15

Diagnosing a Healthy Organization: A Proactive Approach to Stress in the Workplace

Sue Cartwright, Cary L. Cooper, and Lawrence R. Murphy

Organizational health can be measured in a variety of ways other than by an analysis of the profit and loss account. Profitability is a clear indicator of the success and financial health of an organization at a given point of time. However, it is not necessarily a good predictor of future performance, unless account is taken of the ability of the organization and its workforce to continue to sustain and possibly increase that level of performance over time. An automobile may be running perfectly well one day, despite a neglectful owner, but it is invariably only a matter of time before a costly breakdown occurs. Similarly, the performance and financial health of an organization is dependent upon the physical and psychological health of its members.

There are a range of indices that are indicative of organizational ill health, other than the more obvious data such as sickness absenteeism, high labor turnover, and low productivity. These indices include high insurance and health care costs, poor accident and safety records, low levels of organizational commitment and job satisfaction, and generally deteriorating industrial relations.

As the human and financial costs of occupational stress to business and industry have become increasingly well documented (Elkin & Rosch, 1990), a growing number of organizations have introduced initiatives designed to reduce stress and improve employee health in the workplace. DeFrank and Cooper (1987) suggest that stress intervention in the workplace can focus on the individual, the organization, or the individual–organizational interface. Interventions that focus on the individual are concerned with extending the physical and psychological resources of employees to enable them to deal more effectively with stress. Health and stress education and skills training in the area of time management or assertive behavior are examples of such interventions. In contrast, organizationally focused interventions are concerned with reducing workplace stress by addressing factors that operate at the macro level. Such interventions might include changing aspects of the organizational structure, reviewing selection and training procedures, or developing more flexible and "employee-friendly" systems and personnel policies that more closely meets the needs and demands of the workforce.

Exhibit 1. Stress Management Interventions and Outcomes

Interventions	Outcomes
Focus on individual	Focus on individual
Relaxation techniques	Mood states (e.g., depression, anxiety)
Cognitive coping strategies	Psychosomatic complaints
Biofeedback	Subjectively experienced stress
Meditation	Physiological parameters (e.g., blood pressure, catecholamines, muscle tension)
Exercise	Sleep disturbances
Employee Assistance Programs (EAP)	Life satisfaction
Time management	Focus on individual–organizational interface
Focus on individual–organizational interface	Job stress
Relationships at work	Job satisfaction
Person–environment fit	Burnout
Role issues	Productivity and performance
Participation and autonomy	Absenteeism
Focus on organization	Turnover
Organizational structure	Health care utilization and claims
Selection and placement	Focus on organization
Training	Productivity
Physical and environmental characteristics of job	Turnover
	Absenteeism
Health concerns and resources	Health care claims
Job rotation	Recruitment/retention success

From DeFrank and Cooper (1987). Reprinted with permission.

Finally, there are interventions that operate at a more local, work group level, focusing on the individual–organizational interface. These are likely to address issues relating to work relationships and roles, person–environment fit, participation, and autonomy (see Exhibit 1). Ivancevich and Matteson (1988) proposed three points of possible organizational intervention: (a) changing the stress potential of a situation by reducing the intensity and number of stressors; (b) helping individuals modify their appraisal of a stressful situation and the threat it presents; and (c) helping individuals cope more effectively with the stress response. Murphy (1988) also emphasized three levels of intervention: (a) primary (e.g., stressor reduction), (b) secondary (e.g., stress management), and (c) tertiary (e.g., employee assistance programs [EAPs]).

Primary level interventions (stressor reduction) can be considered as being essentially concerned with modifying environmental stressors by direct action to eliminate or reduce their negative impact on the individual. In contrast, secondary and tertiary level interventions focus on managing distress and dealing with the outcomes or consequences of the stress process, and to a lesser extent, helping the individual modify the meaning of the stressor(s).

This chapter will start to highlight the current initiatives in the workplace, then explore the effectiveness of stress management and EAPs, and finally develop the case for a "front-end" approach by encouraging diagnosis and organizational interventions of structural problems.

Current Initiatives in the Workplace

Most workplace initiatives operate at the secondary or tertiary levels. Typically, they involve the provision of on-site fitness facilities, smoking cessation programs, dietary control, relaxation and exercise classes, health screening, alcohol and stress education, or psychological counseling, or some combination of these, packaged as a multimodular program available to employees and possibly, their partners. In a recent survey of some 3,000 worksites, the U.S. Department of Health and Human Services found that more than 60% of worksites with 750 or more employees now offer some form of stress management or health promotion activity. It is estimated (Feldman, 1991) that more than 75% of all Fortune 500 companies and about 12,000 smaller companies currently operate EAPs.

Initiatives, such as EAPs, by definition have tended to be "employee"- rather than "organization"-directed strategies, whereby the focus is directed at changing the behaviors of individuals and improving their lifestyles or stress management skills. Earlier definitions within the literature conceptualized stress as being an external stimulus, a physiological response, or an environmental condition. Later definitions (Cooper, Cooper, & Eaker, 1988; Edwards & Cooper, 1990) have emphasized the active role played by the individual in the stress process and suggested that stress is best understood as resulting from the interaction or "lack of fit" between the individual and his or her environment. However, the primary aim of most workplace intervention strategies is to improve the adaptability of the individual to the existing work environment by increasing physical and psychological resilience to stress. Inherent in such an approach is a recognition that the working environment is stressful but that the onus is on the individual to adapt and extend his or her coping skills to meet the given demands of that environment. Consequently, this strategy is often described as the "band-aid," or inoculation approach.

In contrast, there appears to be markedly less organizational concern with adapting the environment to "fit" the individual. One suggested reason (Ivancevich, Matteson, Freedman, & Phillips, 1990) is that the "interventionists"—the counselors, physicians and clinicians—are more comfortable with changing individuals than changing organizations. Furthermore, secondary and tertiary level interventions present a high profile means by which organizations can "be seen to be doing something about stress and taking reasonable precautions to safeguard employee health without unduly disrupting business activities."

The Effectiveness of Stress Management and Employee Assistance Programs

There have been some dramatic reports attesting to the cost benefits of EAPs and health promotion activities. Figures typically show savings-to-investment ratios of anywhere from 3:1 to 15:1. Such reports have not been without criticism. Many studies are considered to be methodologically weak in that they

lack control groups, fail to use objective multiple measures, and are of cross-sectional rather than longitudinal design. Many programs are multimodal in their approach; therefore, it is often difficult to isolate the effectiveness of individual component modules. Furthermore, increasingly, schemes are evaluated by the managed care companies responsible for their implementation, who may even be under contract to deliver a preset dollar saving (Smith & Mahoney, 1989).

However, it has been well documented that the New York Telephone Company's wellness program designed to improve cardiovascular fitness saved the organization $2.7 million in absenteeism and treatment costs in one year alone. General Motors Corporation report a 40% decrease in lost time and a 60% decrease in accident and sickness benefits as a result of their program. Evidence from Control Data Corporation's Staywell Program shows an increase in productivity and an impressive reduction in health care costs and absenteeism among employees who quit smoking, underwent exercise training, and enrolled in the cardiovascular fitness programs (Cooper, Cooper, & Eaker, 1988).

Counseling programs, such as those introduced by Kennecott in the United States (Cooper, Cooper, & Eaker, 1988) and the U.K. Post Office (Cooper & Sadri, 1991) both resulted in a reduction in absenteeism of approximately 60% in one year. The Post Office study involved pre- and postcounseling measures of employee mental health, job satisfaction, self-esteem, organizational commitment, and health behaviors, and it included control groups. Counseling was found to result in a significant improvement in the mental health and self-esteem of the participating employees. Neither job satisfaction nor organizational commitment, however, showed significant changes as a result of counseling.

Evidence as to the success of secondary interventions or stress management training is generally confusing and imprecise (Elkin & Rosch, 1990), which possibly reflects the idiosyncratic nature of the form and content of this kind of training. Programs differ in content and are often embedded in broader health promotion programs. Recent studies that have evaluated the outcomes of stress management training have found a modest improvement in self-reported symptoms and psychophysiological indices of strain (e.g., Reynolds, Taylor, & Shapiro, 1993), but little or no change in job satisfaction, work stress, or blood pressure. Newman and Beehr (1979) reviewed 24 employee-directed stress management programs that involved teaching relaxation or other coping skills, of which only 3 produced credible positive findings. Similarly, Murphy (1984) assessed 13 empirically based studies that included muscle relaxation, cognitive restructuring, meditation, and diaphragmatic breathing and concluded that although such techniques can be effective, "too few studies have been conducted to determine the relative merits of select techniques and compute cost–benefit ratios." Overall, it would seem that stress management programs may have a positive effect (Ivancevich et al., 1990), but if employees return to an unchanged work environment and its intrinsic stressors, those beneficial effects are likely to be eroded. Assessing the cost and long-term benefits of stress management programs remains problematic, particularly

when, as has been suggested (Sutherland & Cooper, 1990), account is taken of the characteristics and health status of those who voluntarily attend such programs.

Research findings which have examined the impact of lifestyle and health promotion programs also suggest that any benefits may not necessarily be sustained. Lifestyle and health habits appear to have a strong direct effect on strain outcomes in reducing anxiety, depression, and psychosomatic distress but do not necessarily moderate the stressor–strain linkage. Ivancevich and Matteson (1988) suggest that after a short time, 70% of individuals fail to maintain a long-term commitment to exercise habits and are likely to revert to their previous lifestyle. They also highlight the possibility of a placebo effect, which may be inherent in such programs.

The Front-End Approach: Dealing With the Sources of Stress

It has been argued that the simplistic philosophy of "one size fits all" (Elkin & Rosch, 1990) implicit in current secondary and tertiary interventions may be appropriate for smoking cessation programs, but it is less appropriate for stress reduction. Stress may have common manifestations and symptomatology (i.e., raised blood pressure, irritability, insomnia, depressed mood, etc.), but the potential sources of workplace stress are many and various and are not necessarily easy for the individual to identify and deal with effectively. Cardiovascular fitness programs may be successful in reducing the harmful effects of stress on the high-pressured executive, but such programs will not eliminate the stressor itself, which may be overpromotion or a poor relationship with the executive's boss. Identifying and recognizing the problem and taking steps to tackle it, perhaps by negotiation (i.e., a front-end approach) might arguably arrest the whole stress process.

Self-awareness is recognized as a key component in stress management. The completion of some form of stress diary or self-report diagnostic measure is often helpful to the individual (Cooper, Cooper, & Eaker, 1988) in increasing awareness and identifying individual stressor patterns.

Treatment may, therefore, often be easier than a cure, but it may be only an effective short-term strategy, as perhaps will be demonstrated by longer term cost–benefit analysis of secondary and tertiary interventions. In focusing on the outcome or "back end" of the stress process (i.e., poor mental and physical health, maladaptive coping strategies, etc.) and taking remedial action to redress that situation, the approach is essentially reactive and recuperative rather than proactive and preventative.

Awareness activities and skills training programs designed to improve relaxation techniques, cognitive coping skills, and work/lifestyle modification skills (e.g., time management courses or assertiveness training) have an important part to play in extending the individual's physical and psychological resources. Their role, however, is essentially one of "damage limitation," often addressing the *consequences* rather than the *sources* of stress that may be inherent in the organization's structure or culture. Indeed, individuals are

likely to perceive themselves as lacking the "resource or positional power" to change most of these stressors; they are perceived as simply beyond their control.

A number of general recommendations for reducing job stress have been put forth by the National Institute for Occupational Safety and Health (NIOSH) in their *National Strategy for the Prevention of Work-Related Psychological Disorders* (Sauter, Murphy, & Hurrell, 1990). A few of these recommendations are listed here:

> *Workload and work pace.* Demands (both physical and mental) should be commensurate with the capabilities and resources of workers, avoiding underload as well as overload. Provisions should be made to allow recovery from demanding tasks or for increased control by workers over characteristics such as work pace of demanding tasks.
>
> *Work schedule.* Work schedules should be compatible with demands and responsibilities outside the job. Recent trends toward flextime, a compressed work week, and job sharing are examples of positive steps in this direction. When schedules involve rotating shifts, the rate of rotation should be stable and predictable.
>
> *Job future.* Ambiguity should be avoided in opportunities for promotion and career or skill development and in matters pertaining to job security. Employees should be clearly informed of imminent organizational developments that may affect their employment.
>
> *Social environment.* Jobs should provide opportunities for personal interaction, both for purposes of emotional support and for actual help as needed in accomplishing assigned tasks.
>
> *Job content.* Job tasks should be designed to have meaning and provide stimulation and an opportunity to use skills. Job rotation or increasing the scope (enlargement/enrichment) of work activities are ways to improve narrow, fragmented work activities that fail to meet these criteria.

Elkin and Rosch (1990) also summarize a useful range of possible organization-directed strategies to reduce stress:

- Redesign the task.
- Redesign the work environment.
- Establish flexible work schedules.
- Encourage participative management.
- Include the employee in career development.
- Analyze work roles and establish goals.
- Provide social support and feedback.
- Build cohesive teams.
- Establish fair employment policies.
- Share the rewards.

Many of these strategies are directed at increasing employee participation. Indirectly, they are often a vehicle for culture change moving the organization

toward a more open and "employee-empowered" culture. Previous reviews of the behavioral science literature have demonstrated that employee participation has a positive impact upon productivity and quality control (Guzzo, Jette, & Katzell, 1985). Quality Circle (QC) programs, which, it has been suggested, represent the ultimate form of employee involvement, have been shown to favorably impact upon productivity (Barrick & Alexander, 1987) and employee attitudes (Rafael, 1985).

In a study comparing the attitudes of QC members ($n = 455$) and non-QC members ($n = 305$), it was found that QC membership increased employee perceptions of the influence they had over their jobs, and overall job satisfaction (Rafael, 1985). The link between locus of control (Rotter, 1966) and vulnerability to stress is well recognized as a mediator of the stress response. Stress is commonly experienced by individuals as a feeling of powerlessness and of being out of control. Research studies have suggested that perceived control over a situation is an advantage in managing environmental stress agents (Sauter, Hurrell, & Cooper, 1989). However, the effects of strategies such as QC in improving psychological well-being and reducing employee anxiety and stress have been little investigated.

Similarly, different types of organizational culture nurture particular values, attitudes, and styles of work organization to create psychologically different work environments and forms of psychological contract between employer and employee. Although culture change is a potentially stressful event, certain types of culture are generally experienced by employees as more satisfying than others (Cartwright & Cooper, 1989, 1992). In a recent study of more than 600 Norwegian managers and employees in the aluminum industry, it was found that individual perception of the culture type of the organization was a strong predictor of organizational commitment and job satisfaction. Those employees who perceived the culture to be of a Task Achievement type (Harrison, 1972) reported significantly higher levels of organizational commitment and job satisfaction than those employees who perceived the culture as being fragmented or ambiguous or of a different type (Rasmussen, 1992).

Although the relationship between commitment and job performance is generally weak (Matthieu & Zajac, 1990), attitudinal commitment has been found to be predictive of employee turnover (Angle & Perry, 1981). Similarly, evidence reported by Chadwick-Jones, Nicholson, and Brown (1982; as cited in Zaccaro, Craig, & Quinn, 1991) concerning the direct relationship between job satisfaction and performance, absenteeism, and turnover is mixed because decisions to leave organizations are often determined more by labor market conditions than dissatisfaction alone. However, stress studies that have included job satisfaction as an outcome measure (Cooper & Roden, 1985) have found that employees with low job satisfaction also record poorer levels of mental health. However, the stressors predicting these outcomes are often different.

One might argue that the truly "healthy" organization, which has been successful in creating and maintaining a healthy and relatively stress-free environment, will be an organization in which secondary (stress management) and tertiary (EAP) interventions are unnecessary. Such an organization will

have effectively targeted its resources at reducing or eliminating stressors before their longer term consequences on employee and organizational health impact the balance sheet.

However, once again, one size does *not* fit all. Not all of the stress that impacts the workplace is necessarily or exclusively caused by the work environment. As evidenced by the U.K. Post Office study, which evaluated the impact of stress counseling at work (Cooper & Sadri, 1991), the largest cluster of problems presented by employees fell into the broad category of mental and stress issues and formed 46% of the caseload; the second most significant cluster concerned "relationship" problems. Relationship problems accounted for 24% of the caseload, the majority of which focused on marital difficulties. A number of other non-work-related problems were presented, including bereavement, assault, and physical illness or disability.

This suggests that primary interventions cannot totally displace the need for secondary and tertiary interventions such as counseling, which address the problems associated with stressful life events, but rather should be complementary. However, primary or organizational level (stressor reduction) strategies appear to be preferred less than other levels of intervention. Although organizations have recognized the benefits of providing health screening to employees, they have been less concerned about or slower to recognize the potential diagnostic benefits of conducting regular "stress audits" to ascertain the current state of health in their organization as a whole (and its constituent parts) through occupational or organizational stress screening.

The Stress Audit: A Diagnostic Approach

As has been suggested (Elkin & Rosch, 1990), there are a variety of organization-directed strategies to prevent or limit stress, which generally fall in the area of organizational development (OD). Implementation is often expensive and potentially disruptive, and it may result in major restructuring. Few organizations would be prepared to commit themselves to extensive OD programs without justification for their necessity or else a baseline measure by which to evaluate their effectiveness, or both. In the same way that different stressors are responsible for different outcomes (Cooper, Rout, & Faragher, 1989), the potential sources of stress have been shown to vary among different occupational groups. For example, money handling and the risk of personal assault was found to be a major occupational stressor among bus drivers in the U.K. transport industry (Duffy & McGoldrick, 1990), whereas the major source of stress for U.K. income tax officers was autocratic management style and lack of consultation (Cooper & Roden, 1985). Furthermore, differences have been found between institutions and organizations in the same industry or business sector (Cooper & Mitchell, 1990) and between different subcultures and status groups within the same organization (Cooper & Bramwell, 1992). Consequently, the type of action required by an organization to reduce or eliminate workplace stressors will vary according to the kinds of stressors operating, the level of coping skills of those involved, and the culture of the

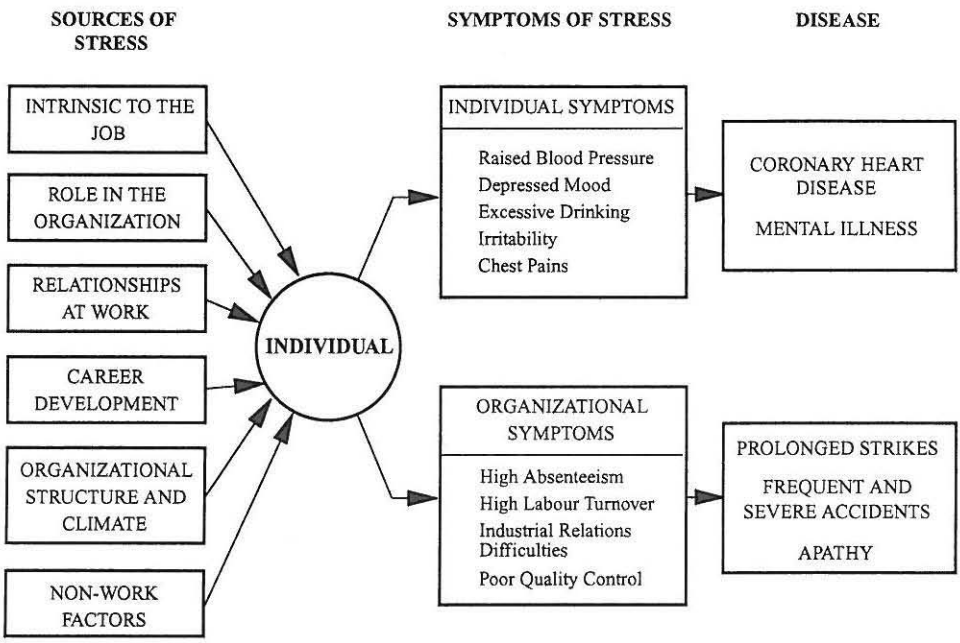

Figure 1. Stress: a research model. From Cooper and Marshall (1978). Reprinted with permission.

organization. In the examples just given, stress reduction might suggest a possible ergonomic solution in the case of bus drivers, whereas a change in management style that leads to increased employee participation is more likely to reduce the stress experienced by income tax officers.

Tailoring action to suit the assessed needs of the organization is likely to be more effective than any "broad brush" approach. As Levering (1988) points out, "A great workplace cannot be equated with the presence or absence of a particular set of policies and practices." In order to direct its resources effectively in reducing stress in the workplace, an organization first needs answers to the following questions:

1. What is the existing level of stress within the organization? Are job satisfaction and physical and psychological health better in some areas than others? How does the organization compare with other occupational groups or populations? In other words, "Is there a problem?"
2. If so, can the problem and what is causing it be determined? What are the stressors? Are they department- or site-specific or organization-wide?

There are a number of occupational stress models within the literature (Cooper & Payne, 1988); later models (Bruckman & Peters, 1987) have tended to focus on merger stress but have general applications. The Cooper-Marshall (1978) model (see Figure 1) conceptualizes the sources of occupational stress as falling within six broad categories: (a) factors intrinsic to the job; (b) role

in the organization; (c) relationships with others; (d) career development; (e) organizational structure, climate, and culture; and (f) home–work interface.

Factors Intrinsic to the Job

There are a variety of factors intrinsic to the job that are potentially stressful and have been linked to poor mental health (Cooper & Smith, 1985; Kelly & Cooper, 1981). These include poor physical working conditions, shift work, long hours, travel, risk and danger, new technology, and work overload or underload (of both a qualitative and quantitative nature).

The quality of the physical working environment is recognized as an important factor in employee health. In 1983, the World Health Organization defined the concept of the "sick building syndrome." Sick building syndrome is characterized by a range of physiological symptoms, including sensory irritation, headache, nausea, and dizziness and fatigue, which grow worse over the course of a day and disappear after the workers leave the building. Research has found the concentration of macromolecular organic dust, floor covering, number of workplaces in an office, age of the building, type of ventilation, and other indoor climatic factors to be associated with the occurrence of the syndrome (Skov, Valbjórn, & Pedersen, 1990). However, work-related mucosal irritation has been found to be associated with psychosocial and job-related factors such as work overload and dissatisfaction with one's superior (Skov, Valbjórn, & Pedersen, 1989). The same study also found that office workers who considered the pace of work at their workplace too fast and believed that they had little influence on their work activities were significantly more likely to report general symptoms.

Eliminating or reducing stressors relating to factors intrinsic to the job may involve ergonomic solutions and have implications for task or workplace redesign. Problems of work overload or underload may indicate a need to recruit, skills deficiencies, underutilization, inappropriate selection decisions, or delegation problems.

Role in the Organization

Karasek (1979) postulated that the amount of work does not seem to be as critical to worker health as the interaction of workload with the amount of control or discretion the worker has over the work and related work processes. Karasek and colleagues (Karasek et al., 1988) combined a database containing information on worker self-reports of job conditions with national health databases to examine the relationship between workload, work pace, and degree of worker control (referred to as "decision latitude"). Their findings indicated that workers in jobs with higher psychological workload, coupled with lower decision latitude, had increased risk of coronary heart disease, had higher blood pressure, and smoked more than workers in jobs without these characteristics. Indeed, the concept that worker control or discretion (a role-related

factor) over working conditions is integral to health has become almost ubiquitous in the occupational stress area.

Three other critical factors—role ambiguity, role conflict, and the degree of responsibility for others—are also major potential sources of stress. In a study of U.S. dentists (Cooper, Mallinger, & Kahn, 1978), for example, a high level of role conflict was found to be a major predictor of abnormally high blood pressure. Essentially, this conflict stemmed from the discrepancy between the idealized "caring/healing" role and the actuality of being "an inflictor of pain." Eliminating or reducing role-related stress requires clear role definition and role negotiation.

Relationships at Work

Relationships with others at work (i.e., superiors, colleagues, and subordinates) are potentially stressful. Most studies have concluded that mistrust of coworkers is associated with high role ambiguity, poor communication, low job satisfaction, and diminished psychological well-being (Cooper & Payne, 1988).

Improving personal relationships in the workplace is a complex process and may have implications for a range of interpersonal skills training. Oldham (1988) investigated the impact of physical layout on communication and employee satisfaction among clerical staff. It was found that employees were more satisfied when working in traditional partitioned offices than open plan. Partitioned offices were recognized as providing greater possibilities for focusing on the task and for communicating in private.

Career Development

Job insecurity and career development have increasingly become a source of stress during the merger and acquisition boom of the 1980s, and they seem likely to continue as such throughout the recessionary 1990s (Cartwright & Cooper, 1992). Ivancevich and Matteson (1980) have demonstrated that "career stress" is associated with multiple negative outcomes (e.g., job dissatisfaction, poor work performance).

The introduction of regular appraisals, the provision of retraining opportunities, career sabbaticals, and counseling are ways in which career stress may be reduced. Because redundancy or job loss appears likely to remain a feature of organizational life in the near future, the provision of outplacement facilities becomes increasingly important.

Organizational Structure and Climate

Sources of stress that may be described as relating to the organizational structure and climate are frequently the outcome of organizational culture and management style. They include factors such as lack of participation and effective consultation, poor communication, and office politics. As organizations have increasingly found themselves involved in mergers, acquisitions,

and joint ventures or have felt the pressure to conduct downsizing (what is now popularly called "rightsizing") activities, a result has been major restructuring. This frequently results in turn in culture change or "collisions" that create ambiguous working environments and individual cultural incongruence, which are likely to be experienced as stressful.

In a recent study comparing employee stress in four autonomous divisions of the same parent company, it was found that employee differences in physical and mental health were linked to the culture and practices of the operating division (Cartwright, Cooper, & Barron, 1993). Furthermore, such factors were associated also with motor fleet accident rates.

Nonwork Factors

As shown in Figure 1, individual factors can alter or modify the way workers exposed to the stressors perceive or react to the work environment. These "moderator" variables have received increased research attention in recent years, and following are descriptions of the most common of these (Hurrell & Murphy, 1992).

The most prominent individual factor related to stress has been the coronary-prone *Type A behavior* pattern, characterized by intense striving for achievement, competitiveness, urgency, excessive drive, and overcommitment to one's vocation or profession. Many investigators have reported the Type A pattern to be independently associated with coronary artery disease (Cooper & Payne, 1991).

Social support that an individual receives from work and nonwork sources has powerful influences on the stressor–health relationship. One of the earliest studies in this area reported that social support served to buffer or protect the worker from the ill effects of stress (LaRocco, House, & French, 1980), although later studies have provided mixed support for the "buffering" hypothesis. In a similar way, certain *coping styles* have been found to be related to better health, especially those referred to as problem-focused coping, compared with emotion-focused coping (Folkman & Lazarus, 1980).

Finally, it is clear that workers do not leave their family and personal problems behind when they go to work, nor do they forget job problems upon returning home. Nearly all models of job stress acknowledge the importance of *nonwork factors*, and their interaction with work factors, in affecting health outcomes.

Managing the interface between work and home is particularly problematic, especially for dual career couples (Cooper & Lewis, 1993) and those who may be experiencing financial difficulties or life crisis. Although the organization arguably can do little to alleviate the stress caused by domestic circumstances such as a bereavement in the family other than by providing counseling services, it can help reduce the pressure on, for example, dual-career couples and single parents by introducing more flexible working arrangements and adopting family-friendly employment policies.

Stress Audit Instruments

Instruments such as the Occupational Stress Indicator (OSI) devised by Cooper, Sloan, and Williams (1988), have been increasingly used as a diagnostic instrument in occupational stress research in Europe. The OSI is based upon the Cooper-Marshall (1978) model and consists of six scales (each of which provides a number of subscale scores). In addition to identifying sources of pressure at work, it incorporates personality measures of Type A behavior, perceived locus of control, and employee coping strategies. The OSI also measures job satisfaction and self-reported mental and physical health. The instrument has established reliability and both predictive and criterion-oriented validity (Cooper & Bramwell, 1992; Cooper, Sloan, & Williams, 1988; Rees & Cooper, 1991; Robertson & Cooper, 1990).

The OSI and other similar instruments provide an effective means whereby organizations can regularly audit and monitor organizational health and be proactive in stress reduction. Such audits can be used to provide a baseline measure whereby stress reduction techniques can be evaluated. The use of audits could be extended to ascertain employee attitudes and perceived needs for secondary (stress management) and tertiary (EAPs) interventions and to provide valuable information regarding the likely rates of use of such programs before any expenditure is incurred.

Many other questionnaires have been developed to assess job stress–health relationships, far too many to be reviewed in this short chapter. However, a few other assessment instruments will be briefly described. For example, the Occupational Stress Inventory (Osipow & Spokane, 1983) measures a wide range of job stressors, employee resources for coping with stress, and mental and physical strains. The various subscales have demonstrated good test–retest reliability, and occupational norms are available. Plotting standardized scores on each subscale produces a "stress profile" for workers.

The Generic Job Stress Questionnaire (Hurrell & McLaney, 1988) was developed by NIOSH. This instrument assesses many different job stressors as well as stress reactions or strains. Most of the scales were adapted from prior scales with known reliability and validity. This instrument was designed to be modular; organizations can select individual scales, or the entire instrument can be used. Normative data on this questionnaire are currently being gathered.

Another commonly used instrument, the Work Environment Scale (WES; Moos, 1981) was not developed to assess job stress; rather, it was designed to assess the general work climate. It contains 90 items that comprise 10 subscales, and it uses a True–False response format. The subscales have demonstrated good reliability and validity and have been used often by researchers over the past 15 years. Also, occupation norms are available for this instrument.

Organizational Interventions

Following stress assessment and problem identification, interventions need to be designed, installed, and evaluated. The intervention itself needs to be com-

prehensive and contain an element of stressor reduction through organizational change, in addition to any individual-oriented elements. Stressor reduction interventions require a knowledge of the dynamics of change processes in organizations, so that potentially undesirable outcomes can be minimized. Stressor-targeted interventions must initially deal with the problem that organizations, like individuals, tend to resist change, and this inertia is reinforced by the belief among many managers that the work environment does not contribute to employee distress. Despite these difficulties, stressor reduction interventions remain the preferred approaches to employee stress problems because of the focus on the source of the problem(s), not the symptoms.

Regardless of the specific intervention strategy selected, the involvement and participation of workers in the process is critical to its success. An example from the research literature illustrates this point. Lawler and Hackman (1969) introduced identical incentive pay plans in groups of workers and discovered that the effects of the pay plans on employee attendance varied as a function of *how* the plans were introduced to workers. The three work groups that participated in the development of the pay plans showed increased attendance in the 16 weeks after the plans were introduced, relative to the 12 weeks before the plans went into effect. A year later, two of the three pay plans were discontinued. Interviews with the managers who discontinued the plans revealed that they felt little commitment to the plans and had not themselves participated in their development (Scheflen, Lawler, & Hackman, 1971). Lasting, effective change in organizations requires involvement of individuals at all levels in the organization.

Conclusion

Occupational stress appears to be a growing problem as many organizations increasingly find themselves functioning in rapidly changing internal and external environments. However, it is not just change and its attendant uncertainty that are the significant precursors of stress in the 1990s. As organizations have become leaner and more aggressively competitive, the effect has been to increase individual workloads as well as to fuel endemic fears concerning future job security. The changing structure of the family unit has placed increased and new demands on the home–work environment. The extent to which organizations and their individual members learn to cope effectively with the stresses and strains of work has important implications for their continued survival and for society generally.

Organizational preoccupation with the outcome of the stress process has tended to detract from the more proactive approach of addressing the source or causal factors in the stress process. Clearly, it is important for organizations to recognize that primary, secondary, and tertiary levels of intervention are complementary and that the diagnostic stress audit has a useful and potentially cost-effective role to play in identifying appropriate primary level interventions to reduce workplace stressors. The substantial yet piecemeal growth in the number of organizations providing some form of stress management activity

or EAPs in the United States and United Kingdom has rapidly overtaken the pace of academic research in systematically evaluating the effectiveness of such interventions. Strategies that in effect shift the responsibility for dealing with workplace stress onto the individual, in isolation are unlikely to prove effective.

References

Angle, H. L., & Perry, J. L. (1981). An empirical assessment of organizational commitment and organizational effectiveness. *Administrative Science Quarterly, 26*, 1–14.

Barrick, M. R., & Alexander, R. A. (1987). The efficacy of quality circles. *Personnel Psychology*, 579–590.

Bruckman, J. C., & Peters, S. C. (1987). Mergers and acquisitions: The human equation. *Employment Relations Today, 14*, 55–63.

Cartwright, S., & Cooper, C. L. (1989). Predicting success in joint venture organizations in information technology: A cultural perspective. *Journal of General Management, 15*, 39–52.

Cartwright, S., & Cooper, C. L. (1992). *Mergers and acquisitions: The human factor.* Oxford, England: Butterworth Heinemann.

Cartwright, S., Cooper, C. L., & Barron, A. (1993). An investigation of the relationship between occupational stress and accidents amongst company car drivers. *Journal of General Management, 19*(2), 78–85.

Cooper, C. L., & Bramwell, R. (1992). Predictive validity of the strain components of the occupational stress indicator. *Stress Medicine, 8*, 57–60.

Cooper, C. L., Cooper, R. D., & Eaker, L. (1988). *Living with stress.* Harmondsworth, England: Penguin Health.

Cooper, C. L., & Lewis, S. (1993). *Managing the new workforce.* San Diego, CA: Pfeiffer.

Cooper, C. L., Mallinger, M., & Kahn, R. (1978). Identifying sources of occupational stress amongst dentists. *Journal of Occupational Psychology, 51*, 227–234.

Cooper, C. L., & Marshall, J. (1978). *Understanding executive stress.* London: Macmillan.

Cooper, C. L., & Mitchell, S. (1990). Nursing the critically ill and dying. *Human Relations, 43*(4), 297–311.

Cooper, C. L., & Payne, R. (1988). *Causes, coping and consequences of stress at work.* New York: Wiley.

Cooper, C. L., & Payne, R. (1991). *Personality and stress.* New York: Wiley.

Cooper, C. L., & Roden, J. (1985). Mental health and satisfaction amongst tax officers. *Social Science Medicine, 21*(7), 474–751.

Cooper, C. L., Rout, U., & Faragher, E. B. (1989). Mental health, job satisfaction and job stress among GPs. *British Medical Journal, 298*, 366–370.

Cooper, C. L., & Sadri, G. (1991). The impact of stress counselling at work. In P. L. Perrewe (Ed.), Handbook of job stress [Special issue]. *Journal of Social Behavior & Personality, 6*(7), 411–423.

Cooper, C. L., Sloan, S. J., & Williams, S. (1988). *Occupational Stress Indicator management guide.* Windsor, England: NFER-Nelson.

Cooper, C. L., & Smith, M. J. (1985). *Job stress and blue collar work.* New York: Wiley.

DeFrank, R. S., & Cooper, C. L. (1987). Worksite stress management interventions: Their effectiveness and conceptualization. *Journal of Managerial Psychology, 2*, 4–10.

Duffy, C. A., & McGoldrick, A. (1990). Stress and the bus driver in the UK transport industry. *Work and Stress, 4*(1), 17–27.

Edwards, J. R., & Cooper, C. L. (1990). The person–environment fit approach to stress: Recurring problems and some suggested solutions. *Journal of Organizational Behavior, 11*, 293–307.

Elkin, A. J., & Rosch, P. J. (1990). Promoting mental health at the workplace: The prevention side of stress management. *Occupational Medicine: State of the Art Review, 5*(4), 739–754.

Feldman, S. (1991). Today's EAP's make the grade. *Personnel, 68*, 3–40.

Folkman, S., & Lazarus, R. S. (1980). An analysis of coping in a middle-aged community sample. *Journal of Health and Social Behavior, 120,* 219–239.

Guzzo, R. A., Jette, R. D., & Katzell, R. A. (1985). The effects of psychologically based intervention programs on worker productivity: A meta-analysis. *Personnel Psychology, 38,* 275–292.

Harrison, R. (1972, May–June). Understanding your organization's character. *Harvard Business Review,* 119–128.

Hurrell, J. J., Jr., & McLaney, A. M. (1988). Exposure to job stress: A new psychometric instrument. *Scandinavian Journal of Work Environment and Health, 14*(Suppl. 1), 27–28.

Hurrell, J. J., Jr., & Murphy, L. R. (1992). An overview of occupational stress and health. In W. M. Rom (Ed.), *Environmental and occupational medicine* (2nd ed.). Boston: Little, Brown.

Ivancevich, J. M., & Matteson, M. T. (1980). *Stress and work.* Scott Foresman City, IL: Scott Foresman.

Ivancevich, J. M., & Matteson, M. T. (1988). Promoting the individual's health and well-being. In C. L. Cooper & R. Payne (Eds.). *Causes, coping and consequences of stress at work.* New York: Wiley.

Ivancevich, J. M., Matteson, M. T., Freedman, S. M., & Phillips, J. S. (1990). Worksite stress management interventions. *American Psychologist, 45,* 252–261.

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

Karasek, R. A., Theorell, T., Schwartz, J. E., Schnall, P. L., Pieper, C. F., & Michela, J. L. (1988). Job characteristics in relation to the prevalence of myocardial infarction in the U.S. Health Examination Survey (HES) and the Health and Nutrition Examination Survey (HANES). *American Journal of Public Health, 78,* 682–684.

Kelly, M., & Cooper, C. L. (1981). Stress among blue collar workers. *Employee Relations, 3,* 6–9.

LaRocco, J. M., House, J. S., & French, J. R. P., Jr. (1980). Social support, occupational stress and health. *Journal of Health and Social Behavior, 21,* 202–218.

Lawler, E. E., & Hackman, J. R. (1969). Impact of employee participation in the development of pay incentive plans: A field experiment. *Journal of Applied Psychology, 53,* 467–471.

Levering, R. (1988). *A great place to work.* New York: Random House.

Matthieu, J. E., & Zajac, D. M. (1990). A review and meta-analysis of the antecedents, correlates and consequences of organizational commitment. *Psychological Bulletin, 108*(2), 171–194.

Moos, R. H. (1981). *Work Environment Scale manual.* Palo Alto, CA: Consulting Psychologists Press.

Murphy, L. R. (1984). Occupational stress management: A review and appraisal. *Journal of Occupational Psychology, 57,* 1–15.

Murphy, L. R. (1988). Workplace interventions for stress reduction and prevention. In C. L. Cooper & R. Payne (Eds.), *Causes, coping and consequences of stress at work.* New York: Wiley.

Newman, J. D., & Beehr, T. (1979). Personal and organizational strategies for handling job stress: A review of research and opinion. *Personnel Psychology, 32,* 1–43.

Oldham, G. R. (1988). Effects of changes in work space partitions and spatial density on employee reactions: A quasi-experiment. *Journal of Applied Psychology, 73,* 253–258.

Osipow, S. H., & Spokane, A. R. (1983). *A manual for measures of occupational stress, strain and coping.* Odessa, FL: Par, Inc.

Rafael, A. (1985). Quality circles and employee attitudes. *Personnel Psychology, 38,* 603–615.

Rasmussen, L. (1992). *Cultural change and its effect on job satisfaction, organizational commitment and motivation with Hydro Aluminium.* Unpublished master's thesis, University of Manchester Institute of Science & Technology, Manchester, England.

Rees, D., & Cooper, C. L. (1991). A criterion-oriented validation of the OSI outcome measures on a sample of Health Services employees. *Stress Medicine, 7,* 125–127.

Reynolds, S., Taylor, E., & Shapiro, D. A. (1993). Session impact in stress management training. *Journal of Occupational and Organizational Psychology, 66,* 99–113.

Robertson, I. T., & Cooper, C. L. (1990). The validity of the Occupational Stress Indicator. *Work and Stress, 4,* 29–39.

Rotter, J. B. (1966). Generalized expectancies for internal v. external control of reinforcement. *Psychological Monographs, 80,* 609–619.

Sauter, S., Hurrell, J. J., & Cooper, C. L. (1989). *Job control and worker health.* New York: Wiley.

Sauter, S. L., Murphy, L. R., & Hurrell, J. J., Jr. (1990). A national strategy for the prevention of work-related psychological disorders. *American Psychologist, 45*, 1146–1158.

Scheflen, K. C., Lawler, E. E., & Hackman, J. R. (1971). Long-term impact of employee participation in the development of pay incentive plans: A field experiment revisited. *Journal of Applied Psychology, 55*, 182–186.

Skov, P., Valbjórn, O., & Pedersen, B. V. (1989). Influence of personal characteristics, job-related factors and psychosocial factors on the sick building syndrome. *Journal of Work Environment, 15*, 286–295.

Skov, P., Valbjórn, O., & Pedersen, B. V. (1990). Influence of indoor climate on the sick building syndrome in an office environment. *Scandinavian Journal of Work, Environment and Health, 16*(5), 363–371.

Smith, D., & Mahoney, J. (1989, August). McDonnell Douglas Corporation's EAP products hard data. *The Almacan*, 18–26.

Sutherland, V. J., & Cooper, C. L. (1990). *Understanding stress*. London: Chapman & Hall.

Zaccaro, S. J., Craig, B., & Quinn, J. (1991). Prior absenteeism, supervisory style, job satisfaction, and personal characteristics: An investigation of some mediated and moderated linkages to work absenteeism. *Organizational Behavior and Human Decision Processes, 50*(1), 24–44.

JOB STRESS INTERVENTIONS

EDITED BY
LAWRENCE R. MURPHY,
JOSEPH J. HURRELL, JR.,
STEVEN L. SAUTER, AND
GWENDOLYN PURYEAR KEITA

AMERICAN PSYCHOLOGICAL ASSOCIATION
WASHINGTON, DC

The opinions, findings, and conclusions expressed in this volume are not necessarily those of the National Institute for Occupational Safety and Health, nor does mention of company names or products constitute endorsement by the National Institute for Occupational Safety and Health.

Published by
American Psychological Association
750 First Street, NE
Washington, DC 20002

Copies may be ordered from
APA Order Department
P.O. Box 2710
Hyattsville, MD 20784

In the United Kingdom and Europe, copies may be ordered from
American Psychological Association
3 Henrietta Street
Covent Garden, London
WC2E 8LU England

Typeset in Century Schoolbook by Easton Publishing Services, Inc., Easton, MD

Cover designer: Minker Design, Bethesda, MD
Printer: Kirby Lithographic Company, Inc., Arlington, VA
Technical/production editor: Valerie Montenegro

Library of Congress Cataloging-in-Publication Data
Job stress interventions / edited by Lawrence R. Murphy . . . [et al.].
p. cm.
Derived from the 1992 conference, Stress in the 90s: a changing workforce in a changing workplace.
Includes bibliographical references and index.
ISBN 1-55798-281-3 (acid-free paper)
1. Job stress—Congresses. 2. Stress management—Study and teaching—Congresses. 3. Employees—Training of—Congresses. 4. Employees—Counseling of—Congresses. 5. Employee health promotion—Congresses. 6. Employees—Health risk assessment—Congresses. I. Murphy, Lawrence R. II. American Psychological Association.
HF5548.85.J655 1995
158.7—dc20 95-37647
CIP

British Library Cataloguing-in-Publication Data
A CIP record is available from the British Library.

Printed in the United States of America
First edition