonging. Finally, the values associated with these two organizational health indicators were commitment to technology, employee growth/development, and valuing the individual. These findings provide provisional support for the organizational health model (Figure 1). Specifically, both organizational performance and worker well-being are shown to respond in a complementary fashion to a many of the macro-organizational factors examined.

Future Directions

Ultimately, this projects seeks to define a core set of macro-organizational factors that support both high levels of worker well-being and organizational performance; i.e., a profile of healthy work organizations. To this end, work is currently underway at NIOSH to extend and replicate the above mentioned findings using more objective outcome measures (e. g., medical, personnel, and productivity data), incorporating data from multiple plant sites of the corporate partner and from additional organizations. Collaborative and intervention studies are planned with the Finnish Institute of Occupational Health, the University of Manchester Institute of Science and Technology in Great Britain, and the University of Melbourne, Australia. The cross-cultural studies will provide indications of the generalizability of the

Table 1. Summary of multivariate multiple regression　(numbers in the table are standardized beta-estimates)

	Organizational Health	
	Organizational Effectiveness	Reduced Stress
Management Practices		
Communication	*	n.s.
Management leadership	n.s.	n.s.
Continuous improvement (TQM)	0.21	0.12
Career development	0.21	0.21
Employee recognition	*	n.s.
Strategic planning	0.15	0.07
Human resource planning	0.09	0.08
Fair pay and rewards	0.06	0.11
Organizational Climate		
Innovation	0.19	0.06
Cooperation	0.07	0.04
Diversity	0.05	0.12
Ownership of the company	*	n.s.
Conflict resolution	0.21	0.20
Group coordination	n.s.	n.s.
Sense of belonging	0.15	0.22
Organizational Values		
Leadership style	*	n.s.
Commitment to technology	0.62	0.15
Integrity	n.s.	*
Accountability	n.s.	n.s.
Employee growth/development	0.09	0.17
Valuing the individual worker	0.04	0.09

healthy work organization profile developed in the US and further evidence regarding the validity of the healthy work organization construct.

References

Argyris C. (1964) *Integrating the individual and the organization.* New York: Wiley.

Burlingame CC. (1947). Psychiatry in industry. *American Journal of Psychiatry, 103,* 549-553.

Cox T, Cox S. (1993). Psychosocial and organizational hazards at work: Control and monitoring (European occupational health series no. 5). Copenhagen, WHO Regional Office for Europe.

Cox T, Howarth I. (1990) Editorial comment. Organizational health, culture and helping. *Work and Stress, 4* (2), 107-110

Cooper CL, Williams S (Eds). (1994) *Creating healthy work organizations.* Chichester: Wiley.

Galinsky E, Bond JT, Friedman DE (1993).

The changing workforce: Highlights of the national study, No. 1. New York: Families and Work Institute.

Jaffe DT. (1995). The healthy company: Research paradigms for personal and organizational health. In S.L. Sauter and L.R. Murphy (Eds.), *Organizational risk factors for job stress*, (pp. 13-40). Washington, DC: American Psychological Association.

Lim SY, Murphy LR. (1996). A conceptual framework for promoting or creating a healthy work organization. Paper presented at the *International Congress on Occupational Health*, Stockholm, Sweden.

McGregor D. (1960). *The human side of enterprise*. New York: McGraw-Hill.

Murphy LR. (1995). Characteristics of Healthy Work Organizations. Symposium at the *American Psychological Association/ National Institute for Occupational Safety and Health Joint Conference*, Washington, D.C.

Murphy LR. (1996). Future Directions for Job Stress Research and Practice: Expanding the Focus from Worker Health to Organizational Health. Opening Keynote Speech at the *2nd National Occupational Stress Conference 1996*. Brisbane, Queensland, Australia.

National Council on Compensation Insurance. (1985). *Emotional stress in the workplace:*

New legal rights in the eighties. New York: Author.

Northwestern National Life. (1991). Employee burnout: America's newest epidemic. Minneapolis: Author.

New York Business Group on Health, Inc. (1989). Stress, anxiety and depression in the workplace. New York: Author.

Roy DJ. (1995, March 10). Layoffs down, but will continue despite surging economy, analysts say. *BNA Labor Daily (Article No. 20691113)*, Bureau of National Affairs.

Rosen R. (1991). *The healthy company*. Los Angeles: Jeremy P. Tarcher, Inc.

Swanson NG, Murphy LR. (1991). Mental health counseling in industry. In C.L. Cooper and I.T. Robertson (Eds.), *International review of industrial and organizational psychology (1991. Vol. 6)*. Chichester: John Wiley and Sons, Ltd.

U.S. Department of Health and Human Services. (1992). *1992 National survey of worksite health promotion activities*. Department of Health, Education and Welfare. Washington, DC: Author.

U.S. Department of Health and Human Services. (1966). *Protecting the health of eighty million Americans: A national goal for occupational health*. U.S. Department of Health, Education and Welfare. Washington, DC: Author.