

**STRESS MANAGEMENT IN WORK SETTINGS**

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## PREFACE

Since the mid-1970s, a growing number of studies have evaluated the merits of prescriptive, relaxation-based stress control methods as applied in work settings. Collectively labeled stress management, methods like muscle relaxation, meditation, biofeedback, and cognitive strategies have been taught to workers as a means of reducing psychophysiological and subjective distress. Such strategies have focused exclusively on providing the individual worker with skills for recognizing and coping with stress in a health promotion context. Accordingly, stress management is usually offered to healthy, asymptomatic workers as a preventive measure. Workers exhibiting acute stress reactions or organizations where apparent stress problems exist have not been the usual targets for stress management.

The purpose of this publication is to summarize scientific evidence and to review conceptual and practical issues relating to worksite stress management. It is a collection of original contributions that address current issues and problems in the field. The chapters aim to provide a context within which stress management programs can be developed, implemented, evaluated, and maintained in work settings. As such, it seeks to offer guidance, not guidelines.

The intended audience of this publication is best described by their classification into "user" groups: (1) those who ultimately make the decision to offer employees a stress reduction program (or rather to take some action with respect to employee stress, be it a program or not), (2) those who have responsibility for deciding what type of action will be taken, its' scope, essential ingredients, and operating characteristics, and (3) those who actually implement the action, whether in-house personnel or an outside individual or group. Each of these "user" groups will find information in this publication relevant to their respective needs.

The document is divided into three parts. Part I contains three chapters that deal with organizational stress and its assessment. Part II contains four chapters that describe aspects of stress management as applied in work settings. Part III is a collection of resources for training materials, products, and equipment.

Two themes that run throughout this publication should be acknowledged here. First and foremost is that stress management, as currently defined, has a limited role in reducing organizational stress because no effort is made to remove or reduce sources of stress at work. Focusing on the individual as the prime target for organizational intervention creates a dilemma of "blaming the victim." A more appropriate application of stress management would be as a complement to job redesign or organizational change interventions.

The second theme is that conceptual issues are as important as logistical ones in determining program success. Considerable effort should be expended at the outset to define the purpose of the program, delineate organizational and individual goals, acquire organizational support, and integrate the program with existing occupational safety and health efforts. In this way, the foundation is laid for a more stable and holistic program for controlling organizational stress.

The present collection of papers aims to shift the 'mind-set' away from prescriptive, brief stress workshops and toward more comprehensive actions that target the organization and the individual worker as intervention points for stress reduction.



## PART I

### STRESS IN ORGANIZATIONAL SETTINGS

The chapters in Part I provide a background on the nature and sources of organizational stress, relationships of perceived stress to worker health and well-being, and strategies for measuring stressors and strains in organizational settings. In Chapter 1, Drs. Singer, Neale and Schwartz present a case study of a stress evaluation conducted in a complex work setting. They use a systems approach to assess occupational stress and describe key elements of the assessment process. The chapter is a careful chronology of events surrounding the conduct of stress assessment in a work setting. Notable actions that facilitated the assessment process and pitfalls to avoid are succinctly described. The perceived effects of the study at different levels in the organization are also described.

Chapter 2 is an overview of occupational stress and health. Dr. Hurrell points out that the stress/health relationship is not a simple one but is moderated by a number of variables, including subjective appraisals of objective conditions, extra-organizational factors, personality traits, and buffer factors. Acknowledging these complexities, a number of stressful job elements and work routines that can impact worker health are identified and discussed.

In the final chapter, Drs. Jones and DuBois describe and evaluate organizational stress assessment instruments. The chapter examines four stress inventories that were designed for use in work settings and have ample evidence of validity and reliability: the Human Factors Inventory, the Work Environment Scale, the Maslach Burnout Inventory, and the Organizational Management Survey.

## CHAPTER 1

### THE NUTS AND BOLTS OF ASSESSING OCCUPATIONAL STRESS: A COLLABORATIVE EFFORT WITH LABOR

Jefferson A. Singer, Michael S. Neale, and Gary E. Schwartz

A few years back we conducted an extensive mail and telephone survey of occupational stress reduction programs for non-managerial employees (Neale, Singer, Schwartz and Schwartz, 1982; Singer, Neale, Schwartz, and Schwartz, 1986). In the process we learned that corporate and labor definitions of occupational stress were widely divergent. Stress, according to our corporate respondents, was primarily a question of maladaptive personal lifestyles and poor "person-environment fits." Alternatively, labor representatives portrayed stress as the product of organizational conditions that promoted loss of control, work overload, or underload.

In practice, these definitions often led management and labor to take quite separate paths in stress reduction programs. The corporate approach placed responsibility for managing stress on the individual, who was encouraged to relax, exercise, diet, and modify "Type A" behavioral patterns. Virtually all of these corporate stress management programs were linked to medical departments or to organization-wide health promotion campaigns, reflecting additional corporate priorities to reduce health care costs and to improve productivity. Labor's response to stress emphasized strong health and safety contract language and active health and safety committees to enforce written agreements. Any effort, including organizing, grievance procedures, or employee involvement, that effectively increased the worker's control and autonomy at the shopfloor or office level was considered a stress reduction strategy.

In our summary of these findings, we emphasized that the term "stress" had become part of a political rhetoric that allowed each camp, labor or management, to choose a meaning which was friendly to its cause. We highlighted some maverick companies and unions that had crossed "enemy lines" to develop stress reduction programs that included both personal and organizational approaches within the same intervention. Finally, we proposed a systems perspective, drawn from our research and clinical work in biofeedback and psychophysiology (Schwartz, 1982a, 1982b), as a potential integration of these diverse definitions of stress.

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Systems theory (von Bertalanffy, 1968; Miller, 1978) posits a hierarchical organization of biological, psychological, and social systems, or levels, each possessing unique resources, demands, and constraints. These systems are interrelated such that disharmony or change at one level of the hierarchy almost inevitably influences behavior at other levels. With respect to the work setting, the most obvious interaction takes place between an individual and the organization. In the literature on stress, French, Rogers, and Cobb (1974), Kahn, Wolfe, Quinn, and Snoek (1964), and Harrison (1978) have described this interaction as an issue of "person-environment fit." However, a systems orientation would also include other levels at which the fit of demands and resources might be out of balance (i.e., a specific work group and its physical setting, management policies and the entire organization, the organization and its relationship to other organizations in its particular industry, etc.). A systems assessment concerns itself with individual perceptions of strain, but also looks at pressures and changes in work groups and organizations over time.

In this view, exclusively corporate or labor definitions of occupational stress place a narrow focus on selected levels of the systems hierarchy. The corporate stress reduction effort might be successful at helping the employee to exercise but, if it does nothing about toxic fumes in the physical environment, it may make little difference. Similarly, a union representative who wins a reduction of overtime hours for an employee and then stands by while he or she uses the new free time to increase his/her drinking, also does a partial job.

To promote comprehensive and collaborative assessments of occupational stress by corporations and unions, we proposed a systems-driven assessment device, the Occupational Stress Evaluation Grid (OSEG) (see Table 1.1). The OSEG is a seven-by-three matrix that orders stressors and responses to stressors in a hierarchy going from physical dimensions to sociocultural levels of analysis. It enables us to plot the types of stressors operating at each level of the system, as perceived by those involved, and the impact of various stress reducers. Additionally, by separating interventions into formal and informal categories, the OSEG allows us to gauge the amount of personal and organizational control inherent in each of these potential adaptive reactions.

The remainder of this chapter describes our first attempt to test the practical utility of the OSEG as an assessment instrument in a work setting. While we had hoped that our assessment would serve as a starting point for labor-management collaboration in battling stress across each level of the OSEG's hierarchy, our initial effort was limited by pending contract negotiations and the inevitable constraints of field research. Due to management's refusal to participate in our project and our decision to pursue an assessment

TABLE 1.1 OCCUPATIONAL STRESS EVALUATION GRID (OSEG)

Levels	Stressors	Interventions	
		Formal	Informal
Sociocultural	Racism; Sexism Ecological shifts Economic downturns Political changes Military crises	Elections Lobbying/political action Public education Trade associations	Grass roots organizing Petitions Demonstrations Migration Spouse employment
Organizational	Hiring policies Plant closings Layoffs, Relocation, Automation, Market shifts, Retraining Organizational priorities	Corporate decision Reorganization New management model Management consultant inservice/retraining	Social activities Contests; Incentives Manager involvement & ties with workers Continuing education Moonlighting
Work Setting	Task (time, speed, autonomy, creativity) Supervision Co-workers Ergonomics Participation in decision making	Supervisor meetings Health/safety meetings Union grievance Employee involvement Quality circles Job redesign Inservice training	Slow down/speed up Redefine tasks Support of other workers Sabotage, theft Quit, change jobs
Interpersonal	Divorce, Separation Marital discord Conflict, family/friend Death, illness in family Intergenerational conflict Legal/financial difficulties Early parenthood	Legal/financial services Leave of absence Counseling, Psychotherapy Insurance plans Family therapy Loans/Credit unions Day care	Seek social support/ advice Seek legal/financial assistance Self-help groups Vacation/sick days Child care
Psychological	Neurosis, Mental illness Disturbance of Affect, Cognition or Behavior Ineffective coping skills Poor self-image Poor communication Addictive behavior	Employee assistance (referral/in house) Counseling, Psychotherapy Medication Supervisory training Stress Management Workshop	Seek support from friends, family, church Self-help groups/books Self-medication Recreation, leisure Sexual activity "Mental health" days
Biological	Disease, Disability Sleep, Appetite disturbance Chemical dependency Biochemical imbalance Pregnancy	Preplacement screening Counseling Medical treatment Health education Employee assistance Maternity leave	Change sleep/wake habits Bag lunch Self-medication Cosmetics Diets, exercise Consult physician
Physical/ Environmental	Poor air, climate Noise exposure Toxic substance exposure Poor lighting Radiation exposure Poor equipment design Bad architecture	Protective clothing/equipment Climate control Health/safety committee Interior decoration Muzak Union grievance	Own equipment, decoration Walkman, radio Consult personal physician Letters of complaint

with labor sponsorship, the data we obtained were somewhat skewed toward stressors in the work setting, organization, and physical environment. While we did assess some personal, emotional, and physical variables, we learned little of home life and lifestyle patterns that might increase or complicate an individual's stress.

With these reservations stated, this chapter presents the mechanics of how to assess workplace stress using the OSEG. It provides a hands-on account of how to (and how not to) do an assessment of occupational stress in collaboration with a union. Our focus will be on such traditional community and organizational psychology issues as entry, the consultant's role, establishing trust and allies, group dynamics, organizational structure, reciprocity, and follow-up. The actual data of the assessment will be summarized briefly, but are reported extensively elsewhere (Neale, Singer, and Schwartz, 1987). Throughout, we emphasize that the OSEG assessment procedure involves a combination of qualitative and quantitative information. Both one-on-one interviews and organization-wide surveys are employed. Additionally, since the OSEG grows out of a systems perspective, it is only one part of a larger assessment strategy that draws on systems principles of hierarchy of levels, dynamic process, differentiated input and output, and feedback (Miller, 1978). Each of these principles will be discussed at length in the course of our description of the actual assessment.

#### PUTTING THE OSEG INTO ACTION: AN ASSESSMENT OF A HOTEL DURING CONTRACT NEGOTIATIONS

To pursue an assessment of occupational stress that would involve labor and management, we felt it necessary to begin with a unionized work force. Consultants on occupational stress have traditionally worked with managerial level employees or with nonunionized populations (Huszczko, Wiggins, and Currie, 1984; Singer, Neale, Schwartz, and Schwartz, 1986). Accordingly, these consultants' stress programs and assessments in work settings have tended to neglect organizational and workplace stressors of most concern to unions. Hired by management and not necessarily with employees' previous approval, these consultants may seek to perform a fair and participative assessment with extensive employee feedback about stressors and responses. Still, the employees' attitudes toward this type of intervention may often be guarded, particularly if the results suggest changes in personal lifestyle, but not in organizational conditions.

By working with a union on our assessment, we could address some of the problems faced by the management-employed stress consultant. First, we reasoned that the structural organization offered by a labor union would assure us of employees' prior approval of and subsequent involvement in the assessment. Union input into the content and format of the assessment would necessarily include organizational

aspects of stress not often studied in the workplace. Second, we could make an effort to redress the imbalance in psychological services provided to unions, as compared to corporations. An alliance between a union and psychologists on the issue of occupational stress might offer a small step in building better faith between the two groups (see Huszczo et al., 1984). These two opportunities convinced us of the desirability of collaboration with a union and the need to follow through on that collaboration, regardless of management's decision to work with us or not. In other words, if we could get a union to agree to work with us on an assessment of stress we would perform the assessment, even if it did not fit our ideal plans for how the OSEG should be implemented.

Our one stipulation was that we would not work with a union unwilling to collaborate with management in the assessment. Joint collaboration, we felt, would provide us with access to all employees, credibility with both salaried and hourly staff, and a better overview of the setting. While a collaborative effort might raise concerns among respondents about potential uses of our assessment findings, we felt that the potential for setting-wide feedback and multilevel interventions far outweighed these issues. We also realized that such a collaboration would be difficult to accomplish in most settings, given the traditional adversarial relationship of labor and management. Any union we contacted would have to play down their side of this antagonism for the collaborative assessment to work. By the same token, management would need to take a role equal to the union in both the assessment and dissemination of results.

The above explanation is important since it dictated what our point of entry would be (with whom we would first meet) and what our ultimate goals were (not just to test the OSEG, but to build better ties between psychologists and labor). With this agenda laid out, we considered settings that would fit our OSEG framework and that possessed unionized work forces. Hospitals, schools, and hotels all seemed like appropriate choices due to their relatively self-contained nature and variety of occupational and organizational levels. With aid from some community contacts, we settled upon the hotel industry and set up an appointment with an international representative of a large hotel workers' union.

#### First Contact with the Union

In a meeting to prepare for our initial discussion with union representatives, we outlined what we wanted to accomplish and what we felt we had to offer to the union. From our perspective, we wanted to show that stress was not a unitary concept with clear cut effects. By dividing the hotel into levels of the OSEG, we hoped to demonstrate that stressors at different levels of the grid would produce discrete patterns of stress and well-being. If this hypothesis were confirmed, it would present a strong case against generic stress management

programs that apply the same set of interventions to any group of employees without a systematic assessment of their actual stressors. Since unions were not sponsors of these "fix-all" programs in the first place, we knew our interest in this question would not be a selling point to entice the hotel union's involvement.

Our second major goal was to bridge the gap between labor and management definitions of stress through a collaborative stress assessment. With labor and management involved, both lifestyle and organizational aspects of stress would be covered. Since much of any union's organizing is accomplished through an adversarial relationship with management, collaboration did not promise to be much of an enticement either (we later saw the union take creative advantage of our interest in collaboration). A third goal, to produce a case study of stress assessment for this manual, might give the union some free publicity, but we were so vague about who would see the manual that we could not make this possibility sound very compelling.

There was, of course, another much more practical goal, and this one offered common ground. We could quantify for the union complaints of poor conditions, overwork, or arbitrary supervision. At the same time, our interviews and surveys would serve an educational purpose; individuals would be asked to think about problems or conflicts at work that they might have previously left unnoticed or reluctantly accepted. In the name of the union (and potentially of management as well), we might raise employee consciousness about what they deserve or should expect from bosses, fellow employees, and themselves at work (and we would do this all for free). While it might not be helpful to raise employees' awareness of stressors without offering alternatives to reduce them, we felt comfortable that the union structure could turn our findings into a vehicle for organizational change. Moreover, our very presence would provide concrete evidence to union members of the union's interest in their welfare. Even if we could tell the union leadership nothing new about their workplace, we could function as an effective organizing tool in the union's effort to solidify its ranks. Acknowledging our potential to become a political vehicle for the union, we reasoned this might be our best offer, especially since our other selling points might not be immediately attractive.

At the start of our meeting, the hotel union representative made it clear that health and safety issues were not a major bargaining concern in an era where unions face take-backs and work force reductions. No major time or labor could be diverted from organizing efforts around wages, benefits, and job security in order to help us with our stress project. He underscored this point with a story about a previous research group that had done a stress questionnaire with his union. After investing many hours of shop stewards' time, the union had never heard a word about the results. They had felt used and were naturally a bit wary of any new project.

On the other hand, a major hotel in our area was having serious problems with stress. As the union representative described the situation at this hotel, we began to realize that labor-management interactions had grown tremendously in sophistication. The employee-manager relationship was no longer a shopfloor phenomenon, but was dictated by multinational corporate decisions that cut across each level of the OSEG hierarchy. The hotel was part of a large corporate chain that had recently been taken over by an even larger conglomerate. Its policies were dictated by the chain's international headquarters, which prescribed as much standardization and time accountability as possible. The consequences of this standardization at the managerial level included expectations of company loyalty, little room for informal or flexible arrangements within a given hotel's policies, and extensive managerial rotation (to help train managers to be interchangeable as needed).

The hotel in question, we were told, had been run in a rather disorganized and informal manner for most of the nine years it had been open. A year previously, with the hotel in the red, the international headquarters had sent in a new management team drawn from other hotels in the chain. The stated purpose of this new management was to get the hotel back into shape and to standardize its practices and routines in line with more successful chains. Even though it was the best situated and equipped of the three major downtown hotels, it had not yet fulfilled its earning promise. Under a new general manager, who had taken up residence in the hotel, this corps of "outsiders" had initiated sweeping changes in hotel policy and organization, most notably staff reductions and new work schedules. The union, organized shortly after the hotel opened, reacted quite negatively to the management changes. Members believed their performance was judged unfairly by a group of strangers, and that inefficiency at the hotel was due to management's abuse of perquisites and lavish after-hour parties. Union members resented the new stricter policies instituted by management and also feared further lay-offs due to a push for higher productivity.

While these changes were occurring at the hotel, contract negotiations for all three downtown hotels were fast approaching. The union had managed to arrange the three locals' contract expiration dates to overlap within the same week. Reflecting a sophistication equal to that of management, the union's organizing effort for these new contracts would involve a three-pronged strategy. At the highest level, the union would go after the parent corporations that owned the hotels. This would mean research into the larger social policies and activities of each corporation. Key company leaders would become the focus of letter-writing campaigns, demonstrations when they spoke in public, and visits from politicians sympathetic to the union. This "corporate campaign" would also challenge the public image of civic commitment these companies projected to the city. Newspaper advertisements and rallies would question the depth of their



humanitarian spirit. How could these companies have civic pride if they didn't treat their own employees well? The final prong of the union strategy, and always the most important, was the willingness of the three locals to stand by each other and take to the streets. Paid staff and shop stewards at each hotel would be responsible for building a strong committee structure that would define contract proposals, elect a negotiating committee, and, if necessary, form the nucleus of picket captains.

Once he finished his description of how all these elaborate forces would come into play within the next nine months, the union representative suggested where our assessment might fit into this scenario. The paid union staff for the three hotels consisted of two full time organizers and a part time clerical worker. The senior organizer of the two was also covering hotels in the neighboring state for another staffer who was helping out at a significant strike in Las Vegas. Our project might keep the union in the minds of the membership as the other organizer struggled to lay the groundwork for a committee structure at the three hotels. As long as we did not make many time demands on either organizer, we could aid in the educative process necessary to the contract negotiations. Our assessment might help employees to articulate dissatisfactions and demands that they might later express during the contract proposal meetings. Additionally, we might be able to document quantitatively the effect of top level corporate decisions as they trickled down and affected the individual employee. Perhaps, the information we collected could be used during negotiations either through the media or to support requests for better contract language at the bargaining table. The union representative did not, however, express much confidence in these possibilities.

Our assessment had already begun with this 1 1/2 hour meeting. In terms of the OSEG, we were operating at the highest social/political level. Our assessment of a union work force's occupational stress was to take place on the battleground of a modern union-management struggle. The players were no longer a bunch of immigrant workers and a grizzled boss, who had come off the boat only a few years earlier than the workers. Instead, the bosses were unidentified corporate decisionmakers, who relied on computer projections and standardization. The workers were led by college-educated, full-time organizers who orchestrated contract negotiation drives like commando assaults. It became very clear to us that a major goal would be to document how these higher level strategies (which were only then commencing) would produce specific effects on employees' lives and perceptions at the time of our full-scale assessment.

### First Contact with the Paid Staff of the Hotel Union

To follow up our first meeting, we arranged a meeting with the two organizers for the three downtown hotels. The object of this meeting was to present our project to them and, if they were interested, to confirm that we would do an assessment of the hotel named by the international representative at our prior meeting. We ended up meeting only with the senior organizer since the other organizer, who was directly responsible for servicing the hotel in question, was involved in a member's grievance hearing. His absence foreshadowed just how tightly his time would be scheduled during our assessment efforts. The senior organizer re-emphasized much of what we had previously heard about the corporate style of management at the hotel and the excesses of past managers. He made it clearer that the organizing campaign for the contract would not be centrally focused on wages, but rather on working conditions. The employees would present their demands in the context of "dignity and justice on the job." What they wanted most was respect from the new managers and recognition of their professionalism.

The senior organizer also offered us a first glimpse of specific stressors we might want to investigate at the hotel. Besides the difficulty with management, he felt we might look for evidence of short-staffing, abrupt schedule changes, and lack of information about policy changes. At the response level, he pointed out that hotel employees tended toward alcohol and substance abuse (partly due to the subculture of parties and extravagance that a hotel breeds). While he presented the hotel employees as basically a good union membership, he mentioned it would help him if he could learn more about what the union members saw as positive benefits to being in the union. This knowledge could be extended to organizing drives for non-union hotel employees.

Since he seemed willing to let us do the assessment, we raised the issue of soliciting management's collaboration. Without much hesitation he agreed to this, but for reasons we had not expected. He was so convinced that management would refuse our request that he saw their refusal as an organizing opportunity. He could promote the union as willing to aid health professionals in helping the membership, while the hotel management didn't seem to care. When questioned about what he would do if they did agree, he replied that conditions were so stressful at the hotel that the management would still be forced to make concessions. If they didn't change conditions once the stressors had been identified, they would look even worse than if they hadn't participated in the assessment; which is why, he pointed out, they would never accept our offer in the first place -- they had no interest in making changes that might upset their standardization.

### The First Stage of the Assessment

With the assessment now a tangible project, we developed a research strategy that would blend the application of the OSEG with a larger systems outlook (see Table 1.2). As Table 1.2 indicates, the first step of the research strategy was to contact labor and management representatives. After contacting labor representatives, we wrote a lengthy letter to the general manager of the hotel. We offered a list of reasons for our choice of his particular hotel as a focus of our assessment including its proximity to Yale, its highly professional staff, its blend of autonomy with support from a world wide corporation, its competition with other downtown hotels, and its established union work force. The letter went on to describe the mechanics of the assessment (interviews and a survey), our financial needs (none), and our strong commitment to a labor-management collaboration. To assure him that we were interested in a balanced collaboration and to underscore our bipartisanship, we indicated that the same letter had been sent to the two organizers for the union. We expressed from the outset that we were working under contract for the National Institute for Occupational Safety and Health, and that our purpose was to involve labor and management in a collaborative and comprehensive assessment of stress.

During this time, we also made direct efforts to contact someone in the parent corporation, such as a medical director or human resources officer, who might be supportive of our proposed assessment. We hoped their approval might lead to a "top down" decision to collaborate in the hotel stress assessment. Unfortunately, and characteristic of many service corporations (see Singer et al., 1986), there was no such sympathetic figure to be found in this organization. Our conversations with health representatives of the corporation made it clear to us that stress programs or interventions, particularly at the level of non-salaried employees, were a low priority. After two weeks without a reply from the hotel's general manager, we began to leave messages with his secretary. Though he never returned our phone calls, we did finally receive a one paragraph note approximately three weeks later. The note explained that due to renovations, changes in management, and upcoming contract negotiations, the hotel administration would not find it possible to participate with us in this project. At this point, we kept to our original commitment to follow through on our agreement with the union, even though the assessment would not become a shared project between management and labor.

As a structure for our assessment, we returned to the four principles of systems theory listed earlier. The first systems principle, the hierarchical organization of work stress, would allow us to divide the hotel up into increasing levels of complexity. Each level, and each subsystem within it, could then be assessed for its contribution to employee stress. Accordingly, we would need to design questions that

TABLE 1.2 OVERALL ASSESSMENT AND RESEARCH STRATEGY

1. Contact labor and management representatives for potential collaboration.
2. Define work units and organizational structure. Outline demographics.
3. Identify representatives within work units for interview.
4. Develop work history interview format. Select relevant survey items.
5. Interview work unit representatives about work experiences. Administer trial survey.

Feedback of results to work unit representatives for verification.

6. Finalize stressor survey based on interview data and representative input.
7. Contact employees and survey organization about work-related stressors.

Feedback of results to the entire organization.

8. Devise a stress response survey specific to work units and to identified stressors.
9. Survey work units about responses to work-related stressors.

Feedback of results to work units.

10. Compile stressor-response results and formulate profile of organization.
11. Identify stressful event for organization, using management and labor assistance.
12. Survey work units about stressors and responses related to stressful event, again using instruments specific to work units and identified stressors.

Feedback of results to work units and organization.

13. Devise interventions at work group level to deal with stressful events, based on survey responses.
14. Identify another stressful event for organization, this time implementing intervention strategy.
15. Survey work units about response to stressful event and effectiveness of intervention strategy.

Feedback of results to work units and organization.

16. Compare stressors-responses to both stressful events.
17. Attempt to establish this research-intervention strategy as an ongoing organization process, with individuals trained to implement it.

would assess the individual performing his/her work within a setting (physical environment), as part of a work group (interpersonal environment), which represented one component or subsystem in the hotel (organization). The hotel, in turn, was subject to local, national, and international market forces and to a variety of social, and political influences (Strand, 1983). Second, we sought to assess the dynamic process of stress in the workplace. Alterations in the organization (such as new management or contract negotiations) should lead to variation in levels of the OSEG at which stress is reported. Depending on particular factors salient in a workplace at a given time, employees' perceptions of stressors would actually sway from individual or job specific causes to organizational ones and back again.

Since the union leadership sought to capitalize on employees' apparent dissatisfaction with new management, we were curious at which levels employees would report the greatest stressors. If the union leaders' strategy proved effective, employees of the hotel at this time would increasingly view upper level management and treatment by the organization as significant stressors, perhaps even more so than the conditions of their work. Later, if we were to do a follow-up assessment after the contract was settled and organizing efforts reduced, we might find a shift away from an emphasis on management as a stressor. The dynamic concept of stress argues for repeated assessments over different moments in an organization's history. The number and location of stressors reported by employees might fluctuate not only with contract timetables, but even more frequently with peak and off seasons. Single administrations of stress surveys might encourage respondents to perform an averaging process that would mask temporal variation in their perception of stressors.

At all times during our assessment, we would attempt to differentiate moments when we provided input to the hotel's system or collected output from it. In other words, any questions or surveys we presented to the hotel would need to be understood as information we were offering to the employees about what issues seemed important or worth discussion. Similarly, their replies to our inquiries would be an opportunity for union members to inform us about what they, themselves, thought to be of actual relevance or importance. This distinction between input and output would also allow us to monitor how our questions might influence or shape employees' responses. To safeguard against this bias, we split the interview segment of our assessment into two parts. The first task of the interview involved employees' open-ended descriptions of "a typical day at work." Once interviewees had described their perceptions of the hotel in their own words, they answered items we had written.

Finally, we sought to apply the systems principle of feedback to the actual creation of our assessment instruments and strategies. This would mean, as Table II indicates, we would return to our original

sources of data (before a new data collection step was initiated) to confirm that we understood their communications and that our next step in the assessment conveyed their concerns.

#### First Contact with Hotel Employees

In a follow-up meeting with both organizers for the hotel, we laid out the basic components of the assessment. We wanted to interview representative employees from each department of the hotel. These interviews would provide us with a detailed sense of those stressors unique to specific jobs or departments in the hotel as well as information about stressors shared by all members of the hotel staff. Based upon this information, we would develop a survey for general distribution that would cover the diverse stressors raised in the interviews. At the same time, each survey would have additional questions aimed at the specific concerns of each department. We would analyze the results of the survey and prepare a written report in time for use in contract negotiations.

In order to choose a sample of union members for interviews and also to make sure the employees were interested in such an assessment, we requested a meeting with shop stewards from the different hotel departments. We cannot overestimate the importance of shop stewards to the success or failure of any attempted collaboration with labor. Shop stewards serve as ombudsmen, organizers, union officials, and psychotherapists. They are the conduit through which any outsider will reach a rank-and-file member. Consequently, a union's organization is only as good as its shop steward structure. In times of contract negotiations, shop stewards oversee contract proposal meetings and election of the negotiating committee. During strikes, shop stewards become picket captains and administrators of picket pay and strike funds.

All this noted, we should point out that the main goal and main headache for the organizer with whom we worked was to strengthen the shop steward structure at the hotel before the contract negotiations began. Our first meeting with the shop stewards conveyed to us the extent of the task that lay before them. Four of the eight stewards made it to the meeting. One steward's son had just been fired for stealing from a cash box and she interrupted our presentation intermittently to argue with the organizer about his handling of the incident. On top of this, since the meeting was held in the hotel, one or another steward was summoned away for minutes at a time. The scene itself was quite comic, given the diverse outfits of the union members (bellman coats, chef's hats, waitress aprons, and housekeeping uniforms) and the half-Spanish, half-English yelling match between the steward and the organizer. Still, the shop stewards present could not overemphasize the stress they had experienced at the hotel under the new management. They were very much in favor of whatever efforts we could offer to provide concrete evidence of this problem. They

promised to produce for us a list of 12 names of rank-and-file employees who could familiarize us with the workings and the particular stressors of each department. The most experienced steward, the head bellman, also indicated he would explain our project to the absent stewards and obtain the necessary names from them.

At this point we began to understand a warning the senior organizer had given to us about our assessment. He cautioned us that it would be easy for our assessment to become an evaluation of life in "the front of the house" of the hotel, meaning the bellmen, front desk clerks, waitresses, and bartenders. These individuals were usually the more articulate and often college-educated employees of the hotel. For our assessment to be valid and helpful to him, we needed to reach the "back of the house" in equal numbers (housekeepers, housemen, dishwashers, laundry workers, busboys). His point raises a larger issue in any assessment of a work organization. Each workplace has a subculture with its own class system and norms. If an assessment fails to account for this culture in the construction of its instruments, the result will most likely be skewed and inaccurate. We faced this problem with Spanish-speaking employees, as will be described later on.

As we waited for the stewards to produce a list of names, we realized that our assessment faced a long road ahead. The steward structure was by no means as organized as we had hoped (nor, you can bet, as the organizer had hoped). Practically, this meant that every step in our assessment strategy would take more time and effort on our part than we had anticipated. Additionally, it left the organizer little time to work with us in designing or implementing our project.

### The Interview Process

With a list of employees finally in hand, we began the interview process (following along on Table 1.2, we were now up to Step 4). Our goal here was to perform a diagnostic occupational history, using our 12 union representatives to convey the general conditions of their particular departments (Step 5). In the first portion of the interview we recorded their previous work experience and the types of jobs they had performed at the hotel. We then asked each interviewee to take us step-by-step through a typical day and a particularly stressful day in their department. Their accounts were strikingly detailed and vivid; one laundry worker even drew a picture of the laundry room and narrow corridors to convey how much difficulty she had with her linen carts. A front desk clerk described how her responsibility for paperwork and finances (shift sheet, mail logs, events of the day, bank vault, outlet checks) conflicted with her interactions with guests at the counter. A pastry chef's assistant discussed the monotony and effort involved in rolling dough and spreading jam daily for 1000 turnovers.

Though these stressors were specific to discrete tasks within each department, an overarching theme of dissatisfaction with labor-management relations repeatedly surfaced. This theme was symbolized by complaints one might first dismiss as rather minor. First, every representative mentioned the poor quality of food served by the cafeteria. Since employees of the hotel were not allowed to leave the hotel during their shifts, many relied on the cafeteria for both meals and social life. The menu was dictated by whatever had been left over from the various functions catered by the banquet department. Second, the new management had removed the television from the cafeteria with the explanation that it had led to prolonged breaks and wasted work time. The food and, to an even greater extent, the abducted television, summed up in a powerful (if not visceral) way, the employees' sense that management treated them like children or, even worse, robots. The other impression communicated by interview participants was that workers could see an improvement in the hotel's quality and efficiency, but were asking themselves, at what or whose expense? Each could think of co-workers who had recently been laid off or who had had their hours cut, while a large dining room, closed ostensibly for renovations, lay dark and empty in the middle of the hotel.

The second portion of the interview consisted of an oral administration of a pilot version of our stress questionnaire, divided into the OSEG levels previously discussed. In addition to the items we had created, we drew questions from the "Quality of Employment Survey" (1977), the "Office Workers: Health and Well-being Survey" (Gordon, Stellman, and Snow, 1982), and the "CWA Local 1180 Stress Questionnaire" (Love, 1983). The list of items ranged from the temperature in the restaurant kitchens to the level of competition with other hotels in the city.

We found this trial run of our eventual questionnaire extremely helpful. We learned how to reword certain items to make them clearer and more neutral. Additionally, we were able to delete questions that were uniformly irrelevant across the departments of the hotel. Most importantly, we realized that to assess both stressors and responses to stressors in the same survey would be too demanding on employees' time. To satisfy properly the different levels of the OSEG, from physical environment through work demands on up to organizational factors, we had already created a 10 page questionnaire. For this reason, we decided to restrict our initial efforts to the study of stressors and not employee responses to the stressors. With the contract expiration date drawing closer, we agreed to limit our subsequent assessment efforts to the patterns of stressors we could identify (Steps 1-7). We could then take up employees' characteristic responses to stressors in a subsequent assessment. Though this decision was necessary, it troubled us to know that we might raise employees' awareness of problems at the hotel without also raising



their awareness of solutions to these stressors. We took some comfort that the union leaders were using their organizing campaign to address practical solutions to many of the concerns raised by our interviewees.

The interviews were conducted in the union hall and lasted 2-3 hours. Though we paid \$10 per interview, we had a difficult time pinning down the 12 representatives to meet with us. Much of this difficulty had to do with the odd scheduling shifts that are part of hotel work. Some of their reluctance and spotty attendance might also be attributed to the awkwardness of the task or to unfamiliarity with the union office.

Union members' unfamiliarity with the location of the union office could be interpreted in two ways. Either the union's shop steward structure was so effective, rank-and-file members had no cause to go the office, or the union's organization was not as firmly entrenched as we had thought. In a sense, both possibilities were true; it simply depended on the effectiveness of each department's shop steward. Still, the union office was housed in the third floor of a dentist's office on a leafy, almost suburban street two miles from the hotel. The primary reason was the cost of downtown rents, but we came to feel the extent of its inconvenience for members was costly as well.

#### The Stress Survey

With the interviews completed, we generated a new OSEG tailored to stressors present at the hotel (See Table 1.3, columns 1 and 2). Based on the organization of the new OSEG, we produced a stress survey specifically for the hotel (Step 6). This effort provided our first output to the union members. We went back to the shop stewards and asked them to read and fill out the survey. We wanted to know if we had listened well and picked up on the main concerns faced by employees in the hotel. Their feedback helped us to clarify wording once more and to shorten the questionnaire even further. The head bellman proved to be extremely helpful again in making sure all the stewards completed the pilot survey and returned it to us.

The final questionnaire covered the organizational, work setting (interpersonal, job characteristics, and physical environment), and individual (psychological and biological) levels of the OSEG. Among the work setting items, we embedded 20 of Karasek's (1979) questions concerning the level of demands and control attached to a particular job. For our psychological and physical items, we used a list of emotions in a typical day at work and a list of physical symptoms from the Symptom Checklist 90 (Derogatis, 1975). As mentioned earlier, we added an additional page of questions (color-coded by department) that focused on stressors specific to each department of the hotel. We hoped these questions would help differentiate patterns of stressors unique to work groups across the hotel. The questionnaire ran 10 pages and took between 15 to 30 minutes to complete.

TABLE 1.3 OSEG ASSESSMENT OF AN URBAN HOTEL

<u>OSEG Levels:</u>	<u>Sample Stressors:</u>	<u>Subscale Labels:</u>
Sociocultural	Gender or race discrimination Economic downturn/recession Seasonal business cycle National labor relations climate	
Organizational	Corporate ownership/structure Labor negotiations Staffing and hiring policies Layoff/reclassification Management ethos	JOB SECURITY SATISFACTION WITH MANAGEMENT POLICY SATISFACTION WITH MANAGEMENT PRACTICE COST-CUTTING
Work Setting: Interpersonal	Multiple supervision Management style/competence Work group structure/norms "Outsiders"	UPPER MANAGEMENT POSTIVIE UPPER MANAGEMENT NEGATIVE LOWER MANAGEMENT CO-WORKER RELATIONS
Job Characteristics	Unpredictable scheduling Conflicting demands Time pressure High demands/additional duties Low decision latitude Inadequate supplies/equipment Heavy lifting and pushing	SCHEDULING JOB OVERLOAD AUTONOMY EXTERNAL CONTROL
Physical Environment	Climate extremes Poor ventilation Hazardous situations Poor recreational facilities Poor quality food Uncomfortable positions	PHYSICAL DEMANDS
Family/Social	Schedule interference Child care responsibilities Financial difficulties Dual-career or blended families	
Individual: Psychological	Emotional experience of work Mood/memory changes Career/job expectations Lack of control/helplessness Motivation	POSITIVE EMOTION NEGATIVE EMOTION
Biological	Substance use/abuse Tension/pain Sleep difficulties Digestive problems Hypertension	MUSCLE TENSION AND PAIN SLEEP DISTURBANCE

With the questionnaire set, the next major hurdle was its distribution to the approximately 200 hourly employees of the hotel. At a meeting with the organizers, we saw clearly how protective they were of the time of both stewards and rank-and-file members. With the negotiations looming, there would be many requests for meetings, rallies, and votes. The organizers did not want to increase this load. The significance of management's nonparticipation weighed heavily at this point. Without management approval, the possibility of group administration or any use of work time was out of the question. We considered a mailing, but the union's poor return rates for their own surveys through the mail ruled out that option. Also, the union's lists of addresses and phone numbers for members was neither up-to-date nor complete. Finally, we decided to distribute the questionnaires at the contract proposal meetings and that each questionnaire would have a stamped envelope attached. In this way we could be sure that we, or a steward, had made personal contact with anyone who received a questionnaire. If respondents did not want to mail the questionnaire back, they could pass it on to the steward from their department. We stapled a cover letter to each questionnaire describing our research group and assuring confidentiality of responses. If an employee did not attend the meetings, the shop stewards were to keep track and present them with a questionnaire at a later date.

The contract proposal meetings were held in three large assemblies to overlap with each of the three shifts. Not only did we distribute the questionnaires, but we gained an invaluable check on the value of our survey and of our assessment up to that point. Perhaps of greatest interest, we could see the same union strategy first articulated to us by the international representative now laid out for the rank-and-file members by the junior organizer. At each of the meetings, the organizer made a brief speech about how the hotel unions represented an exception to the national trend of givebacks and union-busting. He outlined the same three-pronged (corporate-community-committee) strategy that was used in the Las Vegas hotel workers strike and by clerical workers at Yale to win certification of their union. Finally, he pointed out the need for active participation of the rank-and-file members in a contract proposal committee, an organizing committee, and a negotiating committee. With these structures in place, he felt certain they could obtain reasonable advances without (though, if necessary, with) a strike.

Over the course of the three proposal meetings, the familiar triad of wages, benefits, and working conditions was often raised, but it was clear that the last dominated the first two (with the exception of repeated requests for better sick day and disability provisions). Concern about working conditions emerged in many different ways; over- and under-staffing, misallocation of hotel resources, poor meals, uniform costs, scheduling, arbitrary decisions by management, extreme variation of temperature in the hotel lobby, etc. In the midst of

this clamor of dissatisfaction, the organizer skillfully returned each group's attention back to the management's lack of respect for and obvious underestimation of the union's strength.

At the beginning of each meeting, one of our investigators made a short speech to explain the survey, urging the audience to fill it out and mail it to the union. The organizer and one of our interviewees also spoke briefly in favor of the project. In all, we handed out 100 questionnaires in the course of that day and another 150 through shop stewards' efforts in the weeks following the contract proposal meetings.

Listening to the organizer train the stewards and rank-and-file members in the same program we had heard described by the international representative and the senior organizer, we realized our assessment had taken on a purpose different from, but not incongruent with, our original goal. We were about to provide the union with quantifiable feedback about the effectiveness of their organizing. In other words, if the organizer's committee structure and message took hold, the dominant stressor identified by our respondents should be the employees' relationship with management. According to the hotel OSEG (Table 1.3), our assessment should locate the greatest stress at the work setting/interpersonal level and, above that, at the organizational level (see Table 1.3 column 2, for specifics of these levels).

Before any analyses could be performed, we had the imposing task of retrieving a respectable number of questionnaires. Management's non-involvement had hindered distribution of surveys, but the effect was much worse for survey collection. In the beginning, we were completely dependent on the overextended organizer and shop stewards to prod and remind members to complete and return questionnaires. Shop stewards varied greatly in their commitment to the distribution and collection of questionnaires. When a shop steward failed to pass out our surveys or gave them out without explanation or follow-up, we could be set back for several days or weeks. Finally, another steward would carry the ball for the less helpful one and we would begin to see returns. Sometimes, the nature of the department itself influenced the number of respondents. Educational background, language differences, amount of satisfaction in a department, and relationships with superiors all influenced the rate of response in a given work group.

Here is where the senior organizer's warning about the "back of the house" and the "front of the house" was particularly salient. The front desk department responded most enthusiastically, due most likely to their higher educational level and to the head bellman's effectiveness as a steward. Also, their returns indicated they perceived themselves as extremely stressed due to high demands, understaffing, and lack of supervision. The other "up front"

positions like waiters and waitresses also showed a high response rate, though their steward was much less experienced and helpful. On the other hand, we simply were not getting back surveys from the "back of the house" members of the union. This problem affected our returns both in the food and beverage department and in the housekeeping department of the hotel.

It soon became clear that we faced two large problems with the "back of the house" employees. First, they were hardly strangers to poor working conditions or to stress, but they were skeptical about the usefulness of a questionnaire. They already knew all they needed to know about what was bothering them. Second, we had underestimated the number of Spanish-speaking employees, particularly among the housemen and maid staff. We had originally offered to produce a Spanish version of the questionnaire, but the union staff assured us that this would not be necessary except for 6 to 12 employees. Our subsequent interactions led us to feel that we might have lost more than a dozen employees to a language barrier.

Faced with these two obstacles we were still determined to fulfill our promise of an assessment for all classes of hourly employees at the hotel. To overcome the skepticism of the housekeeping and dishwashing staff, we decided we needed to speak with them personally about why the survey could be useful to them. With the aid of a few shop stewards, we began to spend time at the employee cafeteria during afternoon shift changes and breaks. We would introduce ourselves to a maid or houseman, give them a questionnaire (if they had not yet received one), and generally lobby for the usefulness of filling it out. We also recruited Spanish-speaking stewards to introduce us and to convey our message to a group of Hispanic workers. Often, these members would bring the questionnaire home and have their sons or daughters help to translate the questions. While this kind of personal interaction helped tremendously to increase returns, it required extensive time and labor, as well as being a little anxiety-provoking (we never knew how a security guard or manager would react to our presence in the hotel). Toward the end of the collection period, we were also aided by a banquet waitress who was taking part-time courses in psychology and took an interest in our project.

Our unorthodox style of data collection raises two difficult issues. First, we may have appeared to be union representatives to prospective respondents. This appearance could have biased our actual respondents to be more pro-union and less pro-management. However, in our presentation of surveys to employees, we emphasized that all types of replies were valuable, not simply negative ones. Second, our clandestine invasion of the cafeteria was not altogether ethical and we would certainly not recommend this technique as a standard data collection procedure.

At the same time that we were struggling to obtain returns, the organizer for the hotel was pushing stewards to hand out and collect a one page survey about the contract proposals. This survey increased the demands and confusion among union members another notch. Sometimes rank-and-file employees would ask, upon presentation of the survey, if the questionnaire came from the "union." Their question clearly implied that they saw themselves and the "union" as separate entities, even though the entire bargaining unit were members. It also expressed a certain psychological distance between the paid staff, shop stewards, and the rank-and-file members.

In long moments while we waited for an employee to enter the cafeteria, we fantasized about how different the operation could have been if management had provided us with an identified space in the hotel. Employees could have dropped in throughout the day. Similarly, we would reflect on how much richer the assessment would have been if we had been allowed to follow a maid or bellman through the course of a workday.

### Results of the Survey

Since we wanted to produce results that would be ready when contract talks began, we suspended the data collection approximately two weeks before the contract expired. Considering the chaotic conditions of the survey collection, the return rate (42%) was respectable. Table 1.4 presents the demographics of the sample, broken down by department. It is not the purpose of this chapter to review the results of the assessment, but we will point out one or two of the most relevant findings. The major question we examined through the survey was whether stressors at different levels of the OSEG would be correlated in different and systematic ways with employees' perceived well-being. More precisely, could we demonstrate that during a time of union organizing around management practices (i.e., a period of management changeover and contract negotiations), reported psychological and physical discomfort would be most related to the organizational level, as opposed to all the other levels of the OSEG we were able to sample?

In order to answer this question, we factor analyzed the questionnaire into subscales that corresponded to different levels of the hotel OSEG. The names of the subscales that emerged from the factor analyses are listed at their appropriate level in column 3 of Table 1.3. As one might note, the subscales of most interest to our predictions were "satisfaction with management policies" and "dissatisfaction with management practices." If we were to regress these two scales (along with the other subscales) on the positive and negative emotion subscales, we would expect them to emerge the strongest predictors of subjective well-being. By and large, the multiple regressions showed this result. The strongest predictors of

TABLE 1.4 RESPONSE RATES AND DEMOGRAPHICS OF HOTEL SAMPLE

Total hotel staff		240 (approx.)
Unionized employees		196
Response rate (hotel)		82/196 (42%)
Response rate (by department)		
Banquet		12/25 (48%)
Engineering		2/7 (29%)
Food and Beverage		33/82 (40%)
Front Desk		14/32 (44%)
Housekeeping		21/57 (37%)
Respondent characteristics		
Age:	Mean= 37.7 years	
	S.D.= 13.45	
Sex: Male	43%	
Female	57%	
Education:	Mean = 12 years	
	S.D. 3.40	
Race: White	68%	
Black	21%	
Hispanic	10%	
Asian	1%	
Marital status:	Married	43%
	Single	37%
	Divorced/Separated	19%
	Widowed	1%
Children	None	41%
	One	9%
	Two	23%
	Three or more	27%
Job Tenure:	Mean = 5.80 years	
	S.D.= 4.80	
Tenure at hotel:	Mean = 5.78 years	
	S.D. 3.43	

positive emotion at work were employees' feelings about upper management and its workplace policies (i.e., did management provide good training, treat employees like experts, and make efforts to improve employees' worklife?). The strongest predictor of employees' negative emotion at work was their dissatisfaction with managements' practices (including understaffing, lack of promotions, and unfair pay). No other subscale, including those that looked at job demands, physical environment, job security, and even scheduling, showed the same relationship to union members' emotions at work. Whether the relationship of management's policies and practices to perceived stress was particular to these hotel workers at a special moment in their work history, and whether our finding would generalize to other hotel workers (or other workers) are crucial questions. While the circumstantial evidence is compelling, we cannot conclude from these regressions that the organizing drive or the new management's policies caused the hotel workers to link their dissatisfaction to organizational factors.

On the other hand, these findings confirmed in an objective and quantitative way what we had already heard in our interviews and observed at the contract proposal meetings. The descriptive statistics on the survey showed that employees felt stressed by both job demands and management practices (working fast, skipping breaks, and having little control in the workplace). The inferential statistics revealed that at this particular juncture of rising tension over contract negotiations, their emotional well-being was more linked to feelings about management than any other aspect of the worksite. These results validated the organizers' and shop stewards' impressions about the employees' experience of the hotel climate. At the same time, the findings also gave them feedback that their efforts to intensify this climate may have worked.

#### The Impact of the Assessment

Our stress assessment, like the OSEG it employed, ended up with an influence on many different levels of the hotel's system. Most immediately and pragmatically, it actually played a role for the union in negotiations. During a discussion of the need for more employee input, the union negotiating committee raised the fact that they had some strong survey results about management practices and stress. The hotel negotiating committee expressed surprise that the survey had been completed after their initial refusal to participate (we were sure they knew all about us in the cafeteria). This exchange was linked to others at the bargaining table that eventually produced new contract language about monthly employee participation meetings between shop stewards and upper management of the hotel. Management has subsequently expressed interest in the results of the study and even raised the possibility of a collaborative follow-up. This development is probably the most gratifying of all, since it holds out the opportunity that we could perform a truly comprehensive



assessment. A jointly-sponsored project would allow us to look at employees' lifestyles and health habits. We could also have access to more employees, including supervisors and upper management. In this way, we could avoid the more polemical aspects (falling into a good guy - bad guy mind-set) that are inevitable when one works for only one side of a dispute.

The political flavor of our assessment and our role as assessors needs further thought and discussion. Working with shop stewards and union organizers, our analysis of the conditions at the hotel was, without question, biased. Still, the actual questionnaire data offered a more independent test of our initial biases. One could argue that only ardent union supporters answered the questionnaire, but an examination of open-ended responses left us fairly confident that the sample was a fair cross-section of opinion at the hotel. A more probing question might be whether we should have allowed ourselves to become part of a conscious strategy to organize the union work force. We believe there are three arguments in favor of our decision to do so. First, we saw our role for the union as functionally equivalent to that of a stress consultant for management. The stress consultant, who asks questions about diet and exercise and offers training in relaxation, promulgates a certain "management" conception of what stress is and how it should be treated. In the same vein, we asked questions about job characteristics, organizational policies, and working conditions. These questions encouraged employees to conceive of organizational stressors that they might not have considered previously. The fact that our approach seems unorthodox and politically-slanted may be more a statement about the lack of labor-oriented stress consultants than an indictment of our method.

Second, unions have agendas just as corporations do. No manager would hire a stress consultant who did not promise to improve the productivity and lower the health costs of employees. Similarly, a stress consultant for labor must offer a tangible service that will add to organizing efforts by unions during membership drives or contract negotiations. The bottom line for the union is how this project will help or hinder the advantage the union seeks in solidarity or negotiation.

Third, our project with the union allowed us to look at an area that is extremely under-researched in psychology - namely, strikes and their impact on employees and settings. We were able to trace an organizing campaign from its inception nine months before contract negotiations to the actual day of the strike deadline. Our conversations with organizers and shop stewards permitted us a more subtle understanding of the attributions employees make about working conditions and stressors during a period of contract negotiations.

A final related point is that our assessment reached workers whose stressors are seldom documented by corporate stress management programs. We allowed the opinions of maids, laundry workers, and dishwashers about what makes their work stressful to enter the stress literature alongside the air traffic controllers' and executives' complaints. For this data, we are grateful to the senior organizer, who was adamant about our inclusion of the "back of the house."

Since the assessment, the Food and Allied Services and Trades (F.A.S.T.) department of the AFL-CIO has requested copies of the OSEG, questionnaires, and results. They have plans to apply the assessment strategy to some organizing campaigns in non-union hotels. In fact, at a recent convention of hotel union organizers, they presented our model as potential organizing strategy, while one of the organizers with whom we worked listened in the audience. He assured us it sounded better in description than it looked while we were doing it.

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## CHAPTER 2

### AN OVERVIEW OF ORGANIZATIONAL STRESS AND HEALTH

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Americans in increasing numbers are claiming that stress in the workplace has caused them some form of disability. A recent study by the National Council on Compensation Insurance (NCCI, 1984) indicated that claims involving mental disorders caused by stress accounted for nearly 11% of all occupational claims between 1980 and 1982. Moreover, claims in which stress causes a physical disability are now recognized in all compensation jurisdictions except Ohio (NCCI, 1985). Despite this increased recognition by the legal, medical and insurance communities, stress for many (even those in the scientific community) is a complex and nebulous construct implying numerous events and processes.

Occupational stress as a field of inquiry examining job conditions and their health and performance consequences is a relatively new research domain crystallizing in the early 1970's. Its conceptual roots, however, can be traced to the early animal research of Hans Selye (1936) and Walter Cannon's (1929) work on the physiological concomitants of emotion. In the early 1930's Selye (1936) discovered that a wide variety of noxious stimuli (which he later referred to as stressors), such as exposure to temperature extremes, physical injury, and injection of toxic substances evoked an identical pattern of physiological changes in his laboratory animals. In each case, the cortex of the adrenal gland became enlarged, the thymus and other lymphatic structures became involuted and deep bleeding ulcers developed in the stomach and intestines. These effects were "non-specific" in that they occurred regardless of the nature of the insult and were superimposed upon any specific effects associated with the individual agents. Some years later, Selye (1946) described this somatic response as the General Adaptation Syndrome (GAS) and defined stress as the non-specific response of the body to any demand made upon it. His mention of "nervous stimuli" among the "stressor" agents capable of eliciting the GAS had an energizing effect on those working in the field of psychosomatic medicine.

Cannon (1914, 1929) had earlier laid the scientific groundwork for an understanding of how various emotional states affect physiological functions and disease states by describing the "fight or flight" response. This response, evoked by potentially dangerous situations, included elevated heart rate and blood pressure, a redistribution of blood flow to the brain and major muscle groups and away from distal body parts, and a decrease in vegetative functions. Perhaps equally important, Cannon (1932, 1935) pioneered the concept of physiological homeostasis and developed the use of an engineering concept of stress and strain in a physiological context. In particular, Cannon (1935) proposed the notion of critical stress levels which were capable of

producing strain in the homeostatic mechanisms. Although he used the term somewhat casually, it is clear that Cannon, like Selye, conceived of stress as involving physical as well as emotional stimuli (Mason, 1975).

More recently, Richard Lazarus and his colleagues added immensely to the study of stress by describing in specific terms how one's perceptions of objective events determine their health valence (see Lazarus and Folkman, 1984).

Cognitive appraisal is described by Lazarus as an intrapsychic process which translates objective events into stressful experiences. The importance of this formulation lies in its recognition that subjective factors can play a much larger role in the experience of stress than objective conditions. Indeed, any given objective event can at once be perceived positively by one person and negatively by another ("One person's meat is another person's poison").

The study of occupational stress (as opposed to other sources of stress) was given tremendous impetus in the early 1970s by the establishment of the National Institute for Occupational Safety and Health (NIOSH) by Public Law 96-596 (Occupational Safety and Health Act of 1970). The stated goal of this agency is to assure safe and healthful working conditions for America's working men and women. NIOSH is the principal Federal agency in the United States engaged in research aimed at the recognition and control of job related hazards. That behavioral and motivational factors had an important bearing on the attainment of this objective was clearly acknowledged in certain research provisions of the OSHA Act (1970). For example, Sections 20(a)(1) and 20(a)(4) explicitly directed NIOSH to include psychological, behavioral, and motivational factors in researching problems of worker safety and health, and in developing remedial approaches for offsetting such problems. Job conditions were broadly interpreted to include those of a psychological nature, consisting of undue task demands, work conditions or work regimens which apart from, or combined with, exposures to physical and chemical hazards may degrade worker physical or mental health (Cohen and Margolis, 1973). Since its inception, NIOSH has not only sponsored but conducted a large number of research studies which have helped to shape the course of job stress research in the United States.

#### A MODEL OF JOB STRESS AND HEALTH

Over the past twelve years, a paradigm of stress was developed by research psychologists at NIOSH to guide efforts at examining the relationship between working conditions and health consequences (see Figure 1). This model builds upon frameworks proposed by Caplan, Cobb, French, Harrison and Pinneau (1975), Cooper and Marshall (1976), and House (1974). In it, job stress is viewed as a situation in which some working condition (called a stressor) or combination of

conditions interacts with the worker and results in an acute disruption of psychological or behavioral homeostasis. These acute reactions or disruptions, if prolonged, are thought to lead to a variety of illnesses. As shown in Figure 1, the most commonly researched of these job stress-related illnesses have been hypertension, coronary heart disease, alcoholism and mental illness.

### MODEL OF JOB STRESS AND HEALTH

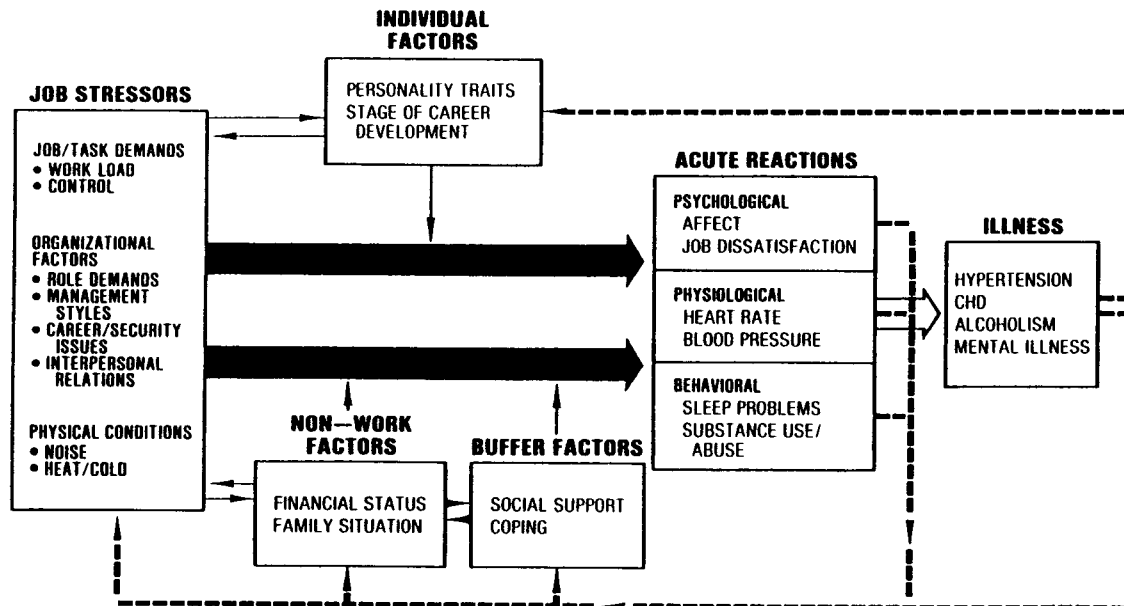


Figure 2.1. Model of Job Stress and Health

#### Job Stressors and Their Consequences

That various job conditions can produce psychological, physiological, and behavioral reactions in workers has been well documented (see Baker, 1985; Holt, 1982; and Hurrell and Colligan, 1982 for reviews). In general, these conditions or stressors fall into three very broad categories: Job/Task Demands, Organizational Factors, and Physical Conditions. Examples of common stressors in each category are discussed below.

Job/Task Demands. Workload is a feature of occupations that is easily recognized as "stressful" and has therefore received substantial empirical attention. Working excessive hours or holding down more than one job (or both), for example, has been associated with coronary

heart disease (CHD) morbidity and mortality (House 1974; Jenkins, 1971; Theorell and Rahe, 1972). Studies showing a correlation between workload and serum cholesterol levels (French and Caplan, 1972; Friedman, Rosenman and Carroll, 1958) also seem to suggest a CHD/workload relationship.

Recent evidence, however, has suggested that the amount of work does not seem to be as critical to health as the control the worker has over the work rate and related work processes. Karasek et al. (1979, 1982), for example, have used large scale data bases to examine the relationship between workload, work pace and degree of worker control. Their findings indicate that workers in jobs with higher workload and pacing demands, and lower control over these demands, have increased risk of coronary heart disease, higher blood pressure, and smoke more than employees in jobs without these characteristics.

Shift work is another job demand thought to have health and safety consequences. There is substantial converging evidence that night and rotating shift schedules, in particular, can lead to sleep disorders, gastrointestinal disorders, emotional disturbances, and increased risk of occupational injury (Rutenfranz, Colquhoun, Knauth and Ghata, 1977; Tasto, Colligan, Skjei and Polly, 1978; Smith, Colligan, Frockt and Tasto, 1979). The primary mechanism responsible for these effects appears to be disruption of biological rhythms resulting in physiological and biochemical disturbances. Shift work also has behavioral effects that can impact health, including altered sleeping patterns, increased alcohol and tobacco use, and altered eating habits (Rutenfranz, et al., 1977).

Organizational Factors. Numerous job stress studies have examined the psychological and physical effects of roles within work organizations. These studies were given original impetus by an investigation conducted in the early 1960s by Robert Kahn and his colleagues at the Institute for Social Research at the University of Michigan. In this nationwide survey, Kahn et al. (1964) found that men who experienced role ambiguity (i.e., lack of clarity about objectives associated with the work role, expectations concerning the work role and about the scope and responsibilities of the job) experienced low self-confidence, higher job related tension and lower job satisfaction. Likewise, workers who experienced role conflict (i.e., conflicting job demands) were found to experience more job related tension and to report less job satisfaction. A recent meta-analysis of 96 studies (Jackson and Schuler, 1985) has not only confirmed these relationships between role conflict, ambiguity and affective reactions, but has suggested that these role stressors are also related to absence and poor job performance. Role ambiguity and conflict have also been shown to be related to psychological responses such as increased heart rate and blood pressure (Caplan and Jones, 1975; French and Caplan, 1972; Ivancevich, Matteson and Preston, 1982).



Various management styles, such as the allowance of little or no participation in decision making, lack of effective consultation, restrictions on behavior, etc, are organizational features that also have been viewed as potentially stressful (see Beehr and Newman, 1978). Of these, lack of participation in decision making has received the most research attention. Early field studies demonstrated that greater participation in decision making led to greater job satisfaction, lower turnover, better supervisor-subordinate relationships, and increased productivity (Coch and French, 1948; French, Israel and Aas, 1960). Moreover, in a nationally representative sample of nearly 1,500 workers, nonparticipation at work was found to be significantly related not only to low self-esteem and low job satisfaction but to overall poor physical health, escapist drinking, depressed mood and absenteeism (Margolis, Kroes and Quinn, 1974).

Factors related to career development have also been linked to health consequences. These include overpromotion, underpromotion, status incongruence, lack of job security, fear of redundancy, obsolescence or early retirement (see Beehr and Newman, 1978). One of the most potent of these stressors appears to be ambiguity about one's job future. For instance, uncertainty about continued employment has been found to be related to low job satisfaction, low life satisfaction, low self esteem, escapist drinking and overall poor physical health (Margolis et al, 1974).

Relationships at work with one's colleagues, supervisors and subordinates have been identified as sources of job stress (see Davidson and Cooper, 1981; Beehr and Newman, 1978). For example, the most common sources of stress for a sample of 5,000 managers included inadequate support by supervisors, ineffective performance by supervisors, and conflict and ambiguity about what's expected (Pearse, 1977).

Physical Conditions. Adverse environmental conditions appear to be associated with health disorders in a synergistic way by exacerbating the overall job demands placed on employees, thus lowering worker tolerance to other stressors and decreasing worker motivation. Conditions like excessive noise, heat or cold, poor ventilation, inadequate lighting and ergonomic design deficiencies have been associated with employee physical and psychological health complaints and with attitudinal and behavioral problems (Caplan et al., 1975; Cooper and Marshall, 1976). It is also no coincidence that outbreaks of mass psychogenic illness typically occur in workplaces which employees view as physically uncomfortable (Colligan and Murphy, 1979).

## Moderating Factors

As alluded to earlier, there are a number of personal and situational characteristics that seem to lead to differences in the way individuals exposed to the same work context perceive and/or react to the situation. These "moderators" are depicted in Figure 1 in the blocks labeled "Individual Factors," "Non-Work Factors," and "Buffer Factors," and are discussed separately below.

Individual Factors. The most widely discussed personal characteristic contributing to stress at work has been the coronary prone Type A behavior pattern characterized by intense striving for achievement, competitiveness, time urgency, excessive drive and over commitment to vocation or profession. In the past decade alone, many investigators have reported the Type A pattern to be independently associated with coronary artery disease. There is also extensive evidence that Type A persons show more severe and widespread coronary arteriosclerosis on coronary arteriography (Cooper et al., 1981). While static measurements have shown no differences in heart rate and blood pressure between Type A's and their opposite Type B personality type, Type A's upon exposure to various laboratory stressors, have been shown to exhibit more pronounced cardiovascular responses (Dembroski, MacDougall, Shields, Pettito, Lushine, 1978; Lovallo and Pishkin, 1980). Such findings have suggested to a number of authors (e.g., Ivancevich and Matterson, 1984) that an interaction between various job stressors and type A characteristics may produce reactions which ultimately lead to heart disease.

The hardy personality style is another individual characteristic thought to mediate the stressor illness relationship (Kobasa, Maddi and Courington, 1981). Hardy persons are believed to possess various beliefs and tendencies that are very useful in coping with stressors. These include tendencies toward optimistic appraisals of events and decisive actions in coping (Kobasa, Maddi, and Puccetti, 1982; Kobasa, Maddi Pucetta and Zola, 1985). Hardy persons have been found to report less illness in the face of stressors in both a retrospective and prospective study of executives (see Kobasa et al, 1985).

Stage of career development, while little studied, may also affect the stressor illness relationship. Extensive work experience, for example, may moderate worker response to negative events at work (Wanous, 1973). Indeed, several studies (e.g., O'Reilly and Roberts, 1975) have shown a positive correlation between age and work satisfaction. This has been interpreted to indicate that worker expectations of what is to be derived from work activity decrease with experience in the working world. Conversely, however, older workers may be more vulnerable to certain physical and mental job demands.

### Non-Work Factors

Workers clearly do not leave their family and personal problems behind when they go to work nor do they typically forget job problems upon returning home. Nearly all models of job stress, in fact, acknowledge non-work factors and their potential interaction with work in affecting health outcomes. However, very few studies have attempted to examine the respective health effects of job and extra-organizational stressors (Bhagat, McQuaid, Lindholm, and Segovis, 1985). While some investigators have incorporated generic stressful life events scales into job stress surveys, these scales provide only rough indications of social, familial and financial stressors. It is quite clear that greater attention needs to be paid to these kind of factors. Interpersonal, marital, financial, and child-rearing stressors as well as other non-work situations can exacerbate existing job stressors to promote acute stress reactions. Alternatively, the absence of such extra-organizational problems may make a less than satisfactory job situation more tolerable (less stressful) and can impede the development of stress reactions.

### Buffer Factors

A number of factors are known to weaken the stressor-acute reaction link and, therefore, reduce the occurrence of ill-health outcomes. Such factors are generally referred to as buffers. One of the earliest buffer variables examined in job stress research was social support. House and Wells (1978) showed that workers who report high levels of social support have fewer health complaints than comparably stressed workers with low social support. The source of support also appears to be important. Social support from one's supervisor or spouse was found by House and Wells (1978) to be more effective than support from co-workers or from friends or relatives. Support was also found to buffer the effects of stress on some health conditions (e.g., neurosis and ulcers) more than on others (e.g., angina). More recent research (Thoits, 1982) has confirmed the protective role of social support on worker health.

Another potent buffer is coping. A great deal of literature on stress coping exists but little of this knowledge has been included in occupational stress/health formulations until recently. Lazarus and colleagues (Cohen and Lazarus, 1979; Folkman and Lazarus, 1980) have indicated that coping is not a trait or disposition but is a continuous, transactional process which is modified by experience within and between stressful episodes. Further, a specific coping strategy which can serve to alleviate stress in one situation may be maladaptive in other situations (Cohen and Lazarus, 1979).

Pearlin and Schooler (1978) believe that the coping responses people use are a function of the social and psychological resources at their disposal. Social supports and psychological resources (e.g., mastery

and self-esteem) are what people draw upon in developing coping strategies. Research has shown that these resources vary by sex, educational level, and income; such that men appear to have more psychological resources than women and use them to develop more effective coping responses. In the same way, the better educated and the more affluent possess more resources and a wider range of coping alternatives (Pearlin and Schooler, 1978).

What is more important, aside from what people actually do to cope with stress, is the relative effectiveness of coping responses. Pearlin and Schooler (1978) considered a coping response effective if it buffered the relationship between stressors and strains. The authors concluded that no single coping response was strikingly protective across life and work areas, but that having a larger and more varied coping repertoire was effective in reducing stressor/strain relationships. In this regard, the effectiveness of problem-focused vs. emotion-focused coping for buffering ill-health seemed to be a function of the controllability of the stressor, coping of any type being relatively ineffective in situations beyond the individual's control (Caplan, Naidu, and Tripathi, 1984; Felton, Revenson, and Hinrichsen, 1984; Fleishman, 1984; Krause and Stryker, 1984).

Particularly important in the present context was Pearlin and Schooler's finding that while various coping responses were effective in the areas of marriage, child-rearing, and household finances, coping was strikingly ineffective when applied to occupational problems. The authors suggested that the resistance of occupation to coping may be due to the impersonal nature of work and the lack of worker control over stressors.

Evidence from other recent studies suggests that some coping behaviors which workers use actually increase distress. Parasuraman and Cleek (1984) identified adaptive and maladaptive coping responses used in work settings. They found that adaptive coping responses (planning, organizing, and prioritizing assignments, enlisting the support of others) had no buffering effects on felt-stress or job satisfaction but were associated with elevated trait anxiety. Maladaptive coping (working harder, making unrealistic promises, avoiding supervision) contributed to felt stress and job organizational tenure, indicating that experience on the job did not necessarily lead to better stress coping skills (Dewe, Guest, and Williams, 1982).

It is clear from the foregoing that the coping responses which workers use may increase, decrease, or have no effect on stressor/health relationships. Those which increase or decrease stress reactions need to be factored into job stress assessment instruments to increase ecological validity and "fine tune" descriptions of stressor/health relationships. Coping behaviors which have no buffering effect provide insights into the types of stress reduction strategies which are likely to be successful.

## JOB STRESS REDUCTION

Despite the complexities in job stress research, the merits of both individual-oriented, and to a lesser extent, work environment-oriented approaches to reduce stress have been explored. Given the conceptual framework emphasizing the subjective element of stress presented earlier, it is not surprising to find that most stress reduction studies in the literature have focused on the individual rather than the organization and have used individual-oriented outcome measures to assess program success. Such studies have clearly supported the efficacy of various types of stress management training in reducing psychophysiological and self-report signs of stress (Murphy, 1984). These techniques, applied in work settings, have a distinctive preventive flavor with an emphasis on imparting training skills to symptom-free workers. Accordingly, stress management is considered a health promotion activity rather than a strategy to relieve stress problems in troubled workers. Stress management has an important place in job stress reduction efforts because it addresses the issue of individual differences in the perception of events as stressful and can be useful in reducing reactions to work and nonwork stressors that interact with individual characteristics to produce health consequences.

While studies of individual-centered stress management approaches have steadily increased over the past 10 years, efforts to reduce or eliminate the sources of stress in work settings remain relatively sparse in the published literature. Reasons for this discrepancy seem straightforward: individual-oriented strategies are easy to implement, can be evaluated in the short term, do not require disruptions in production schedules or organizational structure, and fit nicely with managements' view of stress as an individual-worker problem (Neale et al 1982). Individual strategies also ride the coattails of the expanding interest among employers in health promotion/disease prevention programs which focus exclusively on individual lifestyle/behavioral change to improve health (DHHS, 1979, 1980; Parkinson, 1982).

At the same time, organizational change approaches require an accurate, valid assessment of work factors which generate undue stress, and an extensive knowledge of the dynamics of change processes in social organizations (e.g., Alderfer, 1976) so that potentially undesirable outcomes can be minimized. At the same time, organizational change strategies can be expensive and disruptive interventions, making them less palatable to management. Nevertheless, job redesign and organizational change approaches focus on reducing or eliminating the sources of stress at work and, hence, are preferred solutions.

Organizational strategies which have potential for preventing or reducing stress include quality circles, which bring bench-level workers into the decision-making process, worker representation on health and safety committees, more extensive training programs for workers whose jobs are being altered by the introduction of new technology, alteration of communication channels within an organization, and creation of more psychologically humane evaluation systems to replace ones that are either archaic or ones that monitor employee performance in a Big Brother fashion (e.g., computer monitoring of keystrokes). These interventions, however, have not been subjected to rigorous scientific evaluation, perhaps owing to some of the problems mentioned earlier. Evaluation schemes for such interventions should include an element of cost/benefit in addition to assessments of worker satisfaction, job stressors, performance, absenteeism, and health status.

The foregoing sections have described a growing knowledge base on occupational stress and health. Though the area is complex, and much additional research is needed, it is quite clear that organizations can no longer afford to ignore the human and organizational costs of stress. Instead, it has become increasingly mandatory for organizations to understand and endeavor to deal with it.

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## CHAPTER 3

### A REVIEW OF ORGANIZATIONAL STRESS ASSESSMENT INSTRUMENTS

John W. Jones and David DuBois

Legal researchers are concluding that managers can no longer choose to recognize and deal with the sources and symptoms of stress on the job -- it has become a legal obligation (Ivancevich, Matteson, and Richards, 1985). Organizational stress surveys can be used to provide management with information on both the levels and sources of employee stress. Stress surveys that can be employed in organizational settings are reviewed in this chapter.

#### THE COST OF OCCUPATIONAL STRESS

Stress is a costly business expense, affecting both employee health and company profits. However, companies can reduce stress and its effects through comprehensive work site stress management programs.

Consider these stress facts gleaned from various safety and insurance industry research (Jones, 1985):

- o In 1982, the total cost of work-related accidents in the U.S. alone was \$32 billion.
- o The causes of about 75-85 percent of all industrial accidents are accident susceptibility factors (e.g., fatigue, poor concentration, inattentiveness).
- o Psychological or psychosomatic problems contribute to over 60 percent of long-term employee disability cases.
- o About 11 percent of all occupational disease claims are for workplace stress.

With regard to the last statistic, three forms of work stress claims have been delineated (National Council on Compensation Insurance, 1985). A physical-mental claim occurs when a physical injury results in a mental disability, such as a phobic fear of heights after falling from a scaffold and breaking a leg. Mental-physical claims happen if mental stress results in a physical injury, such as when constant deadline pressures, coupled with overwork, culminates in a heart attack. Lastly, mental-mental claims occur when mental stress causes mental disability. An example would be sexual harassment that leads an office worker to have anxiety attacks.

Legal suits for job-related stress likely will increase in the future because:

1. Research suggests a relationship between stress and injury/illness.
2. Many state workers' compensation laws specify compensation for injuries, both physical and mental, resulting from job stress.

3. More employees are prompted to file stress claims because they believe in the stress-loss connection and know that fellow employees have received workers' compensation for it.
4. Finally, lawyers, judges and physicians are becoming more familiar with this type of claim. It is more easily diagnosed and more often used to receive legal and monetary restitution.

Hence, it becomes imperative that companies begin to understand, assess, and remedy excessive levels of occupational stress.

But what is stress? By definition, stress is the adverse emotional and physical reactions employees have to any source of pressure in their environment. These stress reactions negatively affect personal health and organizational effectiveness and often create losses (see Table 3.1).

TABLE 3.1 THE PERSONAL AND ORGANIZATIONAL EFFECTS OF OCCUPATIONAL STRESSES

Personal

Alcohol abuse	Anxiety
Drug abuse	Psychosomatic diseases
Emotional instability	Eating disorders
Lack of self-control	Boredom
Fatigue	Mental illness
Marital problems	Suicide
Depression	Health breakdowns
Insomnia	(cardiovascular, etc.)
Insecurity	Irresponsibility
Frustration	Violence

Organizational

Accidents	Inflated health-care costs
Thefts	Unpreparedness
Reduced productivity	Lack of creativity
High turnover	Increased sick leave
Increased errors	Premature retirement
Absenteeism	Organizational breakdown
Disability payments	Disloyalty
Sabotage	Job dissatisfaction
Damage and waste	Poor decisions
Replacement costs	Antagonistic group action

Employees continually confront various pressures or "stressors." They experience stress if unable to effectively cope with such stressors as poor management, lack of job security, work overload, unclear communications, excessive deadline pressure, unrealistic expectations, insufficient pay, and uncertainty about job duties and responsibilities.

#### BREAKING THE DISTRESS CYCLE

The major goal of work site stress management programs is to help companies interrupt what is called the distress cycle. Diagram A illustrates how this damaging cycle evolves. Research by the St. Paul Insurance Company has shown that there are two basic approaches to breaking the distress cycle. One is to identify and to modify the stressors. The other is to increase an employee's ability to cope with stress. Both methods can be used individually or in combination.

For example, organizational stressors can be identified and corrected. Consider one production unit with a very high stress level, a high number of accidents, and low productivity. Results of an organizational stress survey showed that poorly defined job responsibilities caused stress in the unit members. After each person's job was analyzed and defined, production increased and accidents were reduced. The stress survey also revealed other stressors which needed controlling, including poor communications, undefined pay raise systems, and employee drug abuse (Jones, 1985).

The second way to break the distress cycle -- increasing the ability to cope -- consists of the more commonly known stress management techniques. These include physical fitness programs, relaxation techniques, assertiveness training, biofeedback, weight loss, drug and/or alcohol rehabilitation, and periodic physical examinations. These techniques are not intended to alter stressors, but to increase an individual's ability to cope with stressors in his/her environment.

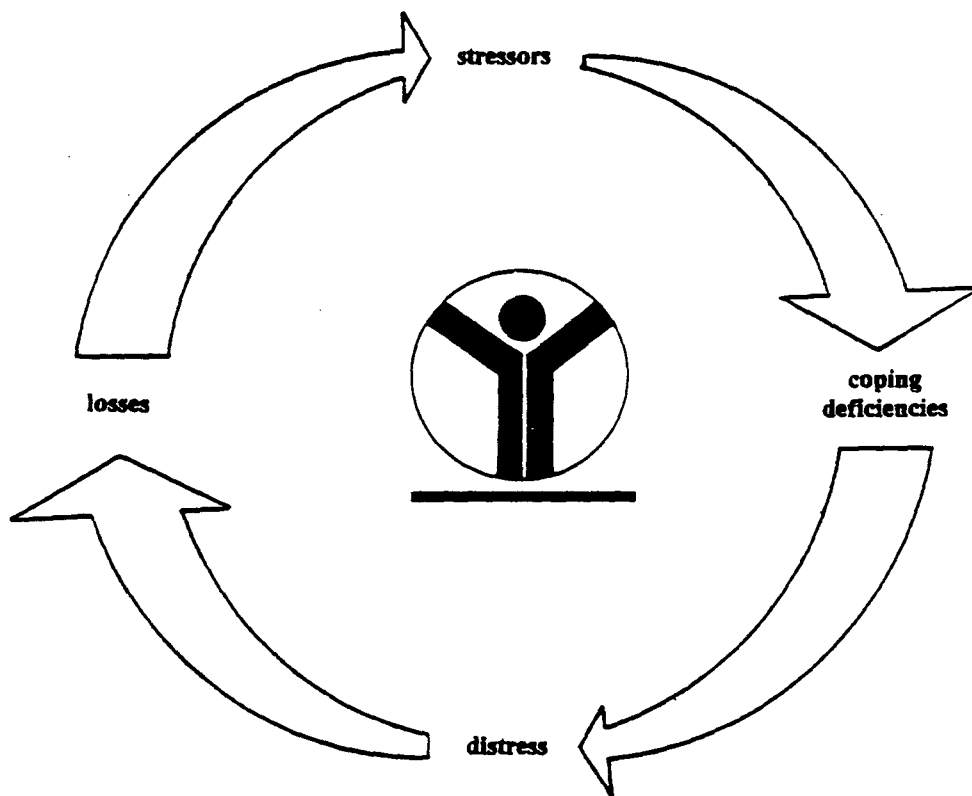
#### THE ASSESSMENT OF ORGANIZATIONAL STRESS

To better control stress-related losses in industry, companies must periodically use organizational stress surveys which assess: (1) Employees' physical, mental, and emotional reactions to a stressful work environment; (2) the corporate stressors which cause stressful, pressured work environments; and (3) the corporate, and employee, coping skills and resources that can serve as "stress buffers."

Research at The St. Paul Insurance Company (Burdick and Jones, 1985) indicates that companies are more likely to implement work site stress management programs once they learn, through an organizational stress assessment, that their employees are indeed experiencing exceptionally high levels of occupational stress. Ideally, the stress assessment

## The Distress Cycle

Employees are exposed to many stressors. Those who have coping deficiencies rather than coping skills become distressed. Chronic distress, in turn, leads to social and financial costs — accidents, injuries, turnover and poor productivity. But it doesn't stop there. These symptoms of distress become, themselves, stressors, and the distress cycle develops.



can pinpoint the overall level of company stress, levels of stress in selected work groups (e.g., departments, job types), and the major organizational stressors that are causing the employee stress.

The major purpose of this chapter is to review organizational stress assessment instruments that can be employed in business settings. The review is not intended to be comprehensive. Instead, this chapter focuses on a few key stress inventories that were specifically designed for work settings and that have ample evidence of validity. In addition, all of the instruments reviewed have been successfully tested in a wide variety of companies.

This review is geared toward practitioners who want to gain a better perspective on how to select, administer, score and interpret organizational stress surveys. Four different assessment tools are reviewed.

### I. HUMAN FACTORS INVENTORY (HFI)

The Human Factors Inventory (HFI) is a 162-item organizational climate survey (Jones, 1983; Jones and DuBois, 1985). The HFI is used by businesses to assess various forms of occupational stress.

The HFI has the following six scales: Job Stress, Job Dissatisfaction, Organizational Stress, Stressful Life Events, Life and Health Risks, and Accident Risks. Test-retest reliability coefficients (one-week interval) for these six scales are .91, .90, .89, .89, .88, and .87, respectively. Each of these scales is briefly described below. In addition, two speciality scales -- the Technostress Scale and the Distortion Scale -- are also briefly described below. Norms exist based on over 100,000 employees representing hundreds of different companies and job types.

Job Stress. This scale identifies the average level of job stress that employees are experiencing at an individual level. General signs of job stress include feelings of frustration, boredom, irritability, nervousness and "burn-out" at work. Physical signs of job stress include headaches, stomach upset, backaches, chest pains, chronic fatigue, and sleep difficulties. Employees who score in the higher risk ranges are also less productive, they have higher rates of illness and absenteeism, and they often think about leaving the company. Finally, they feel that work-related pressure contributes to tension in their family. Sample items include: "I experience too much pressure on my job."; "I have lost efficiency on my job."; and "I feel burned out on my job."

Job Dissatisfaction. This scale assesses how dissatisfied employees are with various aspects of their job. Dissatisfaction with the following areas is assessed: Job, pay, promotional opportunities, co-worker relationships and overall management



effectiveness. Sample items include: "I am very satisfied with my job."; "This company is well managed."; "I am paid adequately for what I do."; and "We have a good team relationship in my department."

Organizational Stress. This scale assesses employees' perceptions of organizational stress. This scale identifies whether departments have unacceptable levels of organizational tension. Some general signs of organizational stress that are measured by this scale include poor productivity, interpersonal conflicts, departmental tension, excessive absenteeism, accidents and mistakes, and a perception that employees are distressed. Employee dishonesty, waste and on-the-job alcohol and drug misuse are also assessed. Sample items include: "My department is understaffed."; "There is more absenteeism and tardiness in my department than usual."; and "Staff turnover is high in my department."

Stressful Life Changes. This scale measures the amount of stressful life changes that employees have experienced in the past 12 months. Examples of stressful life changes that are assessed include taking on debts; an illness, injury, or death of a loved one; and major changes in job duties at work. This scale provides a measure of personal stress. Most companies request a stress survey that can differentiate between job stress and personal stress.

Life and Health Risks. This scale measures lifestyles and health habits that increase the risk for unnecessary injuries, illnesses, and premature deaths among employees. Examples of such risks include lack of exercise and relaxation, unsafe driving practices, poor nutrition and weight control, smoking, alcohol abuse, and so on. Sample items include: "I get a thorough physical examination each year."; "I try to prevent work stress by exercising and participating in recreational activities."; and "I get approximately eight hours sleep at least four nights a week."

Accident Risks. This scale measures four human factors that contribute to accidents and errors. The four factors are: (1) An inability to cope with stress; (2) Poor safety attitudes; (3) A tendency to worry about job performance, and (4) An inability to manage time. Sample items include: "Are you always safety conscious?"; "Do you feel hurried or rushed to complete deadlines at work?"; and "Do you feel fatigued during the workday."

Technostress. Countless employees have claimed that working with Video Display Terminals (VDTs) is an adverse experience. Many employees are wary of the potential health hazards of VDTs. This wariness leads to unnecessary stress. This scale measures how much "technostress" is experienced by employees who work with

VDTs. Some specific signs of technostress include headaches from VDT use, fear of radiation exposure, eye irritation and fatigue, muscle aches and pains, and emotional discomfort and stress. (Employees who do not use VDTs are excluded from any analysis with this scale.) Sample items include: "Do you get headaches from VDT use?"; "Do your eyes become irritated and fatigued from VDT use?"; and "Does working on a VDT cause you any emotional discomfort or stress?"

Distortion. This scale identifies the percentage of employees who are truthful with their responses. It identifies the number of employees who attempt to "fake good" or "fake bad" on the Human Factors Inventory.

### Interpreting HFI Scale Scores

The HFI takes approximately 30 minutes to complete. It is given to all company employees. Participation is both anonymous and voluntary. The HFI survey results are then computer scored and compared to the national norm. An organizational "stress quotient" is computed for each company. This comparison allows companies to determine if their employees are above or below a national average in terms of their stress reactions and coping skills. The inventory also indicates in which jobs or departments employees are experiencing the most stress.

The major findings of the Human Factors Inventory are derived from analyzing the survey data on three levels: 1) Overall results for each scale for all company employees combined; 2) analyses by employee subgroups (e.g., job titles, departments, locations, demographic variables); and 3) response frequencies for individual items. HFI percentile scores ranging from 0 to 100 are plotted for each subscale. Higher scores mean greater risk. The following guidelines are used when interpreting all subscales:

#### Percentile Description Range

0 - 20%

Very Low Risk. The average employee is coping better than 80% or more of the employees represented in the norms. This is probably due to better coping skills and less exposure to stressful situations.

21 - 40%

Low Risk. The typical employee is coping better than 60 to 79% of the employees in the normative sample.

41 - 60%

Average Risk. The average employee is coping just as well as the average employee represented in the norms. The typical employee in this group is no worse or no better than the typical employee from the normative sample. That is, scores in this range mean that employees have both coping skills and coping deficiencies.

61 - 80%

High Risk. Scores in this range mean that there are opportunities to reduce stressors and improve coping skills. That is, the typical employee is coping worse than 61 to 80% of the normative sample employees. Interventions are needed for these employee groups.

81 - 100%

Very High Risk. Active interventions are definitely needed for these employee groups. The average employee is coping worse than 81 - 100% of the employees represented in the norms. This is probably due to poorer coping skills and more exposure to stressful situations.

In brief, work groups with percentile scores greater than 50 are experiencing above average levels of stress. Groups with percentile scores less than 50 are experiencing below average levels of stress. A score of 60 or more indicates critically higher levels of stress and should serve as a warning to companies that worksite stress management programs are definitely needed.

### Validity

A test or survey is valid when it predicts those behaviors and outcomes that it was designed to predict. A number of validation studies have been conducted with the HFI (Jones and DuBois, 1985). A selection of five of these are presented briefly below.

In one study, 150 employed college students completed the HFI and made anonymous admissions of accidents, injuries and illnesses. Results showed that higher scores on the HFI (higher scores mean more stress and poorer coping skills) significantly correlated ( $p < .05$ ) with higher rates of on-the-job accidents, minor injuries, major injuries, minor illnesses, major illnesses, and days of work missed due to injury and/or illness. Higher HFI scores were also associated with more frequent use of medical facilities. Finally, higher HFI scores were associated with poorer productivity and tendencies to look for a new job. This study was replicated with over 6,000 employees who represented hundreds of different job titles.

Forty-two employees who reported on-the-job injuries to an occupational nurse participated in another validity study. All employees worked for the same company. Reported injuries typically

fell into one of four categories: Falls and trips, lifting strains, lacerations, and miscellaneous (e.g., smashed finger, infection of unknown origin, hematoma from dropping cabinet on foot, etc.). All injuries required medical care and time off from work. All of these occupationally-injured employees completed the HFI to further test the hypothesis that employees who get injured at work experience more job stress and dissatisfaction than their co-workers.

Obtained results supported the hypothesis. Statistical analyses showed that the injured employees, on the average, experienced higher levels of job stress, job dissatisfaction, and organizational stress compared to a control group of over 1,000 co-workers ( $p < .01$ ). In addition, the injured employees encountered more stressful life changes during the past 12 months compared to the control group ( $p < .01$ ). These findings support the hypothesis that employee stress is related to more on-the-job accidents and injuries.

A second part of this study examined the stress levels of a group of workers who engage in a high level of wellness behaviors. From the theory of stress, it is expected that employees who engage in the regular use of stress management techniques and maintain healthy lifestyles (i.e., regular exercise, good nutrition, strong social support network, etc.) will be more resistant or hardy when exposed to normal or high levels of stressors.

To assess the sensitivity of the HFI to measure groups with high levels of wellness behaviors and expected low levels of distress, 80 practitioners of the Transcendental Meditation Program were surveyed with the HFI and compared both with the norm group and with the injured employees. As expected, the meditating group displayed significantly lower levels of job and organizational stress than either the norm group or the injured workers ( $p < .01$ ).

Also, their scores on the Accident Risks, Job Dissatisfaction, and Life and Health Risks scales were significantly lower than the other groups ( $p < .01$  in all cases). The scores on the Stressful Life Changes scale showed no significant differences, indicating that the level of life stressors were similar. The lower levels of stress reactivities measured by the Job and Organizational Stress scales can be presumed to be due to the increased level of stress coping skills rather than a lower level of stressors.

The relationship between HFI scores and levels of chronic back pain was assessed with 518 hospital employees in another validity study. Employees indicated how often they experience distressing backaches and pains. Back pain and injury is a leading cause of workers' compensation claims. Obtained results show that approximately 21% of all employees experience high rates of backaches and pains. Only 13% of employees reported that they "never" experienced back pain (see Table 3.2).

Table 3.2. Relationship Between HFI Scores and Chronic Back Pain.

<u>Pain Frequency</u>	<u>Sample Size</u>	<u>Percent of Total</u>
Never	69	13.3%
Rarely	181	34.9%
Sometimes	161	31.1%
Often	83	16.0%
Always	24	4.6%
<b>TOTAL</b>	<b>518</b>	<b>100.0%</b>

The relationship of HFI job stress scores to frequency of back pain is presented in Table 3.2. A very strong relationship between stress and backpain is documented. That is, employees who report higher levels of job stress also report significantly more back pain. In fact, the employees (N = 24) who report that they "always" experience back pain also suffer from critically high levels of job stress (i.e., Job Stress = 90th percentile).

Finally, the HFI was administered in 17 hospitals. Stress scores were compared to a number of hospital loss indices. Statistically significant results ( $p < .05$  in all cases) showed that hospital departments that had higher stress levels had higher rates of turnover, employee injuries, worker's compensation claims, and risk for medical malpractice compared to the hospital departments with lower stress. In addition, a very strong relationship was obtained between HFI stress scores and frequency of back pain, thus replicating Study Four.

The results of these validity studies indicate that companies that use the HFI to assess corporate stress can be assured that higher HFI scores indicate a higher risk for loss due to accidents, injuries, illnesses, medical claims, poor productivity, turnover, and acts of negligence. Stress management training, at both the level of the individual employee and the organization, should lead to lower rates of stress-related accidents and losses.

#### Case Study

This case study describes how the HFI was used to control losses in the hospital industry. Approximately 1,500 employees from a southeastern hospital anonymously completed the HFI on company time. These employees represented over 40 hospital departments. Analyses revealed that three clinical medicine departments (e.g., surgical nursing, anesthesia, and pharmacy) exhibited critically high levels of stress on the HFI Job Stress, Job Dissatisfaction, and Organizational Stress scales. Analysis of these departments' insurance loss statistics revealed that a number of malpractice claims ranging from

\$50,000 to over \$100,000 had recently been filed. Item analyses of the HFI stress scales helped to identify a number of organizational stressors (e.g., poor communications, ineffective management, understaffing) that the hospital administration was willing to correct now that a connection between high departmental stress and risk for medical malpractice was established. Moreover, the hospital administrators admitted that they were "suspicious" about these high risk departments, yet they did not know where to begin to remedy the situation. Administration was now receptive to a number of different work site stress management programs.

Another finding showed that employees in the general services department at the hospital (i.e., housekeeping, laundry, maintenance) had extremely high personal stress scores, as measured by the HFI Stressful Life Changes scale. This same department also had nearly \$100,000 in workers' compensation losses for the year preceding the stress assessment. This finding prompted the hospital to implement an Employee Assistance Program (EAP) that provides opportunities for professional counseling to chronically distressed employees and their families. This case study documents how the HFI can be used in a hospital setting to control losses. A summary of some of the other ways in which the HFI has been used in industry is provided below:

1. **Focus Efforts.** Employee groups at greatest risk of having stress-related accidents, injuries, or illnesses are identified. Some possible solutions to their situation are provided. Companies can then direct their training and development dollars to where the need is greatest.
2. **Pinpoint Strengths and Weaknesses.** Companies get a clear picture of how well the employees and managers are coping with stress compared to a national norm group. Companies can determine whether certain jobs or departments experience more or less stress than others. They can see if important human factors, such as job stress and employee wellness, cause their employees to be more susceptible to accidents, illness, poor productivity, and premature death.
3. **Create Awareness.** Just by administering the HFI, employees feel management is interested in improving the quality of their work life. In turn, employees become more motivated to manage stress and seek wellness in their lives.
4. **Employee Involvement.** The HFI opens up an invaluable communication channel between all levels of employees and management. Such employee involvement leads to improved morale, especially when employees see that their input helped to facilitate the implementation of work site stress management training programs.

5. Evaluate Progress. Results presented in one year's HFI profile can be compared with the results of future employee profiles to develop a clear measurement of progress. Study after study indicates that a reduction in employee and corporate stress, followed by an increase in both job satisfaction and employee wellness, should lead to a decrease in the following areas: Medical claims and accidents, illness, turnover and absenteeism, theft, sabotage, and poor productivity. Such decreases should be reflected in improved employee morale, better organizational efficiency, and higher corporate gains.
6. Prevention. Finally, the HFI can be used to identify potential stress-related loss areas before they cause any significant level of loss.

## II. WORK ENVIRONMENT SCALE (WES)

Dr. Rudolf Moos developed the Work Environment Scale in order to assess the quality of worklife and stress levels in many types of work units. The WES is described in depth elsewhere (e.g., Moos, 1981). Some key features of this organizational climate survey are described below.

The standard WES consists of 90 items that make up 10 subscales. Normative data have been collected for over 1,400 employees from general work groups and over 1,600 employees from a variety of health care work groups. Test-retest reliability coefficients (one month interval) are all in an acceptable range, varying from a low of .69 to a high of .83, depending on the subscale.

### WES Subscales

The 10 WES subscales assess 3 underlying dimensions of organizational functioning: The Relationships dimension, the Personal Growth dimension, and the System Maintenance and System Change dimensions. The subscales that comprise each dimension are described in Table 3.3.

Inspection of Table 3.3 reveals that the WES subscales can be used to assess organizational stress levels and major organizational stressors. For example, the Work Pressure subscale assesses the experience of workplace stress and tension. Examples of items on this subscale include: "There is constant pressure to keep working."; "People cannot afford to relax."; "It is very hard to keep up with your work load."; "There always seems to be an urgency about everything." The Involvement subscale is also an excellent measure of

TABLE 3.3.--WES Subscales and Dimensions Descriptions

RELATIONSHIP DIMENSIONS

1. Involvement - the extent to which employees are concerned about and committed to their jobs
2. Peer Cohesion - the extent to which employees are friendly and supportive of one another
3. Supervisor Support - the extent to which management is supportive of employees and encourages employees to be supportive of one another

PERSONAL GROWTH DIMENSIONS

4. Autonomy - the extent to which employees are encouraged to be self-sufficient and to make their own decisions.
5. Task Orientation - the degree of emphasis on good planning, efficiency, and getting the job done.
6. Work Pressure - the degree to which the press of work and time urgency dominate the job milieu

SYSTEM MAINTENANCE AND SYSTEM CHANGE DIMENSIONS

7. Clarity - the extent to which employees know what to expect in their daily routine and how explicitly rules and policies are communicated
8. Control - the extent to which management uses rules and pressures to keep employees under control
9. Innovation - the degree of emphasis on variety, change, and new approaches
10. Physical Comfort - the extent to which the physical surroundings contribute to a pleasant work environment.



employee stress. This subscale determines if employees are concerned about and committed to their jobs (low stress) or if workers are apathetic about and uncommitted to their jobs (high stress). Examples of items on this subscale include: "There's not much group spirit; A lot of people seem to be just putting in time; It's hard to get people to do any extra work; Few people ever volunteer."

The WES also can be used to assess organizational stressors and stress buffers. For example, management can be considered a stress buffer if favorable scores are obtained on the Supervisor Support subscale, and as a stressor if unfavorable scores are obtained on this subscale. Similar interpretations can be made with the Peer Cohesion, Task Orientation, Clarity, Control, and Physical Comfort subscales.

### Validity

Moos (1981) reviews a number of validity studies conducted on the WES. Holahan and Moos (1981 a, b) found that a number of WES subscales were related to complaints of depression and psychosomatic symptoms in a representative sample of men and women workers. Brady, Kinnaid, and Friedrich (1980) found a relationship between perceived work environment, as measured by the WES, and job satisfaction among staff members of a mental health center. More specifically, employees who saw their work settings as more oriented toward involvement, cohesion, support, autonomy, and innovation showed greater satisfaction with their jobs.

Wetzel (1976, 1978) found that WES scores were associated with clinical measures of depression. Moos (1981) reviewed a number of studies (e.g., Bromet and Moos, 1977) that related WES scores to recovery rates among working alcoholics. Relapsed alcoholics had lower scores (i.e., more stress) on both the Work Pressure and the Physical Comfort subscales than the recovered patients.

### Case Study

There are a number of practical applications for the WES as described by Moos (1981). A major use is to compare various subgroups of employees in order to assess their stress levels and determine some of the possible sources of their stress.

In this case study, the WES profile of 35 staff members in a residential care setting for older people (Work Group A) was compared to the profile of 42 staff members in a community mental health center (Work Group B). Work Group A was known to be relatively satisfied with their jobs, as evidenced by turnover rates that were much lower than that of other long-term care settings. Work Group B was known to have a morale problem.

Analysis of WES profiles revealed that Work Group A differed from Work Group B on a number of different dimensions. Work Group A, the low stress staff, felt committed to their jobs, were friendly and supportive of one another, and thought that the facility management was supportive and helpful. Group A staff felt that there was a strong emphasis on good planning and efficiency and little work pressure. The Group A staff reported that they knew what to expect in their daily routine and that rules and policies were clearly communicated. Finally, this staff perceived a better than average degree of autonomy and self-sufficiency in their jobs, and they reported that their facility was above average in physical attractiveness and convenience.

Conversely, the staff members in Work Group B perceived a significantly different work environment as revealed by the WES. They reported low involvement, poor communications, and a lack of peer cohesion and supervisor support. This staff perceived an emphasis on autonomy and self-sufficiency, yet Work Pressure scores revealed excessive pressure to keep up with an ever-increasing workload. Furthermore, the staff perceived their workplace as being poorly organized and inefficient, and they were unclear about expectations, rules, and procedures. Comparing and contrasting the WES profiles in this case study indicates that improving the work environment of Work Group B may be an effective first step toward improving employee morale.

### III. MASLACH BURNOUT INVENTORY (MBI)

The Maslach Burnout Inventory (MBI) measures staff "burnout," a syndrome of emotional exhaustion and cynicism that occurs frequently among chronically distressed "people workers" (Maslach, 1982). Hence, the MBI is appropriate for use with police officers, counselors, teachers, nurses, social workers, psychiatrists, psychologists, attorneys, physicians, and agency administrators. The MBI is thoroughly described elsewhere (e.g., Maslach and Jackson, 1981).

The MBI consists of three regular subscales and a fourth optional subscale. The four subscales are:

1. The 9-item Emotional Exhaustion subscale (e.g., "I feel emotionally drained from my work.");
2. The 5-item Depersonalization subscale (e.g., "I feel I treat some recipients as if they were impersonal 'objects'.");
3. The 8-item Personal Accomplishment subscale (e.g., "I feel I'm positively influencing other people's lives through my work.");
4. The 3-item, optional, Personal Involvement subscale (e.g., "I feel I'm personally involved with my recipients' problems.")

These four subscales are scored separately. They have been proven highly reliable and have been validated against numerous criteria

under a variety of validation strategies (Maslach and Jackson, 1981). For instance, Barad (1979) found that larger caseloads were significantly correlated with more intense feeling of burnout among Social Security employees.

#### Case Studies

The MBI was administered to 130 police families in order to better understand the impact of job stress on family life (Maslach and Jackson, 1979). Both police officers and their spouses completed the MBI. Analyses showed that high burnout scores were associated with more domestic strain. The ability to link job stress to marital problems provided the justification to implement a variety of work site stress management programs.

The MBI was also given to 83 child care workers in order to understand some of the sources of job stress (Maslach and Pines, 1977). Results showed that higher burnout scores were related to higher staff-child ratios and longer hours of direct contact with children. Conversely, lower burnout scores were associated with the use of relaxation breaks, regular staff meetings, and good team relationships. Hence, the MBI was used to identify major stressors and stress "buffers," respectively. Corrective steps were then taken to eliminate the organizational stressors.

#### IV. ORGANIZATIONAL MANAGEMENT SURVEY (OMS)

The Organizational Management Survey (OMS) is a 43-item instrument designed to identify a variety of organizational stressors in the workplace (Jones, 1984). The OMS is used by companies to identify the most prevalent organizational stressors that exist in a work group. Management can use the OMS in order to reduce or eliminate stressful job elements. Unlike the three previous stress surveys, the OMS yields item scores, not scale scores.

The OMS is typically not given to all employees within a work organization. Organizational stress surveys like the HFI, WES, and MBI are given first. These comprehensive measures of occupational stress can then be used to identify highly stressed work groups within companies. The OMS can then be used to identify the exact type of organizational stressors that are operative within the distressed work groups. An example of this strategy is presented in the following case study.

#### Case Study

The HFI was administered within a large hospital to over 800 employees representing approximately 30 departments. The HFI scores identified the Surgical Nursing Department as being one of the most stressed clinical medicine departments in the hospital. The OMS was given to

this nursing group in order to get a finer understanding of the organizational stressors that were impacting this group.

Eighteen nurses completed the OMS. The following stressors were identified: (1) Nurses were overworked and responsible for too many tasks; (2) poor communication existed between this work group and the other work units in the hospital; (3) nurses were chronically worried about job security; (4) unsafe equipment was being used; and (5) management talked down to employees, failed to give sufficient feedback, and did not compliment employees who did their jobs well. The data from the OMS supported the initial results from the HFI. It was also discovered that this high risk nursing department was engaging in a number of acts of negligence within the hospital that could eventually lead to a medical malpractice loss. Hospital administration studied the OMS results and quickly set out to correct the organizational stressors that were identified.

#### V. INDIRECT MEASURES

Some companies might not have access to organizational stress surveys for a number of reasons, one being financial. For these companies, there are a number of indirect measures of stress that can be used to identify high risk work groups.

Insurance claims data are often related to organizational stress (Jones and DuBois, 1985). Companies can analyze workers' compensation costs, medical costs, and the frequency and severity of accidents in order to determine if there are more losses than usual or more losses compared to similar types of companies. Other indirect measures include turnover and productivity data. Ideally, this data can be analyzed across time and by different work groups in order to identify an aberrant pattern of losses that can be linked back to job stress. Corrective actions could then be taken.

#### CONCLUSION

This chapter described a number of instruments that can be used to assess organizational stress. These instruments are cost-efficient, brief, and can be used in nearly any type of work setting. They can be administered and scored by nonprofessional personnel, who, with a bit of training, can also deliver basic interpretive information to key decision makers within a company.

Other stress inventories like the Stress Map (Jaffe and Scott, 1985), the Stress Audit (Miller and Smith, 1983) and the Stress Management Questionnaire (Peterson and Lawrence, 1983) exist, but too little validity data has accumulated to warrant detailed descriptions in this chapter. By the same token, inventories like the Job Descriptive Index (Smith, Kendall, and Hulin, 1969) have a proven track record,

yet their focus is on employee satisfaction, not organizational stress. Still other instruments, like the ones developed by the Institute for Social Research at the University of Michigan (Caplan, Cobb, French, Van Harrison, and Pinneau, 1975) and used in many studies of occupational stress, do not lend themselves to use by those unfamiliar with psychometric theory.

The purpose of this chapter was to describe a few key stress inventories that are valid and have a history of successful business applications. Readers must be warned that accurately assessing employees' stress reactions and organizational stressors is the first step in controlling stress-related losses. The critical step is the implementation of a comprehensive work site stress management program to control or actually prevent stress-related losses. Such a program should teach management how to correct organizational stressors, and employees how to improve their stress coping skills.

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## PART II

### STRESS MANAGEMENT PROGRAMS

Part II describes various aspects of stress management from the design of programs, to the creation and maintenance of such programs, and the measurement and evaluation of their effectiveness.

Chapter 4 contains a review and evaluation of stress management programs based on published literature and direct contacts with providers. Drs. Rosch and Pellitier note that such programs have been broadly defined to include a range of activities from lectures, symposia, and workshops lasting a few hours to in-depth training sessions that may run several weeks. A variety of techniques have been used including biofeedback, muscle relaxation, meditation, and assorted cognitive strategies. These techniques have been helpful in reducing individual levels of stress, but training schemes and evaluation protocols have not been standardized sufficiently to allow for accurate comparison among techniques. Rosch and Pellitier note the need to accurately assess stressors in the work environment and ultimately to devise strategies that remove or alter work stressors.

In Chapter 5, Dr. Adams presents a context for understanding worksite stress management. He describes characteristics of an "ideal" program in terms of conceptualizing, planning, setting goals, developing system support, and acquiring resources. Dr. Adams argues that comprehensive stress management must focus on both the individual and the organization to have its greatest impact. He also suggests common errors to avoid, program maintenance and evaluation, and the issue of referring workers to outside agencies for treatment.

Drs. Stainbrook and Green tackle the difficult and often neglected topic of program evaluation in Chapter 6. They provide a model for planning and evaluating worksite stress management training (and other health promotion programs) that is tied to the 1990 Health Objectives for the Nation. They also discuss levels of evaluation research, types of evaluation designs, selection of outcome measures, and reliability/validity issues. The chapter ends with a discussion of confidentiality and informed consent in worksite evaluation research.

Chapter 7 contains a description of stress management from the perspective of a practitioner. Mr. Martin discusses current practices in the field and identifies some underlying questions about stress management. Next, he describes activities in developing a stress program for the Graphic Arts International Union. Using client-driven strategies in training workshops, he identifies and proposes solutions to stress problems. The process-oriented nature of the effort and the content of the workshops are described in detail. Mr. Martin concludes by offering ideas to improve the content and delivery of stress management training.



## CHAPTER 4

### DESIGNING WORKSITE STRESS MANAGEMENT PROGRAMS

Paul J. Rosch and Kenneth R. Pelletier

Increased interest in stress management training programs delivered in the workplace has accelerated because of:

- o Recognition that job stress represents a significant and growing health problem as well as a mounting major expense for American industry.
- o Increasing understanding of the mechanisms of actions that link stress with various illness syndromes and somatic complaints.
- o Improved methodologies for identifying and evaluating stress in the workplace.
- o Improved implementation and validation of various stress reduction techniques.
- ô Evidence that stress management training programs are not only cost effective for corporations but also increase employee satisfaction and relationships with management, and improve quality of life in the workplace.

Health care costs in 1984 consumed almost 11% of the gross national product(American Medical News, 1985). Heart disease, cancer, strokes, and accidents are major contributors and are increasingly being linked to stressful lifestyles and behaviors or inappropriate coping responses to stress. Job stress has been estimated to cost American industry \$150 billion annually as assessed by absenteeism, diminished productivity, compensation claims, health insurance and direct medical expenses (Manuso, 1984). Put into perspective, that's more than 15 times the price tag for all strikes combined. Over 500 million work days are lost each year due to illness or disability, 93 million because of back problems, and 26 million are attributed to cardiovascular complaints associated with coronary heart disease and hypertension. The Metropolitan Life Insurance Company in 1984 indicated that an average of one million workers are absent on any given work day largely due to stress related disorders. Some estimates suggest that up to 25% of payroll expenses may be health related. The Xerox Corporation estimates that it costs approximately one to one and a half million dollars to replace a top executive and \$200,000-\$500,000 for senior managers at lower echelons (Rosch, 1984a). In addition to the major illness categories cited, a variety of other stress related behaviors also take their toll. Alcoholic employees and smokers exhibit twice as much absenteeism. A recent American Association of Family Physicians' study of six occupational groups confirmed that job

stress was considered to be the greatest factor leading to adverse health habits (American Association of Family Physicians, 1979).

Surveys suggest that 75-90% of visits to primary care physicians are due to stress-related problems such as backache, headache, insomnia, anxiety, depression, chest pain, hypertension, gastrointestinal, and dermatologic complaints, etc. (Stroebel, 1982). The ability of stress to cause emotional and somatic symptoms or contribute to various disease syndromes has long been appreciated but mechanisms of action have only recently begun to be clarified. A pertinent example is the stressful Type A coronary prone behavior pattern now acknowledged to be as predictive as any other known risk factor for coronary heart disease (Coronary-Prone Behavior Review Panel, 1981). Furthermore, reducing coronary prone behavior currently represents the most successful strategy for preventing recurrent heart attacks (Friedman, et al., 1984). The role of stress in hypertension is attested to by the latest National Heart, Lung, and Blood Institute's recommendations for the treatment of hypertension (Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure, 1984). These new guidelines urge that non-pharmacologic measures be employed as the initial treatment for hypertension or be instituted as adjuvant measures in any therapeutic regimen. While weight reduction and salt restriction fall into this category, their efficacy is rather limited. To a considerable extent therefore, these new recommendations really reflect a growing acknowledgement of the importance of stress and efficacy of stress reduction strategies such as meditation, progressive muscular relaxation, or specific biofeedback techniques in treating hypertension. Clearly, industry has also shown great interest in this approach. A recent survey of 160 corporations indicated "stress management" programs to be the first priority (Pelletier, 1984). There were four times as many projects in this category as the next largest segments, physical fitness, and non-drug treatment of hypertension. At the present time a three year program is underway between the University of California School of Medicine, Bank of America, and several major corporations in California to develop and evaluate behavioral approaches to reduce stress and hypertension (Pelletier, 1983).

Anecdotal reports supported by preliminary research data implicate psychosocial stress as an important factor in the development and course of various malignancies as well as infections ranging from the common cold to herpes. Verification of the validity of such relationships has now come from the rapidly emerging field of psychoneuroimmunology (Ader, 1981), clearly confirming the ability of stress to reduce immune system defenses against cancer, as well as bacterial and viral infections. Increased gastrointestinal, secretory and motility patterns in response to stress allow insight into the pathogenesis of conditions such as peptic ulcer and colitis characterized by such abnormalities. Similarly, the facilitative effects of stress on a variety of allergic phenomena that affect the

skin and lung have assisted us in understanding the role of emotions in dermatologic, allergic, chronic pulmonary obstructive disease and asthma. Further understanding of the nature of stressful stimuli that can provoke such responses increasingly implicates work-related problems as a potent factor.

Of particular interest has been recent research linking stressful working conditions with an increased incidence of coronary heart disease in certain occupational groups (Karasek, et al., 1981). Common denominators in such situations appear to be lack of control, increased responsibility without commensurate authority, and inability to express emotions in the workplace (Karasek, 1979). Many occupations that fall into this category primarily involve females. More and more women also are subjected to further stress because of increasing migration into a male dominated work force that does not fulfill the promise of the Equal Rights amendment or the women's liberation movement. This appears to be of particular importance since certain subsets of working females seem to be exhibiting more and more male Type A coronary prone behavior and a concomitant substantial increase in heart attacks or are in occupations that have high demand and low control. (Haynes and Lacroix, 1985). One recent study at Stanford University indicated that four times as many women MBAs than male controls seek psychological counselling and have more frequent functional stress related complaints (San Francisco Examiner, 1985).

Conversely, it appears likely that "positive" stressful stimuli and emotions confer health enhancement benefits. The availability of strong social support networks, pride of accomplishment, a sense of being in control, enjoying what you are doing, being able to get things "off your chest" all seem to fall into this category (Kobasa and Maddi, 1979). Such observations also have relevance for job stress reduction program goals.

Even if we were to agree that stress and particularly stress at work can cause significant illness, is it possible to develop techniques to identify or quantify it to enable us to predict and hopefully prevent such harmful consequences? While current methodologies are admittedly crude, the answer would appear to be a resounding yes. Perhaps the most well known and popular stress appraisal instrument is the Holmes-Rahe Social Readjustment Rating Scale (Holmes and Rahe, 1967). This technique which has undergone several modifications, rates some 43 life change events in order of magnitude ranging from loss of a spouse at the top with a value of 100 to getting a traffic ticket at the bottom with a score of 11. By merely totalling the score of items experienced in the preceding 6 to 12 months, it is possible to predict with some accuracy the likelihood of future illness and to some extent its severity. As indicated previously, identification and measurement of stressful Type A coronary prone behavior has also been found to be significantly predictive for the subsequent development of heart

attacks (Rosenman, et al., 1964, 1970). The relationship of such "male" type behavior is best assessed by a standardized and structured personal interview conducted by trained personnel (Rosenman, 1978). This requirement makes large scale surveys time consuming and expensive. As a consequence, a variety of questionnaires such as the Jenkins Activity Survey (Jenkins, 1967) and the Bortner Rating Scale (Bortner, 1969) have often been used to uncover coronary prone behavior to improve cost effectiveness and can be used in the industrial setting for screening.

Finally, it seems quite apparent that the nature of stress in modern society can result from not only major life change events or exaggerated and inappropriate behavioral syndromes but also a host of minor irritating hassles that occur repeatedly on a daily basis. Examples are getting stuck in a traffic jam on the way to or from work, arguments with co-workers, customers, relatives, friends, etc. - or even a broken shoelace. These can also be measured by means of a "Hassle Index" (Kanner, et al., 1981) which can also forecast adverse health consequences. The amazing thing is that despite the crudity of all these approaches, the Holmes-Rahe Scale, Type A coronary prone behavior evaluation, and the Hassle Index all seem able to forecast with some accuracy the development of subsequent illness. The 467 item computer scored Stress Vector Analysis attempts to incorporate and correlate information obtained from these and other stress measuring scales to provide a profile of stress that displays its relative sources of origin and mechanisms of expression (Staats, 1982). Further developments would appear to offer greater promise by refining combinations of such test approaches or by measuring psychophysiologic responses to standardized emotional challenges. Proof of the efficacy of stress management programs is difficult to obtain. There are a variety of reasons for this. A major problem in gathering information is that stress reduction efforts are often components of a larger employee assistance program that includes or emphasizes such activities as jogging, aerobic exercise, counseling on nutrition, alcoholism, substance abuse, or family problems. While such ancillary services also may come under the general heading of stress reduction measures, it is difficult to dissect out the specific contribution of a stress reduction intervention, per se. Meditation, progressive muscular relaxation, biofeedback, assertiveness training, behavioral modification and other stress reduction strategies may provide benefits but they cannot be isolated and identified as such. In addition, relatively few stress reduction programs have been constructed so as to permit adequate evaluation of efficacy. Criteria cited are often diminished absenteeism, improved productivity, improved relations or better quality of life in the workplace. However, these are usually influenced by other confounding factors or by virtue of their self report nature are not susceptible to scientific scrutiny. Nevertheless after an extensive analysis of stress programs in 1984, Green and his colleagues at the Center for Health Promotion Research and Development at the University of Texas

concluded that "despite methodological problems inherent in some of the previous evaluations, the data suggest that stress reduction programs at the worksite are effective in reducing both physiological and psychological indications of stress" (McLeroy, Green, Mullen and Foshee, 1984). They also emphasized that stress management programs must address both individual and collective stress management techniques, as well as modifying the stressful aspects of the work environment including business policies and corporate culture.

There are numerous anecdotal reports that suggest benefits. Several years ago, the PA Medical Corporation claimed a 14% decline in absenteeism due to their stress reduction program (Everly and Girdano, 1980). Kenecott Copper credited a whopping 75% decrease in "sickness and accident costs" to their stress reduction efforts (Egdahl and Walsh, 1980). At Transco, much of the company's profit rise was considered to be a direct consequence of stress reduction programs (Everly and Girdano, 1980). Such enthusiastic claims have naturally spurred other corporations on to investigate the desirability of introducing or adding stress reduction programs as an additional employee benefit.

While our purpose here is to review and evaluate formal stress reduction programs per se, it is perhaps more practical to study efficacy within the context of broader employee assistance programs. Many such efforts really represent stress reduction techniques although they fall under other headings such as exercise, counselling on alcoholism, and substance abuse, marital problems, and diet, all of which have important stress related implications. The mere establishment of an employee assistance program may in itself have important stress reduction benefits since it provides pertinent resources for the worker, as well as tangible evidence of management's interest and dedication to personal welfare. One study suggests that 10% of all employees have significant serious personal problems (Pelletier, 1984), while another indicates that employee assistance programs, by improving or resolving such difficulties, have achieved an average 80% rehabilitation rate among participants (Berry, 1981). In terms of over-all employee assistance programs which do not necessarily employ specific stress reduction strategies cited previously, there appears to be little question of benefit to all parties concerned. Kimberly Clark reported a 70% reduction in on the job accidents with their employee assistance program (Dedmon, 1980). At General Motors, there was a 40% decrease in lost time and a 60% decrease in sickness and accident benefit payments. On the job accidents decreased by 50% and so did grievances. The cost effectiveness of each dollar invested was significant with at least a 3-1 return (Stessin, 1977). Equitable Life Assurance Society estimated \$ 5.52 (Manuso, 1984) and Kenecott Copper \$6.00 (Berry, 1981) saved for every dollar spent on their programs. Other less quantifiable benefits were also cited. The Chief Executive officer of Tenneco, which purports to have the "Cadillac" of corporate wellness

programs, cited improved morale, better quality of life, greater inducement for recruiting, less employee turnover, and better employee-management relationships as additional benefits. Johnson & Johnson's wellness program "Live For Life" far exceeded predicted and hoped for cost savings and also created a greater "sense of community" among the employees as well as between the company and its employees (Brown, 1981).

#### CAUSES AND NATURE OF STRESS AT THE WORKSITE

Job stress can have many roots and causes. Some of these are environmental and arise from annoying physical problems at work such as crowding, noise and air pollution, and possible exposure to potentially hazardous substances. Others may relate to the nature of the occupation, The common denominator here is often being placed in a situation which demands considerable responsibility without commensurate authority or decision making capability or not being able to express your true feelings and get things off your chest. Dull, dead-end, assembly line type of work, or having a job which does not permit full use of one's talents and potential or where constant deadlines do not permit enough time to get the job done to one's satisfaction may prove particularly stressful for large groups of individuals in middle management positions.

Stress at work can also be due to the individual's own personality, a good example being the executive with Type A behavior who is continually frustrated by self imposed unrealistic goals that are inflexibly pursued. Such individuals may themselves be vectors of stress at work as their aggressive and sometimes hostile behavior produces adverse repercussions on co-workers and customers. More often, it is not the individual or the job per se but rather a mismatch between the two in terms of basic goals, needs, and values that causes continuing problems. Stress at work may also have its real roots outside the workplace because of family or financial problems which lead to alcoholism, depression, or anxiety that affect activities and performance on the job. Some common factors that contribute to job stress are (Rosch, 1984b):

- o Inadequate time to complete the job to one's satisfaction.
- o Lack of clear job description or chain of command.
- o Absence of recognition or reward for good job performance.
- o Inability or lack of opportunity to voice complaints.
- o Lots of responsibilities but little authority or decision-making capability.
- o Inability to work with superiors, co-workers, or subordinates because of basic differences in goals and values.
- o Lack of control or pride over the finished product.
- o Job insecurity due to pressures from within or possibility of takeover or merger.
- o Prejudice and bigotry due to age, sex, race, or religion.

- o Unpleasant environmental conditions because of smoking, crowding, noise and air pollution, exposure to toxic chemicals or carcinogens, or commuting difficulties.
- o Concerns related to responsibility for employees.
- o Not being able to utilize personal talents or abilities effectively or to full potential.
- o The FUD factor - fear, uncertainty, doubt.

Most formal stress reduction programs concentrate on using various methods to reduce physiologic and somatic responses to stress by the use of meditation, progressive muscular relaxation, biofeedback, yoga, exercise, or similar interventions and combinations. Obviously, the ability to identify sources of stress and eliminate or mitigate them, provides a more effective approach to the problem. Coordinating such efforts with instruction in behavioral modification providing coping skills, assertiveness training or taking advantage of other aspects of an overall employee assistance program that deals with other psychosocial problems would appear to represent the most effective and comprehensive approach. It is important to keep each of these multifaceted aspects in mind when attempting to construct or evaluate stress management training programs for industry. As noted previously, many stress reduction efforts offered by corporations are not identified formally as such but are included as part of larger company policies, programs, and benefits. A comprehensive analysis of the problem that acknowledges all the above pertinent variables has been developed by Schwartz and co-workers at the Department of Psychology at Yale University (Neale, Singer, Schwartz and Schwartz, 1982). This is summarized in the form of an occupational stress evaluation grid which analyzes and categorizes stressors from such varying viewpoints and highlights strategies which have been developed to deal with them. (See Table 1.1, p. 5)

#### STRESS MANAGEMENT TRAINING PROGRAMS AT THE WORKSITE

As part of this review, we attempted to identify, categorize, and evaluate stress management training programs offered to workers. This required reviewing the literature supplemented by a series of written and telephone inquiries based on various leads and prior contacts. There were few new programs identified and very little additional information relative to new long term results or controlled studies. There was a general absence of criteria for assessing the efficacy of any such intervention. Most efforts consisted primarily of educational programs designed to acquaint workers with the role of stress in health, and illness, sources and causes of stress, nature of stress related symptoms, and diagrams illustrating stress reduction techniques. In a few instances there were also lectures, symposia, or workshops lasting from several hours to several days. Such programs were usually implemented at the worksite or at conference centers, and hotels, occasionally in the form of a "retreat." In larger organizations tend to be administered by company personnel, and/or

outside consultants. In some instances vendors offer packaged programs that utilize slides, descriptive material, case histories and audio cassettes. Most commercial programs attempt to provide participants with individual stress profiles based upon responses to self report questionnaires, standardized psychological assessment instruments, or the use of a standard or modified Holmes-Rahe Rating Scale. On occasion a specially constructed questionnaire was designed to focus on a particular occupation or worksite. Stress management training was usually provided in the form of meditative or autogenic techniques to induce general relaxation, and to a lesser extent, behavioral and cognitive approaches. In some instances, biofeedback services were available. Encouraging jogging, aerobic exercises and dancing and participation in sports represented the most common approach.

### Physiologic Techniques

Most standardized stress management programs utilize procedures designed to assist the individual in dealing with environmental demands that cannot be avoided. One example is progressive muscular relaxation which is achieved by contracting and then relaxing various muscle groups in the body in a systematic fashion. The goal here is to produce a level of deep muscular relaxation. The original technique described by Jacobson (Jacobson, 1929) has been modified in many ways so that attention is also directed to accompanying such exercises with relaxing thoughts and images, as well as a tranquil breathing pattern. Other forms which include Autogenic Training (Luthe, 1969) place a greater emphasis on sensations such as limb warmth or heaviness to achieve this effect and many use visual imagery in conjunction with physical relaxation.

A variety of meditative measures are frequently employed. These range from specific Eastern techniques to the simplified "Relaxation Response" (Benson, 1975), which utilizes a repetitive deep breathing pattern and associated focus on a word or phrase with each expiration. It has been suggested that this induces a suppression of arousal responses somewhat antithetical to the "fight or flight" reactions. Practicing individuals seem more adept at resisting intrusive stressful thoughts or unpleasant external stimuli throughout the day as well as during the procedure. In rare instances, transcendental or Siddha meditation or yoga have been taught and utilized. A brief technique, known as the "Quieting Response" (Stroebe, 1982) consists of a combination of deep breathing and muscular relaxation combined with visual imagery for ten or fifteen seconds. It is easy to learn and can be used several times a day, especially when stressful situations are anticipated or encountered.

In sites where biofeedback training is available, individuals learn to develop self control over a number of physiological activities previously thought to be entirely involuntary. The most frequent



training techniques utilize frontalis muscle tension, fingertip temperature, and electrodermal response. Special electronic sensors located at appropriate anatomical sites generate a signal that is converted into electrical activity. This input is then transformed into either an auditory or visual cue which varies correspondingly with the degree of activity. By receiving such information on a continuing basis, individuals quickly become aware of body processes which were previously unknown and can recognize stimuli or feelings which produce consistent changes in a certain direction. By repetitive training and reinforcement of measures which reduce muscle tension or raise fingertip temperatures, a state of relaxation can be induced (Brown, 1977). In clinical practice, patients with tension headaches or Raynaud's disease have been successfully taught to abort attacks by reducing muscle tension or warming their fingertips as soon as early warning signs appear. Similarly, many other stress related symptoms can be reduced by successfully learning and practicing strategies. Biofeedback does require specialized equipment and trained personnel and generally requires individualized instruction. Consequently, it is not as cost effective as meditation, muscular relaxation or autogenic training which can be taught to groups of individuals.

### Cognitive Training

Behavioral modification is another method used to reduce exaggerated or inappropriate responses to stress. One example is assertiveness training which is designed to provide individuals with more effective control over their activities. This approach emphasizes the development of appropriate assertive techniques to facilitate communication of personal needs and requirements. It is particularly useful in dealing with difficult interpersonal relationships, such as a need for change in job assignment since it reduces the anger and anxiety often associated with such situations. Other behavioral techniques are directed towards improving skills and communication, time management, and assistance in career development to more fully utilize potential skills and talents. In clinical practice, reduction of Type A coronary prone behavior has been reported to be the most effective method of preventing recurrent heart attacks (Friedman, et al., 1984). Increased use of techniques to reduce coronary prone behavior can be anticipated as soon as training programs and methodologies become standardized. However, this requires specially trained personnel and outside of one or two research efforts, no formal programs are available in training programs in this technique. In general, behavioral modification utilizes role playing, observation, self report feedback, and other behavioral therapy techniques and can be effectively taught in a group setting.

Improving cognitive skills may also provide important stress reduction benefits. This approach is based on the assumption that harmful stress responses often result from the individual's past experiences

in terms of appraisal of threatening situations. Very often, it is not the external event itself, but rather the individual's perception of it that causes problems. Cognitive training is designed to assist individuals in learning how to reappraise stressful situations by logic and reasoning rather than emotional reactions that have been ingrained by past habits. Often this involves emphasis on developing improvement of self esteem and personal worth.

### Physical Fitness

Physical fitness is far and away the most popular method utilized to deal with stress in the workplace. This may take varied forms ranging from lunch hour or other company sponsored walking and jogging groups, aerobic dancing or exercise classes, or encouraging the use of community or in-house fitness facilities where specialized muscle building equipment is available. Proponents of jogging claim that regular running dissipates the build up of stress related hormones and provides a period of quiet time for personal reflection, free from the intrusion of usual external noxious stimuli. Some enthusiasts believe that the repetitive sound of footsteps facilitates the induction of a meditative state or that this particular aerobic activity induces a "spiritual high" by the release of small brain peptides such as the endorphins. In general, physical fitness programs require comparatively little expenditure of funds or specialized personnel and can be adapted to a variety of situations and occupational resources.

Reduction of psychosocial stress in the form of counseling services, weight reduction, cigarette smoking, alcohol and substance abuse, and financial and family problems are also benefits provided by many corporations or unions. Other employee programs which sharply reduce costs for legal assistance, medical and dental care, drug treatment, or by providing expanded insurance coverage are also offered. The increasing use of flex-time, in which personnel have more flexibility in determining working hours, and making baby sitting services available for working parents with preschool children are other types of stress reduction benefits. In addition to reducing workers' anxiety and expenses, they also improve employee company relationships by fostering a sense of caring and concern.

### EVALUATION OF STRESS MANAGEMENT PROGRAMS

Both because of their heterogeneity and rather imprecise parameters of efficacy, as well as lack of control groups, proof of the success of stress management training intervention is difficult to obtain. There is little additional information that can be added to the excellent reviews by Murphy (Murphy, 1984) and the Yale - NIOSH Occupational Stress Project (Neale, et al., 1982), and several comprehensive and informative studies recently published (Fielding, 1984; O'Donnell and Ainsworth, 1984; Quick and Quick, 1984). However, there are presently several ongoing programs to develop and systematically evaluate the

health as well as economic benefits of health promotion programs with an emphasis on stress since it is such a pervasive concern. This type of information is being developed at:

1. The University of Texas Center for Health Promotion, Research and Development (McLeroy, et al, 1984).
2. UCLA under the auspices of Jonathan Fielding and U.S. Corporate Health Management to determine efficacy of hypertension control, smoking cessation, and stress management and, to a lesser extent, physical fitness and weight reduction (Fielding, 1984).
3. The 3 year Corporate Health Promotion Research Project of the University of California School of Medicine in San Francisco and 13 major corporations to determine the most promising areas of research (Pelletier, 1983).

In addition, the American Institute of Stress continually monitors and reports on activities in this area in the United States and abroad. Criteria for efficacy of stress reduction interventions should include assessment of such parameters as:

1. Decreased health costs
2. Decreased absenteeism
3. Decreased employee turnover
4. Increased productivity
5. Self-report indicators of
  - (a) better quality of life
  - (b) improved employee interrelationship
  - (c) improved ability to cope with stress
  - (d) improved relations with the organization

The Johnson and Johnson Live for Life program offers stress management as well as information on lifestyle activities such as eating, exercise, and smoking which can be successfully promoted at the work setting (Arnold, 1981). Some 25,000 employees are involved in active programs at 40 separate locations throughout the United States, Puerto Rico, and Europe. It was expected that by the end of 1985, that this would have been extended to all 75,000 employees worldwide. Employee participation is voluntary and services are provided free of charge. On entry a "health screen" allows individuals to examine how healthy their current lifestyles are. Following this, the concept of the program is explained in depth and a variety of action programs are offered to assist with smoking cessation, stress management, exercise, nutrition, weight control, and general health knowledge. These are all integrated closely with established medical programs such as hypertension detection and control and other employee assistance activities. A two year epidemiologic study was designed to evaluate the success of the program using several criteria which were evaluated annually. These included biometric observations such as blood pressure, body fat, weight, estimated maximum oxygen uptake, and blood

lipid values. Behavioral benefits in terms of smoking, alcohol use, physical activity, nutrition, job performance, and interpersonal relations were also recorded. Attitudinal alterations were assessed in terms of sense of general well being, job satisfaction, company relationships, quality of life in the workplace, and improved health attitudes. Four divisions received the complete "Live for Life" program, while 5 served as controls, offering only the health screen to their employees. Approximately 4,000 employees were involved in the epidemiologic study group. Unfortunately, a randomized, prospective control trial was not attempted since the educational program facilities for lifestyle improvement were available to all workers. Thus it would have been impossible to keep individuals randomly assigned to a control group from escaping the effects of this intervention. Random assignment of company sites was also not possible.

Preliminary findings on the cohort of employees which did complete both the baseline and one year health screen did suggest an ability to achieve significant and meaningful improvement as indicated by the figures cited in Table 4.1 (Wilbur, 1981). Obviously, programs such as Live for Life require a major commitment on the part of the employer as well as personnel, equipment, and other resources frequently not available to many organizations. Control Data has spent "well over \$10 million" in its six year Stay Well program in which 50,000 employees nationwide are offered classes on coping with stress, nutrition, etc. However, benefits and savings are difficult to quantify or accurately estimate and that very question bothered the Director of Health Services. In a recent New York Times article (Mirvis, 1985), he was quoted as saying, "Businesses don't know what the return is on any of their employee benefits. What's the return on an extra week of vacation? So why hold wellness programs to such a test?"

However, stress management techniques that can be utilized in almost any industrial setting have also been studied and determined to provide significant benefits. One such program was conducted at the New York Telephone Company for some 160 volunteers who reported high stress (Carrington, et al., 1980). On entry, the subjects completed form A of the 16 personality factor inventory, the SCL-90-R (Derogatis, 1981), and a pretreatment attitude compliance questionnaire. The same instruments were used to measure progress at the end of 6 weeks and again at 5 1/2 months. Thirty-eight subjects were assigned to one of three treatment groups utilizing clinically standardized meditation, Benson's Relaxation Response, and progressive muscular relaxation. A control group of 40 received no specific instruction. The techniques were taught through audio taped instructions with supplementary reading material which the participants reviewed at home. The techniques were practiced twice daily for 15 to 20 minutes and at the end of 2 weeks specially trained

TABLE 4.1. Preliminary findings from Johnson & Johnson's  
Live for Life Program.

<u>Health Screen Measure</u>	<u>Percent Change</u> <u>Baseline - One Year</u>	
	<u>Treatment</u> <u>(N=737)</u>	<u>Control</u> <u>(N=680)</u>
<u>Fitness</u>		
Aerobic Calories (/Kg/Week)	43% **	6%
<u>Weight Control</u>		
% Above Ideal Weight	-1% **	6%
<u>Smoking Cessation</u>		
% Current Smokers	-15% *	- 4%
<u>Stress Management</u>		
General Well Being	5% **	2%
% With Elevated Blood Pressure (140/90)	-32%	- 9%
<u>Employee Attitudes</u>		
Self-Reported Sick Days	-9% *	14%
Satisfaction With Working Conditions	3% **	- 7%
Satisfaction With Personal Relations At Work	1% **	- 3%
Ability to Handle Job Strain	0% **	- 2%
Job Involvement	2%	0%
Commitment to the Organization	0%	- 2%
Job Self-Esteem	0% *	- 2%
Satisfaction With Growth Opportunities	-1%	- 3%

\* = Significant at the 5% level.

\*\* = Significant at the 1% level.

psychologists conducted group meetings to answer any questions and teach additional briefer forms of relaxation that might be utilized throughout the work day.

All four groups, including controls, showed improvement after 5 1/2 months. However, those who were members of the meditation-relaxation groups reported significantly greater symptom reduction than controls as measured by the SCL-90-R. Compliance was greatest in the standardized meditation group (81%) as compared to 76% with the "Relaxation Response" and 63% for the progressive muscular relaxation group. When those subjects who were still practicing their techniques at the conclusion of the study were compared with non-practicers, the therapeutic benefits were even more pronounced despite only occasional use.

The SCL-90-R scores for employees were compared with those of comparison groups previously studied including normals and psychiatric out-patients. The initial scores fell midway between those of psychiatric out-patients and normals on entry into the program. However, at the end of 5 1/2 months, the scores for the meditation-relaxation groups fell in the middle of the normal range and the summarization scale was significantly below normal. In contrast, the New York Telephone control group still ranged significantly above the non-patient normal average value. The progressive muscle relaxation group did not differ significantly from controls in terms of symptom reduction but most meditation groups did. Those subjects who stopped practicing generally did so within the first three months. Those who continued, often switched from frequent to occasional practicing, but significant improvement was still apparent.

In another study conducted in the corporate offices of the Converse Rubber Company (Peters, Benson and Porter, 1977a), 126 volunteers participated in a program designed to study the effects of two fifteen minute relaxation breaks during the work day. One third of the group had two or three instructional sessions in the relaxation response, another third simply relaxed without focusing on anything specific, or listened to music, and a final group received no special instruction. The efficacy of the program was assessed by self report of physical and mental symptoms including level of energy, improved concentration, overall efficiency, problem solving ability, and time lost due to illness. On each of these indices, the relaxation response group showed the greatest benefits. The control group reported least improvement, and the daily relaxation break without specific training showed intermediate gains. Of interest was the notation that specific relaxation training instructions also appeared to result in significant reductions in blood pressure (Peters, Benson and Peters, 1977b). The results of such studies are encouraging since they suggest that positive benefits can result from relatively simple, brief, easy to learn techniques that are inexpensive, do not require

highly trained personnel or specialized equipment, and can be adapted to almost any work setting. However, long term follow-up is required to demonstrate sustained improvement and such data is not readily available.

Mullen at the University of Texas recently presented an overview of the evaluation of health promotion programs in a discussion paper for the United Way Trust (Mullen, 1985). Among the programs reviewed were those at Pioneer Hi-Bred International, Quaker Oats, and the innovative and highly successful program of the Mendocino United School District. Healthy People in Unhealthy Places: Stress and Fitness at Work (Pelletier, 1984) is based on a two year study of over 160 corporate programs and profiles the effective programs at Xerox, Johnson & Johnson, IBM, and Scherer Brothers Lumber Company. Both of these sources provide useful information on program design, incentives, development, and evaluation.

A variety of outside vendors also offer stress management training programs for workers that may be delivered on site or at other locations. These generally provide psychologists or specially trained personnel to instruct employees in the various stress reduction techniques noted above. However, evaluating their efficacy is hampered because of lack of control groups, absence of long term follow-up and inadequate assessment criteria. One innovative approach which attempts to focus on job related stress due to incompatibility between the individual's goals and behavior and work requirements is offered by Human Synergistics (Lafferty, 1983, 1984 revisions). Level 1 ("Life Styles Inventory: Self Description") provides detailed information about behavior by means of a lifestyle inventory. This involves completing a self description questionnaire revealing thinking patterns which characterize personality and lifestyle and whether such activities are productive or destructive.

The results develop a profile that rates and compares concern for people and satisfaction, concern for people and security, concern for task and security, and concern for task and satisfaction. At Level 2 ("Life Styles Inventory: Description by Others") the same lifestyle inventory is completed by 6 or 7 other close friends or co-workers whose opinion would be respected in describing these same aspects of the individual's behavior and attitude. The resulting composite profile helps to identify the way others perceive your attitude. The similarities and differences that exist between the results of Level 1 and Level 2 evaluation provide important insights into understanding the effects your behavior has on other people.

Level 3 ("Concept of Self Index") offers an in-depth psychological inquiry into the major influences that cause observable behavior. This provides basic information on factors such as self esteem, motivations, misconceptions, and fundamental ways of processing

information that directly affects behavior. As a result, a plan for changing inappropriate or self defeating thinking and behavior patterns can be formulated.

Levels 4(a) ("Management Practices Audit") and 4(b) ("Supervisory Practices Audit") focus on managerial and supervisory behavior. This measures some 15 management skill areas and 12 styles both by self report as well as by 4 or 5 anonymous close co-workers reports. Such confidential feedback about management methods has been found to facilitate significant positive change. The Human Synergistics program has been in existence for approximately 15 years with minor modifications. The company indicates that efficacy can be validated and that in addition to improved efficiency at work there are distinct health benefits. Cost effectiveness is more difficult to prove and the major value of this program would appear to be targeted to middle management or executive personnel.

The Institute for Labor and Mental Health has developed an Occupational Stress Group that uses trained shop stewards to conduct a highly structured twelve week course in the workplace. This is designed to increase the worker's sense of power or ability to influence working conditions and to promote a greater sense of camaraderie and self trust. A major result has been a more "focused anger" directed at specific work problems that attempts to rectify discrepancies. It is claimed that this increases productivity, reduces problems related to alcoholism and emotional outbursts or random anger at home (Behavior Today, 1985).

Another newly formed company, STRESSCARE, offers a prepackaged multi-dimensional approach to stress management for corporations (Elkin, 1984). This program contains a variety of techniques as shown in Figure 4.1. Preliminary reports on general applicability, cost effectiveness, compliance, and efficacy are favorable.

#### FUTURE DIRECTIONS

Clearly, management, labor unions, and various occupational organizations have become increasingly aware of the importance of job stress and are expressing increasing interest in programs to reduce its causes or combat its effects. Rapidly rising worker compensation claims for all sorts of job stress as well as increasing payroll costs for health related insurance and expenses will undoubtedly accelerate this trend. Detailed analysis of specific occupational stress related problems have been noted in a variety of surveys including stress and burn-out in the schools, operating railroad engineers, law enforcement officials, air traffic controllers, editors, and graphic arts design personnel. Such studies may be particularly useful in formulating specifically targeted programs.



# STRESSCARE PROGRAM

## Program Overview

10	Welcome and Introduction	20	Understanding Stress	30	The Stresscare Program	40	Q&A (15 min)	50	Stress Awareness Training and Biofeedback Demonstration	60	Stress Monitoring Procedures	70	Diaphragmatic Breathing	80	Rapid Relaxation	90	Stress-Cues & Prompts	100	Stress-Cues & Prompts	110	Stress-Cues & Prompts	120	Stress-Cues & Prompts
	Progress Review		Personal Stress Profiles		Stress Discrimination Training		Stress-Cues & Prompts		Thought Stopping		Thought Stopping		Thought Stopping		Thought Stopping		Thought Stopping		Thought Stopping		Thought Stopping		Thought Stopping
	Progress Review		Perceptual Restructuring (II)		Relaxation Imagery		Relaxation Imagery		Relaxation Imagery		Relaxation Imagery		Relaxation Imagery		Relaxation Imagery		Relaxation Imagery		Relaxation Imagery		Relaxation Imagery		Relaxation Imagery
	Progress Review		Perceptual Restructuring (III)		Meditative Relaxation		Meditative Relaxation		Meditative Relaxation		Meditative Relaxation		Meditative Relaxation		Meditative Relaxation		Meditative Relaxation		Meditative Relaxation		Meditative Relaxation		Meditative Relaxation
	Progress Review and Application Strategies		Progress Review and Application Strategies		Nutrition, Fitness, and Stress		Nutrition, Fitness, and Stress		Nutrition, Fitness, and Stress		Nutrition, Fitness, and Stress		Nutrition, Fitness, and Stress		Nutrition, Fitness, and Stress		Nutrition, Fitness, and Stress		Nutrition, Fitness, and Stress		Nutrition, Fitness, and Stress		Nutrition, Fitness, and Stress
	Progress Review and Application Strategies		Progress Review and Application Strategies		Time Stress and Priorities Clarification		Time Stress and Priorities Clarification		Time Stress and Priorities Clarification		Time Stress and Priorities Clarification		Time Stress and Priorities Clarification		Time Stress and Priorities Clarification		Time Stress and Priorities Clarification		Time Stress and Priorities Clarification		Time Stress and Priorities Clarification		Time Stress and Priorities Clarification
	Personal Program Evaluations & Wrap-up		Personal Program Evaluations & Wrap-up		Personal Program Evaluations & Wrap-up		Personal Program Evaluations & Wrap-up		Personal Program Evaluations & Wrap-up		Personal Program Evaluations & Wrap-up		Personal Program Evaluations & Wrap-up		Personal Program Evaluations & Wrap-up		Personal Program Evaluations & Wrap-up		Personal Program Evaluations & Wrap-up		Personal Program Evaluations & Wrap-up		Personal Program Evaluations & Wrap-up

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- Education about the signs and symptoms of stress
- Explanations of how stress reduction techniques can alleviate the signs and symptoms of stress and how the skills to use these techniques effectively can be developed
- Implementation of specific stress management techniques based on all of the above.

- A careful review of audit results, followed by setting/communicating clear, concrete program objectives based on the findings
- A consideration of which stress-related factors will be monitored to measure the impact of the program
- Informational material about the nature of stress and its potential role in producing various illness syndromes

A recent New York Times (Mirvis, 1985) article cited preliminary results during the first year of a 5 year \$4.3 million study of some 85,000 Federal employees and Hawaii residents eligible for Medicaid, who were simply provided access to short-term psychotherapy for stress related problems. The result was a 37% reduction in total medical bills which saved almost \$16 million in medical and health claims.

The cost of a mental health program offered by Blue Cross/Blue Shield of Arizona to employees of some 1,200 companies in Phoenix and Tucson was not disclosed, but the manager of the project insists that "reduced health care claims will 'more than make up' the costs." His analysis of claims further suggested that half of a company's medical expenses come from just 10% of the employees.

The American Telephone and Telegraph Company started its Total Life Concept program in 1982 in anticipation of mounting stress with the impending divestiture of the Bell Companies, offering classes on stress control, nutrition, and exercise. The results were so rewarding that the courses are now offered at five AT&T locations with plans to extend it nationwide. The program manager indicated, "we expect a \$2.00 return for every \$1.00 invested."

An ongoing study of some 6.7 million federal workers' health claims over the past decade similarly revealed that while those seeking mental health treatment initially had higher medical expenses, after five years, the costs were lower than those who did not, even though the patients were older. In fact, patients 55 years and over who received such stress reduction assistance showed the greatest decrease in hospital charges.

New York State now offers a new "crisis intervention visits" program for "persons struggling with a sudden stressful situation." Insurance provides \$60 per visit for up to three visits, up to \$48 for the next ten visits, and up to \$40 for the next twenty visits. The Commissioner of the New York State Department of Civil Service predicted that the program would "save the state \$200 million in absenteeism and medical claims over three years."

Obviously, the most effective approach would be to identify sources of job stress and remove them wherever possible. The subject has been explored at length in Healthy People in Unhealthy Places (Pelletier, 1984) which, as previously noted, should provide a valuable resource for organizations interested in reducing stressful working conditions. As indicated, job stress may also frequently result from problems that have their origin in the worker's personality, attitude, and goals and more frequently an incompatibility with these and the job requirements.

Analysis and differentiation of such sources of stress can be approached by using an inexpensive simple questionnaire offered by the American Institute of Stress. This utilizes and correlates responses

to some 75 questions designed to measure anxiety, depression, hostility, ability to express emotions, Type A behavior with various aspects of perceived job stress. A computerized printout is generated which provides insight into whether the problems arise because of the nature of working conditions, as opposed to personality, or behavioral characteristics, or a mismatch between the two.

While we have seen that some simple stress reduction techniques may provide across the board benefits, stress management techniques ideally should be matched with the requirements of the organization and the population being served. In some instances, emphasis may need to be placed on problems such as job security or career management. For maximum effectiveness, workers should ideally play an active role in program selection, design, and evaluation. Progress is more apt to be made by beginning starting with a small focused intervention program for a specific target group that allows evaluation of efficacy and costs. This can be enlarged in stepwise fashion as results indicate the need for various modifications or greater emphasis in specific areas. This approach seems preferable to instituting a large multifaceted smorgasbord of services. Existing facilities should be utilized whenever possible, and this can usually be accomplished with respect to exercise or fitness programs. On the other hand, it may sometimes be more efficient and economical to take advantage of existing community based exercise programs such as those offered by local YMCA facilities. These often provide other counselling services with respect to diet, nutrition, smoking cessation, hypertension detection, and management of low back problems. It is particularly important that any program provide built-in evaluation techniques to assess the efficacy of the intervention. This requires the participation of randomized control groups and long term follow-up assessment.

Companies can best embark on such programs by learning from the experience of others, particularly organizations of similar size and demographics that have instituted successful programs. An useful resource in such information gathering is the newly formed National Health Network which maintains a current computerized database accessible to businesses, through a toll free number (1-800-322-1234), for locating health promotion services available in their respective geographical location.

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## CHAPTER 5

### CREATING AND MAINTAINING COMPREHENSIVE STRESS MANAGEMENT TRAINING

John D. Adams

This chapter begins by establishing a philosophical basis for comprehensive stress management training which encourages each individual to become more self responsible and self determining, and suggests that the overall program must focus on dynamics within the organization as well as within the individual. It then goes on to describe an ideal program in relation to planning, goal setting, developing system support, and the technologies and resources needed. Ongoing program maintenance is discussed in relation to program evaluation processes, its relationship to other existing programs, and the need for the system itself to respond to issues identified in the program. The chapter does not provide specific instruction in stress management techniques or specific substantive information relative to stress management techniques.

#### INTRODUCTION

There is little doubt that stress management training has, over the past few years, become the most popular form of training available in American organizations. It's popularity is likely to continue, as people recognize that they are under more stress than is good for them, and that there are specific things they can do to combat the effects of excessive stress.

Whenever a training topic becomes popular, large numbers of full and part time trainers begin to offer the training as a part of their repertoire. Often, the result is that the topic becomes just another program from the training department. When this happens, the training program generally has little impact. It is likely that with increasing popularity, the quantity of stress training programs increases and the quality and impact of such training decreases in proportion. At this point, most of those employed as trainers in America have at least a "stress module" in their repertoire, while those trained in health protection and health care are just beginning to join in on the training ventures.

Another related problem is that most trainers keep themselves too busy conducting training programs to do any serious follow up impact studies on their work. Thus, at this point, relatively little is known about the relative impact of various approaches to conducting stress management training.

One of the basic questions which should be asked of a suggested stress training program is "what is the true purpose of the training?" Often, these programs are created in organizations as palliatives or



as one time efforts. They are the "thing to do", or it is felt that management has done its "bit for humanity" in offering stress courses — and therefore, they need not worry further about the unnecessarily stressful environment they have created. My findings (Adams, et. al., 1983, 1984) about these kinds of training efforts have been that people are forced to protect themselves from their organizations. In six month post-training follow up studies, for example, I have found consistently that people will be getting more exercise, eating better, relaxing more, and so on, while feeling less satisfied and fulfilled at work and less supported on the job. When this finding is explored further, one finds that the stress training taught people to see clearly how minor managerial adjustments could reduce the level of unnecessary stress in the working environment. When they make suggestions, however, they are told to mind their own business or are ignored.

A large proportion of stress programs are sold by the trainers to their companies, and are offered as this year's "trick". When this is the case, the programs are most often not thought through carefully, but are merely added to the trainer's repertoire. Such programs generally have little if any long range effect.

If a stress management program is to have a strong impact on both health and performance, it needs to be conceived in and built on the clear purpose to make the system (organization) less unnecessarily stress provoking while at the same time enhancing individuals' abilities to cope and to thrive.

There are two basic life orientations, and the one which predominates in the individuals offering the program will have a major impact on how the program is conducted and whether or not it is effective in the long run. One of these, the Reactive-Responsive orientation, places the locus of control outside the individual as s/he reacts to stimuli from the environment and responds as effectively as possible to the constraints s/he faces. Programs based on this orientation will teach a lot of techniques for managing stress, but will contain the implicit message that stress comes from the environment and "you'll just have to make the best of it". Participants are not likely to derive long term benefits from such an approach. Rather, the approach will ultimately reinforce their feelings of powerlessness to cope effectively with a "hostile" environment.

The other is the Creative orientation, which views each individual as being the predominant creative force in her/his own life. Programs based on this orientation will focus on the underlying patterns in each person's consciousness which are the major determinants of what the person is getting from life. It will also teach participants how to develop creative orientations within themselves. Basic to this orientation is the individual's fundamental choice to be healthy. If an individual does not make this choice, stress management tricks are

not likely to be particularly useful in the long run. A stress program which is based mostly on the creative orientation is more likely to have a lasting impact on participants than is one based solely on the Reactive-Responsive orientation. (For a detailed development of these orientations, see Fritz, 1984.)

Comprehensive stress management programs must focus on both the individual and the system (Adams, 1981). On the individual level, there needs to be an external focus on avoiding or removing unnecessary stressors and on coping effectively with those stressors which are unavoidable (or the individual chooses not to avoid). In addition there needs to be an internal focus on health protection and enhancement and on attitudinal orientation as suggested in the previous paragraph.

These same considerations (removal, coping, health protection) also must be considered on the systems or organizational level. What can be done within the organizational system to remove or avoid inducing unnecessary stressors? In general, the answer to this question has to do with minimizing novelty (surprise, uncertainty) associated with the introduction of necessary changes and modifying stress provoking organizational norms. What can the organization be doing to equip members to handle necessary stressors effectively (e.g. effective problem solving, availability of training courses)? And finally, in what ways other than the stress management training programs can the organization encourage good health habits?

In summary, the "ideal" stress management program receives managerial support across the organization. There is a feedback loop created in which systems-oriented ideas for reducing the number of unnecessary stressors and for coping effectively with the necessary ones are encouraged and taken seriously. The training programs themselves encourage and foster the creative orientation referred to above in which individual organization members learn to operate from the fundamental choices to be creative and to have full and vibrant health.

## AN IDEAL WORKSITE STRESS MANAGEMENT TRAINING PROGRAM

### Conceptualizing the Program

Clear, understood, and accepted goals are an essential starting point for an effective stress management training program. When the goals of any training program are unclear, the program results are bound to be diluted. Griffen, et. al. (1982) have suggested six criteria for setting goals for an effective stress management training program:

1. Make the goals as specific as possible
2. Make the goals measurable
3. Ensure that the goals are realistic/attainable
4. Include both individual and organizational benefits

5. Elicit the support and endorsement of top management
6. Focus on attitudinal adjustments, modifications of behavior, skills to be acquired.

The absence of clear goals, or desired results, is probably the most frequent cause of low impact stress training. The above criteria should provide the program initiator with sufficient guidance to undertake a highly successful program.

One should note at this point that the second criterion is that goals should be measurable. This is essential to the establishment of an effective evaluation process. In fact, if the evaluation of the impact of the program is to be useful, it must be designed at this point, prior to the conduct of the program.

Once the goals are clear, they can be broken down into specific program objectives. The format for establishing goal related objectives advanced by Loughary and Hopson (1979), outlined below, is a very useful one.

GOALS	OBJECTIVES		
	KNOWLEDGE	SKILLS	ATTITUDES
...	...	...	...
Review present responses to stress	Understand framework for stress mgt.	Able to identify own warning signals of excessive stress	It's necessary for me to take responsibility for my own well being
ETC.	ETC.	ETC.	ETC.

#### Acquiring System Support

If one can negotiate the key goals of the program with top management, and then identify the specific objectives associated with each, the design and development of the program usually fall nicely into place. When this goal/objective setting step is rushed or overlooked, the design and development phases generally take much longer and the resulting program is generally lacking in focus.

As has been stated, top level support is crucial for a stress management program to have lasting impact on the participants and on the organization. With this support, feedback loops can be created by means of which the "system" can respond to ideas and issues which emerge during the course of the training.

It is also possible, with such support, for the stress management training program to actively consider how the culture of the organization is both an asset and a liability to effective stress management. For example, if one of the elements of the organization's culture which people identify as stressful is that no one ever gives any performance feedback except when mistakes are made, there is little hope of engendering more positive performance feedback without the active involvement of senior managers.

When solid support from management is lacking, the nature of the stress management training is necessarily different. Rather than including a systems perspective on how to respond to the stressors in the working environment, one must focus the training primarily on teaching the participants to protect themselves from their own organizations!

One of the most effective ways to elicit top management support is to present a statistical summary of the costs of unaddressed stress. Such summaries are relatively easy to construct, as national health statistics are readily available from the Center for Disease Control, plus many of the popular books on stress and health published over the past 10 years. One can also easily access the trend in the organization's health care payments for the last several years in most organizations. In some cases, more specific stress related health care costs are available within the organization (turnover and absenteeism rates, prevalence of hypertension, etc.). With a little more digging, the hidden overhead costs for replacing personnel can be estimated with some accuracy. The figure usually comes out to be close to the average salary plus benefits for the position being filled. When one begins to develop such estimates, the magnitude of unaddressed stress becomes evident, and the impetus for developing a high impact stress management training program grows.

Another consideration in engendering system support for the intended stress management training program is in relating the program to other training seminars already available to members of the organization. It can be argued that any training seminar which helps people do their work better with less tension is a "stress management" training program. With this perspective, aligning the stress management training program with these other programs becomes an obvious thing to do. With a broad sense of integration across the spectrum of training resources available, all of the programs will benefit and have greater impact.

Ensuring that the program is conducted by people with adequate resources is also of utmost importance. Stress management training is quite different from other kinds of training programs, which are generally based on a single discipline such as social psychology. Stress management training, on the other hand, necessarily is highly multi-disciplinary, drawing on such diverse fields as psychology,

physiology, anatomy, nutrition, endocrinology, systems theory, sociology, and so on. The trainer needs to be able to communicate the interrelationships of very complex information in language which is easily understood by the participants. Further, the trainer must know the currently acceptable tenets in each of these diverse fields, in order to debunk the plethora of media-mythologies and fads. And finally, if external trainers are used, there need to be some direct forms of internal staff involvement created to handle the likely needs for follow ups arising from the training.

The creation of a comprehensive stress management training program may necessitate the coordination of several different expert resources, if a single person with the broad range of knowledge and skills required is not available. There may also be personnel in the organization who have developed specialized expertise in certain relevant areas who might often be overlooked (e.g., a secretary who has learned an extensive amount about nutrition and would like to share her ideas). It is essential that the lead trainers be role models for the client population. One of the fastest ways to kill a stress management training program is to have it taught by someone who obviously is a poor stress manager! One is never "finished" in his or her development of stress management skills, but in order to have credibility, one must be seriously "in process" and be able to be articulate about what s/he is doing about his or her own stress.

Yet another factor in establishing and maintaining support for the program has to do with effective overall planning. Griffen, et al. (1982) have outlined a useful progression of planning steps, suggested means for assessing the systems readiness for stress management training, and outlined a strategy for working with resistance to the program. Their suggestions are presented in the following lists:

#### STEPS IN PLANNING A STRESS MANAGEMENT PROGRAM

- o Assess and measure each employee's stress level
- o Assess present adaptive and maladaptive coping strategies
- o Determine the major stressors in the workplace
- o Explain what stress is
- o Explain the personal health implications
- o Identify individuals' symptoms of excessive stress
- o Identify personal causes of stress
- o Describe various stress management strategies
- o Develop personalized action plans

(For more details on the planning points listed above, see Adams, 1981, Adams, et. al., 1983, and Adams, et. al., 1984).

## DEVELOPING READINESS FOR STRESS MANAGEMENT TRAINING

- o Assess position of top management
- o Areas of concern clearly identified
- o Coordinate with relevant departments (medical, HRD, etc.)
- o Identify what the program is meant to accomplish
- o Identify needed training resources
- o Anticipate and address criticisms
- o Develop means of assessing impact
- o Identify target population
- o Determine course content and focus
- o Select program title with desired effect
- o Check out the instructors

## OVERCOMING RESISTANCE TO STRESS MANAGEMENT PROGRAMS

- o Gather data on cost effectiveness
- o Cultivate a clear understanding that the stress response is a natural biological response, not a characterological weakness or an indicator of poor mental health
- o Establish that stress management training is for prevention, and that it is neither treatment nor a form of therapy
- o Demonstrate that it is a lot more than a single technique (such as relaxation)

In a similar vein, McCauley and Bellingham (1984) have developed a list of pitfalls to avoid in their health promotion work at the New York Telephone Company.

## COMMON ERRORS TO AVOID

- o **FRAGMENTATION:** unrelated and unintegrated programs
- o **ACTIVITIES:** creating diverse activities without articulating desired results
- o **ILLNESS FOCUS:** a successful program will focus on establishing and maintaining well-being
- o **LACK OF INVOLVEMENT:** the more people involved in some way with program development and conduct, the more excitement and enthusiasm
- o **UNAPPLIED KNOWLEDGE:** facts don't change behavior; teachable skills are the tools for success
- o **INDIVIDUAL FOCUS:** if the organization's culture is not addressed, impact is limited
- o **EMPHASIS ON START UP:** a successful program must be based on a long term view

## TECHNOLOGIES, RESOURCES AND STRATEGIC QUESTIONS

Once the above points have been taken into consideration, there are still a number of more specific points which need to be included in the development of the stress management training program.

**PREWORK:** Some form of prework, such as having participants complete some stress level assessments and/or a health risk appraisal can be a very valuable component of the program. In addition to saving time in the program itself, participants are stimulated to begin thinking about their experiences of stress as a result of responding to such diagnostic questionnaires.

**BALANCE:** There needs to be a balance established in the training among lecture, reading, activities, instrumentation, and audio-visual presentations. While trainers vary in their preferences, an overload of any of these design possibilities will diminish the impact of the program, as will the total absence of any of them.

**PRACTICING WHAT YOU PREACH:** If one is going to lead a training group in yoga exercises, one should first be a regular yoga practitioner. If one is going to teach meditation techniques, one should be a regular meditator. And so on.

**SELF-DIRECTED PACKAGES:** There are a great many self guided or self directed stress management packages in the marketplace and, in general, that is where they should remain. The only usefulness they have is to supplement group training activities. When these packages are made available in lieu of training, they are generally not used well and are a waste of money.

**NUTRITION:** Many stress management training programs overlook the importance of nutrition. Healthful meals and breaks can easily be provided in most instances. Material needs to be made available explicating the interactions of blood sugar, fats, salt, fiber, water soluble vitamins and stress.

**LOCATION:** Off-site locations are preferable whenever feasible. Programs conducted on site have a great deal more difficulty holding the participants' attention. Many participants' experiences of the training become fragmented by coffee break visits to the office and the "inevitable" emergencies which arise.

**COMPOSITION:** The initial groups generally must be heterogeneous, but succeeding groups should be made up of teams whenever possible. This allows for the resolution of stressful shared bad habits such as poor communications, sweeping disagreements under the rug, providing only negative performance feedback, and so on.

**PREVENTIVE:** If the program develops a "touchy-feely" reputation, it won't last long. It is imperative that stress management training programs be clearly seen by organizational members as being rooted in an illness prevention and health promotion context.

**REFERRALS:** It is very important that stress management trainers be able to make knowledgeable referrals for specific conditions beyond the scope of the training (e.g. alcoholism) both inside and outside the organization. From time to time, people will appear in stress management training who are experiencing possibly stress related conditions such as chronic anxiety, recurring headaches, hypertension, and so on, seeking an easy "cure". It should be clear that stress management training is not the place to treat chronic situations such as these even if they are stress related. It is important for the program leader to either be well versed in identifying problems which need referral or have access to such a person, so that appropriate referrals can be made.

#### PROGRAMMATIC CONSIDERATIONS

There are also some additional considerations having to do with program decisions which need to be spelled out. A comprehensive stress management training program, one which offers participants a broad array of options to follow (as in a "cafeteria"), needs to be of substantial length. A two day program is just about the minimum amount of time that must be devoted to such a program -- with three to five day programs having demonstrably higher impact. It also is imperative that such programs be offered on company time, and that participants be given release from their normal duties to attend. If this is not done, employees quickly develop the idea that the organization isn't really serious about the program. It should also be obvious that conducting the program after normal working hours or on weekends, so as not to lose employee time at work is more than a little antithetical to the underlying message of the program.

When the desired comprehensive program cannot be offered all at once, there are some advantages to offering it a module at a time (e.g. for half a day at a time over a period of several weeks). This model allows for participants to go into some depth in each area of training, plus it presents an opportunity to do homework practices between each session, with reportbacks on progress. The shortcoming is that participation falls off, as people have "emergencies" arising in their work. (It is incredible how often participants in this format find that they have too many stressful things going on in their work to complete the stress course!)

Another programmatic concern is whom to invite to participate. Too often, these programs are made available to management only, while the highest stress levels are most likely experienced by clerical staff, the first line supervisors and their workers. Relatedly, it is



important to establish the image that the stress response is a normal, biological response, and that it is natural. Everyone in the organization is subject to the adverse consequences of excessive stress. And finally, wherever possible, spouses of employees should be invited to participate. If a participant concludes during the stress management training that s/he needs to make some fundamental life style changes, there is a much greater chance s/he will succeed if this conclusion is reached in the presence of the spouse.

Following the completion of a comprehensive stress management program, people often feel the need for more specific or focused training experiences to follow up. If there is a broad array of programs available within the organization, their relationship to reducing stress should be made clear. It is often helpful also to have a listing of specialized programs available in the community.

Another important programmatic feature is the establishment of individual plans for action. If people are going to make use of what they learn in any training program, they need to take some specific steps with their new learnings within two or three days of the end of the training. It is therefore important that participants be guided into a specific project area to work on first (one should adopt a one step at a time mentality), and then to identify the specific action steps they will begin taking within the next few days. The likelihood of positive, lasting impact of the training will be further increased if the individual action plans include a review of one's support network and a determination of how specific other people can operate in ways to guarantee the participant's success in her/his action plans.

Next, feedback loops need to be established to deal with themes or issues which emerge from the stress management training at the managerial or policy level of the organization. Invariably, many of the things which participants identify as being their primary stressors have to do with the careless implementation of changes and the existence of shared "bad habits" within the organization. Many such unnecessary stressors can be alleviated if there is a mechanism created (e.g. a stress reduction task force) to address them on an organization wide basis.

A final programmatic issue has to do with the creation of follow up booster sessions for participants six months to a year after their initial training. People inevitably will experience some frustrations and loss of momentum even after the best possible training efforts, and follow up sessions can often address problems of motivation and get people back on the track. People will respond most favorably to these follow up sessions if they see that "management" is doing something procedurally about stress in the organization. If they learned in their original training that a few simple changes within the system could alleviate a lot of the stress they experience, and

then see that the powers that be in the system do not respond to their suggestions, any attempts to do follow up "booster sessions" will most likely result only in a great deal of cynicism.

#### ON-GOING PROGRAM MAINTENANCE

##### Evaluation

One of the most frequently overlooked aspects of most training which is conducted in the United States today is evaluation. Most programs do have some sort of satisfaction measure taken at the conclusion of the training which is of the "did the dogs like the dog food?" variety. Course evaluations of this sort have some usefulness to the training staff relative to specific techniques or design features used, but after several programs, most trainers see the same pluses and minuses over and over again and are more likely to rationalize the reasons for the minuses and generally ignore the results of the evaluation.

Of greater importance to the overall success of a comprehensive stress management training program is a form of evaluation which is seldom undertaken by training departments -- an evaluation of the actual impact of the training on the lives of the participants. For example, after six months, how many have sustained significant changes in their life styles? How many have lowered their blood pressure or lost weight or stopped smoking or continued to practice the relaxation habits they have learned. Have absenteeism and turnover been reduced? Has morale increased? More difficult to get at and even more important to measure is the degree to which the person has altered her/his attitudes and expectations about stress and her/his ability to respond effectively. Impact measures such as these need to be tied to the original objectives of the course and need to be measured prior to the training to provide some basis for comparison at some point after the training.

Over the course of the program, as several courses have been offered and the impact evaluations begin to accumulate, those responsible for the stress management training will note patterns in the long term responses to their program, which they can consider in redesigning and continually refining the program. While it is nice to get "high marks" on course reaction forms, the true test of the effectiveness of stress management training can only be measured in terms of how people are thinking and acting differently a significant period of time after the course has ended.

##### Context of Other Programs

A major segment of the stress management repertoire that is taught in a comprehensive program introduces the notion of behavioral and interpersonal skills as being necessary to make effective responses in

stressful situations. As such, every training program offered by the training staff of most organizations is conceivably a stress management program to the extent that it helps people to do their work more effectively and with less hassle. Thus, embedding the stress management training course in the context of training in the organization is important. If it is offered as something entirely separate from other training programs, it will not serve the participants as effectively as if it is seen as a central part of the training.

By the same token, in many organizations, there are many staff services available to employees that are of relevance to the stress management training and these connections should be made for the participants. Included would be Employee Assistance Programs, other counseling programs, medical department services (if there is an interest in prevention), emergency personal services programs, Human Resources programs, and so on. Every service offered to employees is conceivably of some relevance to a comprehensive stress management training program, and care should be taken to establish and nurture the relationships among these services as the stress management training proceeds. If one or more of these services becomes alienated or turns against the stress management program, the program's credibility will suffer.

#### System Response

One effective framework for assessing the effectiveness of stress management suggests three levels of response. The first two levels, (1) avoiding or removing stress and (2) coping effectively with stress, are focused on adjusting the stress levels individuals are experiencing. The third level, building and protecting health, has to do with developing the individuals' capacities (reserves) to withstand the rigors of working in a stressful environment. It should be obvious that there are many facets to each of these three levels which individuals need to be taught in a comprehensive stress management training program. What is often less obvious are ways the system can respond on each of these three levels to cut down on the amount of unnecessary stress generated and to encourage individuals to look after their health and well-being. Some system level ideas follow.

Removal or Avoidance of Stressors: The organization can help to avoid creating a lot of episodic stress for its members by ensuring effective communications about necessary changes and taking other steps to minimize the amount of surprise and uncertainty (novelty) so often associated with complex change processes in organizations. Further, the organization can encourage face to face work groups to identify the stressful habits or norms affecting their work and to take steps to alter these norms. Thirdly, different styles of decision making and policy formulation may be necessary. Finally, organizations can often take the heat off, at least temporarily, by rotational work assignments.

Coping Effectively with Unavoidable Stressors: The organization can help its members cope with stressors on a day to day basis if it encourages the use of effective problem solving techniques, rather than letting expedience or internal political dynamics "solve" the problems which inevitably arise. Second, employee education is increasingly necessary. In addition to making stress management training available to employees, organizations should identify the specific interpersonal skills needed by its members and make sure that training in these skills is readily available. Third, rather than just removing stress "casualties" from the organization after they have burned out, organizations need to be providing competent, confidential counseling and referral services for those who have problems, and they need to reach these people before their problems become overwhelming.

Building and Protecting Health: Organizations can help their members protect themselves by encouraging and supporting good individual self-management practices. This support needs to be manifested through such things as quiet rooms and relaxation instruction; exercise facilities and instruction; and the availability of healthful foods in cafeterias and vending machines. Verbal support of the program, without these tangible manifestations of that support are merely platitudes which employees quickly see through. Finally, task forces can be created (with real tasks and authority!), to further develop long term protection against the kinds of stress which arise when organizational units are overly differentiated from each other and/or often in conflict with each other.

In summary, a good, comprehensive, preventive approach to stress management requires that both individuals and the organization at large assume specific responsibilities. Neither must be allowed to abdicate these responsibilities. The illustrations given above apply to most organizations. Each organization needs to develop its own unique responses to stress on each level.

#### SUMMARY

This chapter closes by returning to the questions raised in the opening paragraphs. Perhaps the most important question to answer is "what results do you want to create?" Many training programs are so busily focused on the process of training and the "latest" techniques that this question isn't even asked, let alone clearly answered.

There are at least three categories of focus or orientation which have a bearing on this question of desired results. First, should the program have an individual focus or will it include systemic issues such as management procedures and corporate habit patterns. Programs which include this systemic focus are most likely to have a sustained positive impact. Without this systemic focus, the most that can be done is to teach people how to protect themselves from their own working environments!

Second, should the program have a single focus (e.g. relaxation techniques) or be as comprehensive as possible? It should be clear from the foregoing that stress is a complex process and that individuals need to establish their own self-tailored response repertoires. Any given focus will work for some and not for others. The broader the focus, the better able people will be to develop a response repertoire that is effective.

Third, should the program reinforce our reactive-responsive programming reacting to the environment and responding to external pressures -- placing the locus of control outside the individual, who never finishes reacting and responding; or should it emphasize the development of a more creative orientation -- placing the locus of control within the individual, who learns to establish clear pictures of the desired life and then operates in ways to realize the results. It is the contention of this chapter that to be truly effective, stress management training programs must foster the emergence of a more creative consciousness than most of us have developed so far.

Stress management training today is often just another training program offered widely in organizations. It CAN have a major effect on individual life orientation and choice making AND on system culture and functioning. The impact a stress management program will have is largely a function of how clearly one answers the question "What results to you want?"

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## CHAPTER 6

### MEASUREMENT AND EVALUATION METHODS FOR WORKSITE STRESS MANAGEMENT PROGRAMS

Gene L. Stainbrook and Lawrence W. Green

#### INTRODUCTION

This review summarizes the main features of the cumulative development of measurement and evaluation in stress management programs in working settings.

#### Definitions of Measurement and Evaluation

Evaluation has been defined variously. Jemelka and Borich (1979) defined it as a process for decision making, Nutt (1981) as a measure of the degree to which objectives have been achieved, and Green (1974) as the comparison of an object of interest against a standard of acceptability. In contrast to basic research, evaluation implies and requires from the onset criteria and procedures for making judgments of merit, value, or worth (Scriven, 1967). Measurement represents the systematic application of procedures for assessing quantities and qualities, whether for purposes of planning or of evaluation.

#### Purposes of Evaluation and Measurement

As a systematic endeavor, evaluation serves two general purposes. One purpose is to assess the impact or effectiveness of products and services in achieving pre-determined objectives. A second purpose is to assess the efficiency of products and services in bringing about any change, but more commonly in achieving pre-established objectives. The assessment of effectiveness requires the detection of a change or effect compared with some absolute criterion or standard. In contrast, the assessment of efficiency requires the detection of change relative to some comparable product or service. Other applications of measurement, besides evaluation, include the assessment of employee needs, experiences, and interests prior to their recruitment into a program.

A common purpose of most program evaluations is to determine effectiveness; specifically whether the program objectives are being met. A second common purpose is to determine the efficiency or comparative effectiveness of two or more programs or methods within a

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program. A third purpose is often to assess the cost-benefit ratio or the cost-effectiveness of the program. A list of general reasons for evaluation adapted from prior summaries (Rossi and Freeman, 1982; Shortell and Richardson 1978; and Weiss, 1972) is displayed below:

- o To determine how effective a program has been in achieving its goals.
- o To examine how efficient a program has been in achieving its goals.
- o To determine the success of a program with different target groups.
- o To study the cost-benefit of a program.
- o To determine the cost-effectiveness of a program.
- o To justify past or projected expenditures.
- o To gain greater control over a program.
- o To determine future courses of action.
- o To contribute to the fields of applied and basic knowledge.

The priority given to particular reasons for evaluation usually depends on the perspective of the program sponsor. For example, executives may be concerned primarily with outcomes and costs, program managers may be interested in program utilization and impact, and participants may be primarily concerned with their own personal interests and satisfaction.

#### Program Planning

The first stage in the development of a stress management program is planning and the first step in planning is the assessment of needs. The care with which a program is planned often determines the quality of the evaluation that can be done. Ideally, considerations of measurement and evaluation should be an integral part of the planning process.

Three basic steps should be used in the planning and determination of the scope and specific direction of stress management programs. These steps are (1) conducting a needs assessment, (2) establishing priorities, and (3) specifying, goals and objectives. Each of these steps will be discussed briefly.



Needs Assessment. The first step in program planning should be to conduct a needs assessment. While the importance of thorough needs assessments to the success of programs often has been emphasized, it still remains a weak component of most programs. The rationale and methods of needs assessments have been detailed by many writers (French and Kaufman, 1983; Rossi and Freeman, 1982; Siegel et al., 1977; Warheit et al., 1977). This topic is treated specifically as it relates to health education and health promotion programs by Green et al. (1980); Parkinson et al. (1982); and Green and Lewis (1986); and as it relates more to mental health programs by Siegel et al. (1977); and Warheit et al. (1977).

The purpose of a needs assessment is to identify and document the type and severity of problems in particular populations. Six objectives of needs assessments have been identified by Green et al. (1980). These are presented in below they apply to worksite programs:

1. To determine the subjective concerns with quality of life in the employee population and with productivity in the employer population.
2. To verify and clarify these concerns with analyses of existing business and social indicators and other available information sources.
3. To document the status of the employee and employer groups in relation to those priority concerns for which there is a health component or cause.
4. To make explicit the rationale for the selection of priority problems.
5. To use the documentation and rationale to justify the further expenditure of resources for the selected problems.
6. Ultimately, to use the documentation and rationale as the bases on which to set objectives and to evaluate the program in cost-effectiveness or benefit terms.

Several strategies are available to determine the type and extent of problems that exist in particular jobs and work settings. Initial steps of a needs assessment include a social or economic diagnosis, an epidemiological diagnosis, and a behavioral diagnosis (Green et al., 1980). The first assesses data on social or economic problems of the company or employees. The epidemiological diagnosis assesses data on the presence of work-related problems, and on the incidence and prevalence of physical and mental health problems contributing to the

social or economic problems in the specific employee population or firm. Another method consists of making comparisons between rates of problem indicators in different work populations.

Comparative data from sources such as the National Center for Health Statistics, the National Institute for Occupational Safety and Health, other agencies of the Department of Health and Human Services, local and state health departments, and other planning agencies are useful in documenting a particular worksite problem. Also, social indicators for particular occupations and communities can be used (Attkisson et al., 1978; Sheldon and Parke, 1975). Soliciting employee views through small group techniques like the Nominal Group Technique (Delbecq, et al., 1971) and the Delphi Technique (Dalkey and Helmer, 1969) also may be helpful.

The use of direct archival data from company records or files provides another source of information. Data on attendance, rates of accidents and injuries, and use of mental and physical health services are useful in establishing program needs. Data from records on use of services, however, must be used cautiously as a basis for an epidemiological diagnosis. Often strong biases exist in the use of services by subgroups of employees and in the reporting of service use (Attkisson et al., 1978). When used alone for epidemiological diagnosis, this information could seriously distort the needs assessment. Use of services does provide a good measure of behaviors associated with health problems, however, and therefore contributes to the behavioral diagnosis.

Key informant surveys can be used to collect information from employees known to have knowledge about problems and needed services. This method can provide valuable insights on both behavior and the next step following behavioral diagnosis--the educational diagnosis. This method provides a more balanced perspective when views are obtained from sectors of the company likely to have contrasting views, such as management and labor (Neale et al., 1983; Martin, 1983).

After establishing the presence of specific behavioral problems, the next major step of a needs assessment is to determine the interest and willingness of employees in the target population to use certain services or to participate in particular programs. This is often accomplished through surveys of employees' prior experiences, current attitudes, and future intentions. As was the case for identifying behavioral problems, techniques such as employee sample surveys, key informant surveys, and the Nominal Group Technique can be useful in determining the interest of employees in specific services or programs. There is no simple formula or ideal way to carry out needs assessments. Perhaps, the best overall strategy for conducting a needs assessment is to use multiple sources for data collection and the method of triangulation to reach final conclusions (Attkisson et al., 1978; Campbell and Fiske, 1959).

Setting Priorities. A second step in the program planning process that is critical to subsequent evaluation is setting the priorities among needs to be addressed. Several formal methods exist for clarifying and prioritizing needs. One of these is multi-attribute utility analysis, which is based on a decision theoretic approach to evaluation (Edwards, et al., 1975).

This approach allows the formal explication and ranking of the objectives of different groups. Each group first defines and ranks its objectives and provides information on those that it considers most useful. Then through the use of Bayesian statistics, the choices are analyzed and reported back to the groups. On this basis, the priorities are reordered. The process of providing information, linking objectives to inferences, and reordering objectives is continued until the groups have taken into account their diverse views. The decision theoretic approach is especially useful when the different stakeholders hold sharply conflicting views and the pool of potential objectives is beyond informal reconciliation.

Goals and Objectives. When the main problems and priorities have been defined, the next step is to develop formally the program goals and objectives. A statement of clear and concise objectives is critical both to the implementation and to subsequent evaluation of the program (McLeroy et al., 1984). It is almost axiomatic that evaluation cannot be conducted objectively unless adequate objectives have been developed.

Methods of specifying goals and objectives have been addressed for many years in educational and service programs (Green et al., 1980; Mager, 1962; Rossi and Freeman, 1982; and Weiss, 1972). The basic purpose of goals is to provide the general direction or orientation of the program and that of objectives to map out the specific procedures and methods. Thus, goals typically are stated in general terms while objectives provide details. The amount of detail provided in objectives often sets limits on the quality of evaluation that can be done.

Objectives should be developed both at the program level and at the individual level. At the program level, objectives should specify who (the target population) will change or will receive how much of what health program, behavior or services; and, by when (the expected date or elapsed time required for measurement of the impact or outcome of the services). The specification of the characteristics of the target population and the program should be very routine but often insufficient details are given. Minimal information about target groups should include basic demographics; age, sex, level of education, income levels, and job types, etc. In worksite programs, facts about the specific characteristics of work also should be provided.

Details about programs and services should include the times and places, and the frequency, intensity, and duration of activities. Information also should be provided on the type of personnel or staff involved in the programs. Objectives for impacts and outcomes often are expressed in terms of expected changes in knowledge, attitudes, behaviors, and physiological or biochemical changes. Facts provided on impact and outcome objectives should include specifics on the amount of change expected, the time when the change is projected to occur, and the expected duration or durability of the change.

An important factor in setting behavioral objectives is the choice of quantifiable outcome measures (Green et al., 1980; Sechrest and Cohen, 1980). It often is necessary for evaluators to spend time with program planners in the early stages of the program development to assist them in articulating objectives that are clear, specific, and measurable. Skilled evaluators with a knowledge of the stress field can help in the selection of impact and outcome objectives that meet these requirements.

Most objectives are stated in terms of the "average" change that is expected to occur in the target group. Sometimes it also is useful to complement the statement of objectives for groups by specifying a set of objectives for individuals. The technique of Goal Attainment Scaling (Kiresuk, 1973) allows goals and objectives to be tailored for individuals. It uses relative rather than absolute measures and allows the progress of individuals to be tracked against their own baselines on a number of variables and thus provides a personalized profile. The results of individuals then can be summed to provide a composite estimate of the program impact.

#### Standards of Acceptability in Program Evaluation

An important early step in planning an evaluation is to consider and decide upon standards of acceptability. In evaluating a program, an object of interest, (usually an impact or outcome measure based on a program objective), is compared to a standard of acceptability. The method of determining whether the object of interest has met a predetermined standard depends on the standard of acceptability selected. Different standards exist against which program effects can be judged. There are both individual and aggregate or group standards.

At the individual level, the acceptable standard of change may be personally defined or defined by professionals. For example, an individual may wish to lower diastolic blood pressure by 5 mmHg without drugs; or the doctor may recommend that a patient must lower diastolic blood pressure by 5 mmHg or must take medications. In either case, the target level of change can be set for the individual and the actual change, within certain time limits, can be evaluated against the personalized standard of acceptability. Also, the technique of goal attainment scaling may be a useful adjunct in establishing individual standards.

At the aggregate level, one or more of five standards of acceptability may be used. A basic description and examples of each of these follows (Green, 1974).

Historical Standards. Current program outcomes are compared to prior program results for comparable persons during a similar time period. For example, if last years' stress management program yielded a 20% reduction in stress-related complaints and symptoms in selected participants, a historical standard of acceptability can be obtained by comparing the results of subsequent programs with last year's 20% reduction.

Normative Standards. Current program effects are sometimes compared with the levels of performance or achievement against regional, national, or international standards. For example, if the object of interest were decreased stress-related symptoms, a suitable standard of acceptability could be a 30% decrease in symptoms reported by employees participating in that program. If this has been shown to be a typical rate of decrease in other stress management programs in industry, it could then be considered a normative standard of acceptability.

Theoretical Standards. Program outcomes can be compared to a theoretical level expected if everything were to go exactly as planned. A theoretical standard is often based on the results of previous research in which interventions have been tested in controlled laboratory or clinical situations. For example, if a demonstration stress management program, conducted by a university-based team of behavioral scientists using state-of-the-art methods yielded a 50% reduction in stress-related symptoms in a group of management level employees, this could serve as the theoretical standard of acceptability for application of the same stress management methods in the "real world" with other management groups and possibly other employee groups.

Absolute Standards. Program outcomes are sometimes compared to the highest possible level attainable. Whereas theoretical standards are based on the premise that everything will go as planned, absolute standards are often even more unrealistic and may never be possible to attain. For example, a 100% reduction of stress-related symptoms among employees, an example of an absolute standard, is neither realistic nor feasible, and probably even undesirable.

Negotiated Standards. Program criteria usually emerge from the compromise and negotiation of several possible standards. A negotiated standard is frequently an average of the preceding standards of acceptability. For example, if other stress management programs yield a 30% reduction of stress-related symptoms (normative), historical standards for this company are approximately 20%, the theoretical symptom reduction for your population is 50%, and the

absolute standard is complete reduction of symptoms (100%), then a negotiated standard could be 35%. That is a weighted average of the other standards that gives greater weight to historical and normative standards than to theoretical and absolute standards.

#### Model for Planning Program Evaluations

A model that can be used to assist in the planning and evaluation of worksite health promotion and stress management programs is presented in Figure 6.1. This model was developed to help conceptualize the overall plan and main strategies for achieving and evaluating progress toward the objectives for the nation in disease prevention and health promotion (Green, et al., 1983). In the model, three levels of objective--process, impact, and outcome--are specified. There are levels of evaluation that correspond to these three levels of objectives.

Evaluation models, monitoring systems, and specific data collection techniques, for each of these levels must be selected and implemented in order to track progress toward the final or outcome objectives. In subsequent sections, levels of evaluation, general evaluation models, and measurement methods appropriate for stress-reduction and management programs in worksettings will be discussed.

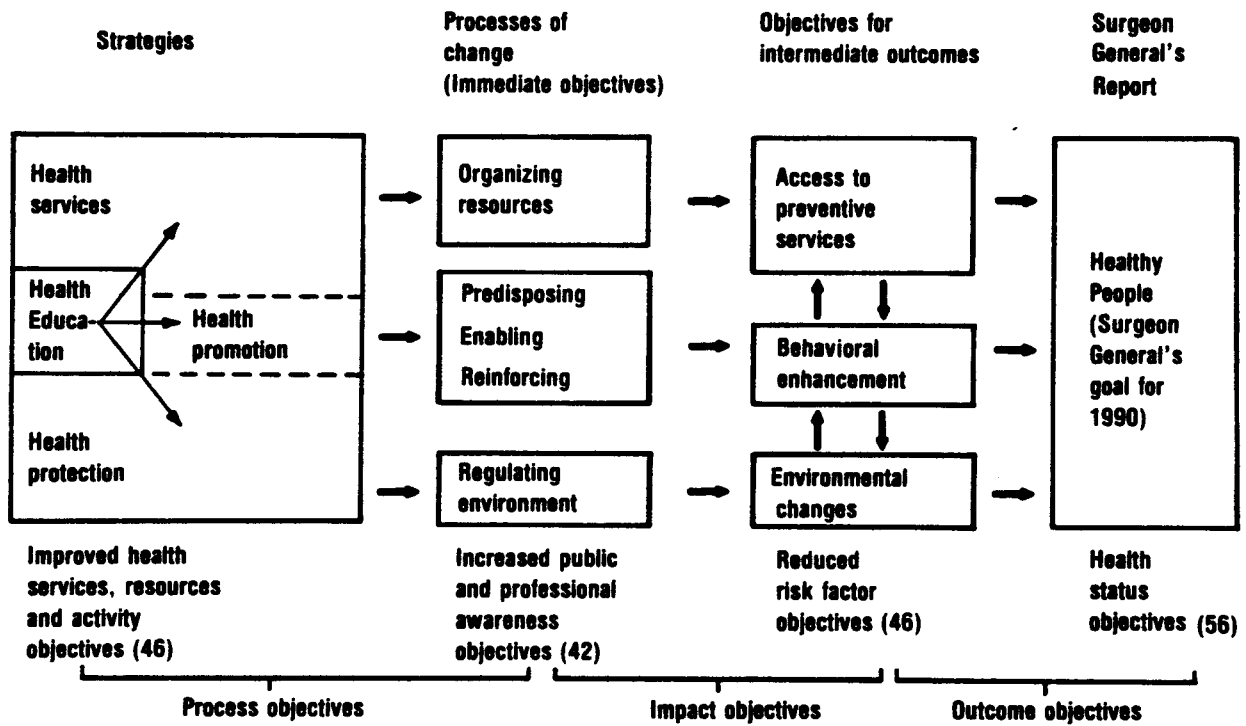
Evaluation efforts can be focused on one or several levels of program objectives. By convention there are three basic levels of evaluation. These are process, impact, and outcome, and each one is treated briefly in the following discussion.

Process Evaluation. In process evaluation, the object of interest is professional or management practice and the delivery of services. The standard of acceptability is appropriate conduct of practice. Common methods of evaluation include quality assurance mechanisms such as peer review, audit, accreditation, certification, and government or administrative surveillance. Informal and formal feedback from service providers and participants also are used.

Impact Evaluation. Impact evaluation typically focuses on the immediate effects of the program on knowledge, attitudes, and behavior of participants. This evaluation is concerned, then, with the more immediate, short-term, goals of the program. Knowledge, attitudes, and other predisposing, enabling, and reinforcing factors influence behavior that relates to reduced exposure to risks, reduced delay in use of preventive health services, and decreased lead time in diagnosing and treating disease. The most widely comparable standard of acceptability against which to evaluate an impact is cost-effectiveness because it uses a common metric in the numerator (dollars) and a common denominator (unit of impact) (Green et al., 1980).

Figure 6.1

Figure 1. Structure and logical relationships of the Objectives for the Nation in disease prevention and health promotion



From Green, Wilson, and Bauer, 1983, p. 19

Outcome Evaluation. In the outcome evaluation of preventive medicine programs the main objects of interest usually are morbidity and mortality. In the case of morbidity, the years of productive life and length of survival following detection and the treatment of the conditions also are important variables. Stress management program outcomes also may be expressed in terms of work-related variables. Stated in their most succinct form, the standards of acceptability are cost/benefit estimates, where the benefits may be stated in company savings or profits, or stated in their most humanistic form, improved quality of life of workers.

Currently, improved evaluation of stress management programs is needed at all three of these levels. Unfortunately, generally accepted criteria and standards do not exist against which to judge the qualifications of providers. Also, standards for assessing the methods and procedures of programs have not been developed. Thus, considerable work needs to be carried out to strengthen the measurement of process and to obtain consensus on the standards of acceptability.

A substantial amount of work has been done in the assessment of the impact, i.e., short-term effects, of programs (Murphy, 1984; McLeroy et al., 1984). Nevertheless, several problematic issues plague evaluation at this level. Some of these will be discussed at greater length in the section on measurement. The relationship of the short-term effects have not been related clearly to more long-term indicators. Very little work has been done on estimating cost-benefits and cost-effectiveness. Improved measurement and documentation of impact on knowledge, attitudes, and beliefs, and especially behavioral and environmental changes related to outcomes is necessary. Thus, more work on impact evaluation is needed.

Both scientific and financial barriers limit the likelihood of good outcome evaluation of stress management programs in the near future. The evidence linking particular sources of environmental stress and personal coping behaviors to short- and long-term indicators of work performance and health is not strong. Also, very few reports on good comparative short-range or impact studies have been published. Finally, clinical trials large enough to link stress and stress reduction interventions to work performance, and especially to morbidity and mortality, would be expensive. No funding mechanism has offered to support such costly, large-scale, long-term studies.

### Evaluation Designs

Many designs are available for use in program evaluation. The most appropriate design depends on the logistical circumstances of the program and the available resources. The decision to use a specific design for evaluation should be based on several considerations. An estimation both of practical importance and potential scientific value



of the study should be made. When research is a major emphasis the main threats to the validity of the conclusions that might be drawn from the design must be considered (Cook and Campbell, 1979; Green and Lewis, 1986). A sound choice of designs also requires recognition of the practical, ethical, and financial constraints on the conduct of the study. For example, issues of informed consent and denial of services to control groups put constraints on many potential evaluation activities.

There are some basic procedures that can always be used. Other very elaborate designs can be used only when logistics are favorable and substantial funding is available. By adding successive elements to the basic procedures, it is possible to increase progressively the level of internal validity or rigor and also the level of external validity or generality. Elements of evaluation designs will be discussed in the next section.

Six different evaluation designs are listed below. These designs increase in complexity and cost of implementation from 1-6. The historical and inventory approaches are basically bookkeeping techniques, the comparative and controlled comparison approaches allow effectiveness estimates, and the controlled experimental and full-blown evaluative research project allow causal inferences and generalizations to be made with maximum assurance. Examples of worksite based health programs that were evaluated through the inventory and other approaches may be found in Green and Lewis (1986) and Parkinson et al. (1982).

1. Historical, Record Keeping Approach
2. Inventory Approach
3. Comparative Approach
4. Controlled Comparison, or Quasi-experimental Approach
5. Controlled Experimental Approach
6. Full-Blown Evaluative Research Project

Historical Approach. When an evaluator sets up a continuous record-keeping procedure to accumulate data and then periodically charts the data to determine if change is occurring, a historical standard of acceptability has been applied. The frequency of data collection depends on how often the events that are being recorded occur. This very basic approach generates data that can be presented in charts and graphs to demonstrate how the program is doing. Collecting and charting data in this way provides periodic benchmarks

against which to compare both previous and future program efforts. The rates of problem indicators can be plotted against program inputs over time and be presented as time-series graphs or frequency polygons.

Inventory Approach. Source data cannot be collected continuously. An evaluator must collect data at specific intervals and compile them at specific points in time--at least at the beginning and end of the program. Target dates for interim assessments can be set, expected outcome levels must be identified, and observations made or sample surveys performed. For some type of programs, the critical measurement points have been standardized (e.g., smoking cessation at 1 1/2, 3, 6, and 12 months). These intervals also would be applicable to most stress management programs.

Comparative Approach. The standard of comparison can be the results of programs completed in other settings. It is therefore necessary that the evaluator identify similar programs carried out in other settings and then borrow or buy the standardized instruments for collecting data. Comparative evaluations between companies also can be done if standardized methods and procedures are adopted. Thus, use of standardized procedures allows comparisons both of results obtained in other settings and with future results in the same company. Data from a particular program also can be compared with national data. Again, such normative comparisons are greatly facilitated if standardized instruments are used for data collection whenever possible.

Controlled Comparison, or Quasi-experimental Approach. When the evaluator identifies a population for comparison that is similar to the target population but is not receiving a stress management program, the quasi-experimental design is applied. The historical or inventory method is then applied both to the target population and to the comparison population, which are then periodically compared. This approach reduces some of the threats to internal validity that weaken the two prior designs.

Controlled Experimental Approach. This approach is comparable to the clinical trial in medical research. The evaluator establishes a formal procedure for randomly selecting the persons within the study population who will participate in the experimental stress management program and those who will not, a control group. Use of this approach requires a situation in which it is possible to deny the program to some individuals. The evaluator collects identical data at similar intervals in both the experimental and control groups and tracks their progress over time.

Full-blown Evaluative Research Project. This approach is not feasible for most worksite based stress management programs. In this design the strategies from the controlled experimental approach are applied

within one worksite population. Two or more groups are randomized to systematically varied combinations of program elements, and multiple measurements are obtained. Each group receives a different mix of stress management interventions (e.g., group A, relaxation training alone; group B, relaxation training plus biofeedback; group C, biofeedback training alone; group D, no program). Such designs have been used in the evaluation of several stress management programs (Murphy, 1984; McLeroy, et al., 1984).

### Selection of Evaluation Measures

The selection of specific measures both of individual and of organizational characteristics is a critical step in program evaluation. Making decisions about what to measure is often neither simple nor straightforward. There is a large increase in the number of potential, relevant, variables when one moves from the field of basic research to that of program evaluation. Furthermore, the selection of variables and measurement strategies in the stress field is particularly difficult since there is a very large pool of potential measures to choose from. Two general criteria, relevance and feasibility always should be considered in the selection of measures.

Relevance. Relevance is the first factor that should be considered in the selection of measures. A measure can be considered relevant to the extent that it either measures directly a specific object of interest or behavioral objective or provides a good approximation of it.

The selection of a particular measure or set of measures should reflect a balance between the major objects of interest of the sponsors and recipients of the program and evaluation, the standards of acceptability that they are willing to apply to those objects, and the criteria of ethical and scientific merit that can be applied to the objects. The objects of interest may be one or more elements of process, impact, or outcome as shown in Figure 3.

The issue of relevance often is decided in the needs assessment and objective setting phases of a program. The specific objectives of programs often largely determine what is measured. When objectives are poorly conceived and loosely stated, they provide little guidance for the selection of measures. Thus, time and money can be wasted by placing emphasis on the detailed measurement of variables that have little relevance to goals and objectives. However, if program objectives are well developed and clearly stated they usually direct attention to the general factors and sometimes the specific variables of greatest importance. Therefore, the precise statement of objectives is critical to the selection of the variables to measure and monitor in programs.

Relevance, however, is a highly subjective factor and depends on the views of major shareholders or stakeholders in the program. The issue of the relevance of measures has been analyzed in terms of the different needs and priorities of administrators, researchers and clinical perspective (Green et al., 1980).

Often, there are several identifiable groups, sometimes with conflicting views, who have an interest in program design and outcomes. In the case of stress management programs, management, labor unions, clinical practitioners, and researchers or evaluators, all have different interests and sets of priorities. Therefore, what is relevant to one group may be much less relevant to another. Failure to consider the relevance of measures for different groups affected by a program can seriously compromise the program outcomes and usefulness of the evaluation results.

Thus, in addition to the scrutiny of program objectives, it is sometimes important for evaluators to distance themselves from the major assumptions of the program sponsors and to analyze the theoretical or conceptual framework and the particular biases that guided the program development. A critical analysis of the theoretical framework, and political-economic rationale for a program can suggest additional variables that may not have been specified in the objectives. These may be highly relevant when considered in a broader social and ethical framework.

Feasibility. Feasibility refers to the practical issues of making measurements and obtaining data. Some of the basic factors that affect feasibility are access to the data, technical expertise (ability to make measures), cost of making the measurements (equipment, personnel and timecosts to company and employees), and ability to track participants over time. All these factors need to be given some consideration in selecting measures. Feasibility should not, however, be equated with appropriateness of measurement. Unfortunately, in many stress management programs, measures have been chosen primarily because they are inexpensive and easy to use. Changes in these variables may have very little clinical, economic, or scientific significance.

### Technical Features

In addition to the previously discussed general criteria, there also are several technical features of measurement techniques that should be considered. Three important criteria are level of measurement, reliability, and validity.

Measurement, by definition, is the assignment of labels or numbers to objects, events, or persons according to specified rules. Measurements require first, specification of the objects to be measured, second, the labels or numbers to use, and third the rules by

which the labels or numbers are assigned to objects. In program evaluation, measurement refers to the systematic procedures applied to the objective quantification of needs, processes, impacts, and outcomes.

Levels of Measurement. An understanding of levels of measurement is necessary to determine how the various forms of measurement set limits on the statistical procedures that can be used in the data analysis.

By convention, there are four levels of measurement: nominal, ordinal, interval, and ratio. The nominal level is considered the lowest, ordinal and interval intermediate, and ratio the highest. These four levels of measurement along with their definitions, and a summary of some of the statistical tests that can be applied at each level are presented in Table 6.1. A number of books provide detailed discussions of levels of measurement and their characteristics (Green and Lewis, 1986; Siegel, 1956; Windsor et al., 1984).

From a technical perspective, it is preferable to select data collection techniques that allow the ratio, or highest, level of measurement to be used. This maximizes the ability to distinguish between background noise or variance and specific treatment effects. Higher levels also permit use of a wider range of statistical tests and more powerful statistical procedures in the data analyses. Using sophisticated statistical tests enhances the likelihood of detecting program-specific effects and distinguishing them from non-program effects.

Regardless of how creatively designed, well controlled, and smoothly executed an evaluation design is, it is only as good as the measures from which data are derived. Inappropriate and inadequate or "noisy" measures will impair and can totally compromise the quality of the most elaborate and expensive evaluation. Thus, careful attention should be given to measurement instruments and techniques.

### Reliability and Validity

Accuracy in measurement is traditionally viewed as a combination of two separate issues, reliability and validity (Bernstein, 1976).

Reliability. As generally used, reliability refers to the extent to which an instrument is consistent. It is important, however, to distinguish clearly between reliability as relative freedom from error and stability.

Reliability coefficients are affected by the variance of the scores upon which the correlation coefficient is based, and the reliability of an instrument typically increases with the homogeneity of scores. However, a reliability coefficient is as much a function of the population being assessed and the conditions under which the

TABLE 6.1 LEVELS OF MEASUREMENT AND EXAMPLES OF NUMERICAL PROCEDURES APPROPRIATE TO EACH.

<u>Levels of Measurement</u>	<u>Comments</u>	<u>Permissible Numerical Procedures and Statistics</u>
<b>Nominal</b>	<p>Categorizes subjects, events, or objects. Numbers assigned have no numerical meaning - i.e., cannot be added or rank ordered.</p>	<ol style="list-style-type: none"> <li>1. Frequency counts</li> <li>2. Frequency statistics - e.g., chi square, percentages, contingency coefficients<sup>b</sup></li> </ol>
<b>Ordinal</b>	<p>Rank orders subjects, objects, or events. Numbers indicate rank but not absolute numerical quantity. As such, numbers cannot be added or subtracted.</p>	<ol style="list-style-type: none"> <li>1. Frequency counts</li> <li>2. Frequency statistics - e.g., chi square percentages, contingency coefficients</li> <li>3. Ranks determined</li> <li>4. Rank-order measures - e.g., rank-order correlation coefficient; Kendall's W</li> </ol>
<b>Interval</b>	<p>Distances between number are assumed to be equal in size. Intervals can be added or subtracted but only with understanding that it is intervals, not absolute numbers, that are involved in computations.</p>	<ol style="list-style-type: none"> <li>1. Frequency counts</li> <li>2. Frequency statistics - e.g., chi square, percentages, contingency coefficients</li> <li>3. Ranks determined</li> <li>4. Rank-order measures - e.g., rank-order correlation coefficient; Kendall's W</li> <li>5. Summated ratings</li> <li>6. Mean, t-tests</li> </ol>
<b>Ratio</b>	<p>Scale has an absolute or natural zero point that possesses empirical meaning. Numbers on scale represent the actual amount of property measured. Numbers can be added and subtracted as well as divided.</p>	<ol style="list-style-type: none"> <li>1. Frequency counts</li> <li>2. Frequency statistics - e.g., chi square, percentages, contingency coefficients</li> <li>3. Ranks determined</li> <li>4. Rank-order measures - e.g., rank-order correlation coefficient; Kendall's W</li> <li>5. Summated ratings</li> <li>6. Mean, t-tests</li> <li>7. Analysis of variance</li> <li>8. Correlation analysis and all other parametric tests</li> </ol>

<sup>a</sup> Levels are ordered from the lowest (nominal) to the highest (ratio) level of measurement.

<sup>b</sup> For a detailed discussion of statistical assumptions underlying nonparametric statistics see Siegel (1956).

<sup>c</sup> The list of statistical operations is suggestive, not exhaustive.

From Green and Lewis (1985).

instrument is administered as it is a function of the psychometric qualities of the instrument. Such variations in testing or measuring as enthusiasm of the tester, motivation of the respondents, and even room characteristics such as temperature and humidity can all affect reliability coefficients. Reliability is most usefully conceptualized as a set of statistical, and situational conditions which affect the error in the stability of data gathered by a given instrument (French and Kaufman, 1983).

Validity. On the other hand, validity is the accuracy with which a measurement instrument or procedure measures what it was intended to measure. It is possible to have a highly reliable instrument that is measuring the wrong impact or outcome. Validity only can be determined by obtaining independent measures of the same impact or outcome and comparing the results (Campbell and Fiske, 1959; Green and Lewis, 1986; Windsor et al., 1984).

### Measures of Stress

In the stress field, it is a much easier task to provide general criteria for measurements than it is to suggest specific variables that should be chosen. Before providing suggestions for the selection of specific measures of stress at both the individual and organizational level, it may be instructive to look briefly at why this process is so complex.

First, no satisfactory definition of stress or specific goals and objectives for stress identification and reduction were proposed in Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention (USDHEW, 1979), or in Promoting Health/Preventing Disease: Objectives for the Nation (USDHHS, 1980b). The Institute of Medicine (IOM) of the National Academy of Sciences subsequently completed a status report on the relationship of stress to health (Elliott and Eisdorfer, 1982). On the basis of this comprehensive task force report, it was decided that it was not feasible to get a consensus on a general definition of stress. Instead, a conceptual model for the study of stress was proposed. In this model, the stress concept was divided into four major domains: 1) stressors or sources of stress, 2) reactions, 3) consequences, and 4) mediators.

The model and each of the four domains of variables is discussed in detail in the IOM Report. In principle, variables should be looked at in each of the domains. This would provide the most complete perspective on the nature of stress-related problems and the dynamics of intervention program process, impact, and outcomes. However, in practice this generally is not feasible as most stress management programs rarely have large budgets for research and evaluation. Therefore, a great amount of selectivity must be used in choosing variables. The following discussion will focus on measures of sources of stress and reactions to stress since these have been studied most carefully and are feasible to measure in low budget programs.

Sources of Stress. Sources of stress and potential solutions to stress-related problems have been identified at both the organizational and individual levels. Sources of stress at the organizational level can be divided broadly into categories of physical and psychosocial stressors.

Organizational Level. Different types of physical stressors have been studied carefully in the laboratory and have been identified in work settings. They have been discussed in many reviews (USDHEW, 1978a, b; USDHHS, 1980a; Holt, 1982; Neale et al., 1983).

Holt has listed five categories of physical properties of working environments that can be sources of stress. These are 1) physical hazards, chronic dangers, 2) pollution, less immediate dangers, 3) extremes of heat, cold, humidity, and pressure, etc., 4) noise, and 5) bad man-machine design. Shift work is another physical property of jobs that may be a source of stress for many workers.

Most of these sources of physical stress can be measured objectively, and with a high degree of reliability and validity. In some cases, standards exist which can be used in the regulation of the levels of some of these stressors. However, individual tolerances vary widely, so the performance of employees should be observed, and subjective, self-reports of workers about the aversiveness of these factors should be obtained. Given the initial differences in tolerances among individuals for potential sources of physical stress, and differential abilities to adapt, multiple sources of input must be obtained to establish the degree of stressfulness of these physical factors.

Over the past 20 years, much progress has been made in identifying sources of psychosocial stress in work environments. A number of properties of system design and job content appear related both to job satisfaction and to health (Elliott and Eisdorfer, 1982). Those that have been studied most carefully include the following:

- o. Quantitative overload: too much to do, excessive time pressure, or repetitious work flow in combination with one-sided job demands and superficial attention.
- o. Qualitative underload: too narrow and one-sided job content, lack of stimulus variation, no demands on creativity or problem solving, and low opportunities for social interaction.
- o. Lack of control: especially in relation to pace of work and working methods.
- o. Lack of social support: inadequate social networks with fellow workers and lack of support from supervisors.



Several of these organizational characteristics appear to interact synergistically to impair mental and physical health. For example, Swedish workers with high work loads and low control over the work were found to have higher rates of morbidity and mortality than workers with moderate loads and higher control over the work situation (Ahlbom et al., 1977; Karasek, 1979; 1981). The high-load, low-control workers showed more symptoms of excessive fatigue and depression, and higher rates of cardiovascular disease and overall mortality.

Besides the fact that these four job dimensions have been linked through epidemiologic studies to mental and physical health problems, another advantage in their use is that they can be measured both objectively and subjectively. Most assembly line or production jobs, and many blue collar jobs, can be rated independently by outside observers for characteristics of overload and underload and level of control. Thus, rough "objective indices" of the stressfulness and the relative risk for health problems of different occupations can be developed. However, since the demands of many jobs are dynamic rather than static, these general indices should be supplemented with surveys of the ratings of employees in specific companies on these job characteristics.

Other potential sources of psychosocial stress in work settings are role related factors such as role-ambiguity, conflict, and strain. Poor person-environment fit (PE-fit) is an additional possible source of stress. While these measures have been used frequently in the past, information on them can be collected only through subjective, self-reports. Thus, job types cannot be classified independently in terms of these factors. Furthermore, while these factors have been associated with conditions such as job dissatisfaction, they have not been found to be strongly predictive of mental or physical illness. Despite recent criticisms of the utility of these variables in stress research (Baker, 1985; Kasl, 1984), they still may be useful if their limitations are recognized. Jenkins et al. (1984) have provided a review and discussion of many of the available instruments to measure role-related factors and person-environment fit. This review provides a brief description of the scales and information on their reliability and validity.

Individual Level. Potential sources of stress also can be identified at the individual level through the study of personal characteristics and patterns of social interaction. Personal factors that may increase the likelihood of stress at work include, anxious-tense personality, low self-esteem, Type A personality, poor communication skills, poor assertiveness skills, and minor and major forms of psychopathology that interfere with technical work performance and social interactions. Factors outside of work that may increase the likelihood of job stress include alcohol and other drug problems, poor nutrition and lack of exercise, financial and legal problems, and social and family problems.

Given the range and complexity of many of these personal factors that may increase the likelihood of work-related stress, there is no easy way to define and isolate individuals' susceptibility. Thus, several different approaches should be used to identify the type and severity of stress producing factors at the individual level.

When the purpose is to screen a relatively large number of employees who are functioning reasonably well, self-report inventories may be used. A number of life events scales are available which allow estimates to be made of the amount of stress that persons are under. Some of these scales are reviewed by Jenkins et al. (1984). Also, an instrument is available to measure more proximal and frequently occurring daily hassles (Kanner et al., 1981).

Since the specific types and general pattern of major life changes and hassles that can occur at work may differ greatly for different occupations and companies, questions may need to be specifically tailored. Often this will require the development and use of semi- or unstructured techniques. Martin (1983) has reported on the use of semi-structural techniques in obtaining data on stress in the graphic arts industry. The advantage of these techniques are their flexibility and ability to provide details on specific problems that are sources of stress to employees on particular jobs.

Baseline information on physical health habits can be collected conveniently and relatively expensively through the use of self-report, health-risk appraisals. Information on the availability and characteristics of a large number of health risk appraisals has been summarized in a recent publication (Green and Lewis, 1986). Details and a discussion of the prospects for the use of health hazard appraisals are provided in a recent technical report (Breslow et al., 1985).

Reactions to Stress. Sources of stress have been implicated in psychological, behavioral, and physiological/biochemical changes. There is strong empirical documentation and a voluminous literature on short-term reactions to sources of stress (Cincirpini et al., 1984; Stainbrook and Green, 1983). However, while it has been suggested that stress contributes to long-term mental and physical health problems the strength of the relationship between individual stressors or collective indices of stress and these health status indicators is not strong (Baker, 1985; Kasl, 1980, 1984).

Some of the psychological, behavioral, and psychosomatic problems that commonly have been associated with stress are presented in below:

<u>Psychological</u>	<u>Behavioral</u>	<u>Psychosomatic</u>
Anxiety	Smoking	High blood pressure
Depression	Alcohol use	Tachycardia
Anger	Drug use	Headaches
Low job satisfaction	Disturbed relationships	Ulcers
Low self-esteem	Violent behavior	Sleep problems

Several different psychometric instruments have been used to assess the levels of stress-related psychological symptoms in populations of workers. The Symptom Checklist 90 or SCL-90R often has been used and has scales for anxiety, depression, and anger and is a good general screening instrument (Derogatis, 1975). Anxiety frequently has been measured with the Spielberger State-Trait Anxiety Scale (Spielberger et al., 1968). This instrument, particularly the state component of the scale has been found to be a sensitive indicator of stress in non-clinical and work populations. Many self-report schedules can be used to measure job-satisfaction. Jenkins et al. (1984) have reviewed those instruments most commonly used to measure job satisfaction. Self-esteem also can be measured with a number of different questionnaires (Gilberts, 1983).

Behaviors that may be stress related can be screened with health hazard appraisals or with instruments designed to obtain extensive information on the specific behaviors, e.g., surveys of smoking, alcohol use, and drug use, etc. Data on disturbed relationships and violent or aggressive behavior can be collected through interviews with the employee, fellow workers, and family members, and sometimes through observations.

Information on many psychosomatic problems can be collected with self-report instruments like the SCL-90R or more informal checklists. If resources are available, the validity of self-report information can be checked through medical record searches. Also, in the case of tachycardia and high blood pressure direct measurements can be made.

It also can be helpful in the selection of measures to examine carefully the indicators of stress that have been used in prior stress management programs. The impact and outcome measures used in many

prior studies have been summarized in three recent reports (Chen, 1984; McLeroy, et al., 1984; and Murphy, 1984). The dependent variables that were measured most frequently in the 19 prior stress management programs reviewed by McLeroy et al. (1984) are presented in below:

<u>Variable</u>	<u>Frequency</u>
Anxiety (trait=5, state=1)	6
Muscle tension	5
Stress symptoms	5
Perceived job stress	5
Blood pressure	4
Hand temperature	3
Job satisfaction	3

Of these seven variables, four (anxiety, stress symptoms, perceived job stress, and job satisfaction) are subjective measures that depend entirely on self-reports. The three other variables (muscle tension, blood pressure, and hand temperature) all can be measured objectively by independent observers with monitoring equipment. Typically, it is preferable to choose variables that can be measured objectively. However, the other general criteria that were discussed previously, namely, relevance and feasibility also should be given careful consideration, as well as two other factors, sensitivity and representativeness.

Sensitivity to Change. An additional issue that should be considered is the likelihood of effecting reductions in the levels of the impact and outcome indicators through the types of programs being offered. The results of the stress management studies reviewed by Murphy (1984) and McLeroy et al. (1984), suggest that most of these variables are sensitive and can be reduced acutely by relatively low-cost programs. However, the long-term health implications of these changes and the cost-benefit and cost-effectiveness of most stress management programs have not been studied.

There are other variables that would be relevant outcome measures for some stress management programs and would allow better cost-benefit and cost-effectiveness estimates than most of the previously discussed measures. These include absenteeism, turnover, health services expenditures, health insurance claims, and disability and workers' compensation payments. To date, very little study of these variables has been done in relation to stress management programs. The issues of cost-benefit and cost-effectiveness analysis will be considered in the next section.

Representativeness. Another issue that should be looked at carefully in the selection of measures is that of representativeness. Representativeness is a term that typically is applied to the type of sampling techniques that are used, but it also applies in the selection and use of measures. Measurements of some variables have limited clinical significance unless they are representative, or sample important domains of the environment and individual behavior. Sometimes increasing the representativeness of measures requires substituting informal data collection techniques for more formal or standardized measures. This means that some reliability may have to be sacrificed. However, there can be significant gains in validity.

Standardized psychometric scales often are given only to persons before and after programs. While they are useful for general screening purposes, they often do not provide accurate data on the frequency and intensity of moods or symptoms at work and do not reflect how much they interfere with work performance. Since most standardized scales cannot be given frequently or during work, they should be or supplemented by less formal but more frequently administered measurement techniques such as daily stress logs. The use of daily stress logs or diaries allow employees to record sources of stress and their reactions to them both at work and at home. Persons also can rate the severity of symptoms and estimate the amount of work time lost for specific stressors and their reactions. This allows rough estimates of the costs of stressors and stress reactions and thus provides a baseline against which the cost effectiveness of programs can be calculated (Manuso, 1983, 1984).

While physiologic variables often can be measured with a high degree of accuracy and precision, they frequently are not representative. Thus, their utility as clinical predictors of impact and outcome is highly limited. For example, blood-pressure level often is used as a dependent variable in stress management programs. Usually, blood pressure is measured only in a clinic and not in the work environment. The measures in the clinic may not accurately reflect the blood pressures at work and may be less predictive of hypertension (Sokolow et al., 1980; Pickering et al., 1982). Failure to obtain representative measures may result in false positives or false negatives -- both diagnostic errors -- and inaccurate estimates of program effectiveness. Thus, while stress management programs may lead to reductions in pressures taken in the clinic they may have little impact on the pressures during work. Many of the stress management training studies on treatment of essential hypertension have been criticized for their failure to demonstrate the generalizability of blood pressure lowering. The representativeness of blood pressure measurements can be improved by training individuals to take their own blood pressures in home and work settings and through the use of automatic-monitoring devices (e.g., Bertera and Guthrie, 1984; Pickering et al., 1982).

While knowledge of previously used variables and the impact of programs on these indicators is useful, these variables should not be tacitly chosen in subsequent studies. Frequently, systematic biases exist in the ways that program objectives are set and measures are selected. For example, most of the programs reviewed by McLeroy et al., and Murphy strongly reflect the biases of clinicians, behavioral researchers, and management. Most of these programs might best be termed symptom-reduction programs. In many cases, the variables that are measured are not relevant to participants. Furthermore, the exclusive emphasis of these programs on the reductions of physiologic reactions to stressors and stress-related symptoms has recently come under criticism from organized labor. The primary complaint has been that the exclusive emphasis on individuals represents a strong psychological bias and avoids management responsibility for environmental factors. It is pointed out that in most cases no attempts are made to identify and minimize sources of stress in the workplace (Lerner and Shore, 1982; Neale et al., 1983; Tesh, 1983).

The preference for physiological indices reflects other biases. First, many of the measures have been standard measures in laboratory-based research; thus, they have an aura of credibility or scientific merit. Second, most of them can be measured with physical techniques and expressed as interval or ratio measures. Third, most of the measures are highly reactive and are subject to being reduced with short-term interventions. Therefore, the chances of getting a positive effect are good which increases the chances for publication of the findings. The relationship of short-term reactions to stressors to longer-term, outcome measures has not been firmly established. The findings thus may be of interest and may serve a purpose in a narrow research or academic context but may have little practical, clinical, or administrative meaning outside these contexts.

#### Critical Issues in Program Evaluation

Cost-Benefit and Cost-Effectiveness. Cost-benefit analysis and cost-effectiveness analysis are logical extensions of evaluation research. The procedures are based on the assumption that judgments about either costs or benefits of programs cannot be made without relating them to each other. In order for the value or merit of a program to be determined either in dollar amounts (cost-benefit analysis) or in relation to available alternatives (cost-effectiveness analysis) there must be some evaluative evidence, i.e., impact or outcome results (Weiss, 1972; Rossi and Freeman, 1982; French and Kaufman, 1981).

These analyses can provide valuable information to program managers and policy makers in a variety of ways. Some of their major uses are summarized below:

- o To account for the use of public and private funds
- o To compare the efficiency of the operation
- o To compare the cost of alternative services or programs
- o To determine allocation or reallocate of resources.

In some cases government organizations are the primary source of funds for prevention programs. In most cases, the costs of stress management programs have been borne by individual companies. Cost analysis can answer questions regarding the efficient use of resources and the optimum size of a program, etc. Cost analysis also can be used to compare alternative methods of providing services or programs. With cost data on alternate methods for providing prevention services, the analysis seeks to identify the least costly program alternative that can accomplish the desired objective. Information on the costs and effectiveness of alternative programs or methods within a program can help program managers to modify or improve the process of the program or to reallocate resources to alternative programs.

Cost-benefit Analysis. Cost-benefit analysis reduces all outcomes to monetary terms. This allows the direct comparison of programs with different outcomes. In order to conduct cost-benefit analyses several things must be known. First, it must be possible to estimate the effectiveness of the programs. This step requires estimating the reduction in morbidity and mortality; calculating the direct cost of the treatment or other services that may be averted; figuring the indirect value of income which would be lost if the person continued to exhibit certain problems; and estimating the money saved through the reduction of the problems. Second, the operational costs of running the program must be determined. Third, a monetary value must be placed on the expected outcomes. When information is available on two or more programs, cost-benefit data allows comparisons between programs. Given the right set of conditions, the use of cost-benefit analysis is very useful. However, in many disease prevention/health promotion programs there is insufficient information available to carry out this type of analysis. Methods and procedures for conducting cost-benefit analyses have been discussed in detail (Green and Lewis, 1986; Rossi and Freeman, 1982; Shepard and Thompson, 1979).

Limiting Conditions. Often the access to medical records and insurance claims forms is limited; the benefits of health programs cannot be defined easily in concrete terms; and even when outcomes can be clearly defined and measured, and usually it is difficult to place dollar amounts on them. In the case of stress, the epidemiologic evidence linking specific sources of stress to particular long-term effects or outcomes is not very strong. The best case has been made for its association with elevated blood pressure. While there is evidence that stress management programs can have short-term impacts on blood-pressure and other physiologic variables, there are few long-term data. Thus, their effect on morbidity and mortality is not known.

Another complication is that ethical problems may arise in the use of cost-benefit analyses. For example, when employee preferences are weighted heavily in the calculation of value, more persons may be willing to pay for and/or use personal time to attend weight loss classes rather than to participate in smoking cessation and alcohol treatment programs. This presents a problem in decision making because the likelihood of success and potential payoffs of the latter are greater. Also, when earnings are used to calculate the indirect costs of absenteeism and lower productivity related to symptoms of stress, those with the highest incomes such as top management and professionals will be assigned a higher value than clerical and blue collar workers. Typically, most stress management programs have been offered first to management and possibly later to clerical and blue collar workers. Thus, cost-benefit or pay-off projections already have been operating in decisions about allocation of resources.

Given the number of limitations in conducting cost-benefit analyses of most health promotion programs, it has been suggested that cost-effectiveness analyses may be more appropriate for most of these programs at their current stage of development and cost-benefit analysis should be limited to valuation of immediate outcomes (Green and Lewis, 1986).

Cost Effectiveness. In contrast to cost-benefit analysis, cost-effectiveness analysis does not require that program impacts or outcomes be reduced to monetary terms. Instead, the respective costs of a number of alternative strategies or programs for achieving a desired end are compared. Therefore, cost-effectiveness analysis generally is an easier approach to use in health promotion program evaluation. Its main limitation is that it does not allow the comparison of programs with different outcomes.

There are four basic steps in most cost-effectiveness analyses: 1) definition of program objectives; 2) computation of the program's net monetary costs; 3) definition of program outcomes; and 4) conduct of a sensitivity analysis. As this process has been discussed in detail by



several authors (Green and Lewis, 1986; Rossi and Freeman, 1982; Shepard and Thompson, 1979), it will be discussed only briefly in this chapter. The processes of setting specific objectives and selecting measurable outcomes have been discussed in an earlier section, so will not be dealt with here. Steps two and four will be considered briefly.

Computation of the monetary costs of programs requires that costs to both sponsors and participants be considered. Sponsor costs include staff, space, materials, telephone, postage, etc. Participant costs often include time, transportation, child care, etc. Potential indirect or side effects with associated costs also should be considered. For example, exercise programs carry a small risk of injury that can be estimated from experience. If a program results in such costs they should be included in the calculations. This procedure is sometimes called "risk-benefit analysis."

The final step of a cost-effectiveness analysis is to run a sensitivity analysis. The purpose of this procedure is to vary the basic assumptions, e.g., participation rates, compliance rates, etc., and to figure the worst as well as the best possible cases. This process is discussed in detail by Shepard and Thompson (1979).

Confidentiality. The confidentiality of information in worksite health promotion programs should be given careful attention (Alderman, 1984; French and Kaufman, 1981; Kiefhaber and Goldbeck, 1984). In all worksite based preventive medicine and health promotion programs confidentiality and job security and sensitive issues. Data from insurance claims, medical examinations, employee assistance programs, mental health programs, and health risk assessments are subject to many uses. Some of these may not be in the best interests of employees. Both individual employees and union leaders have expressed concern about the possible misuses of health data made available to employers. There is fear that such information could secretly be used in decisions about job assignment, promotion, or termination. Certain diagnostic labels present more problems than others. For example, drug abuse, alcoholism, and epilepsy, and are feared to be grounds for not hiring, denying promotions, and forcing early retirement or even dismissal.

The acceptance and success of some worksite based screening and intervention programs has depended on the degree to which confidentiality and job security were guaranteed (Alderman, 1984; Masi and Teems, 1983). If guarantees of confidentiality are not provided often programs will not be accepted.

Research and evaluation activities should be guided by high integrity and a strong respect for human dignity. Thus, evaluators should not engage in activities which compromise or infringe on individual rights. In addition to the considerations of ethics at the individual

level, ethical issues also should be considered at the organizational level. Ethical issues in organizational research have been treated in two recent publications (Mirvis and Seashore, 1979; Evaluation Research Society, 1980).

Informed Consent. Prominent among the principles that should guide evaluators is that of informed consent. The principle of informed consent requires that an evaluator secure in advance of the study agreement of all participants in an investigation. This consent is obtained after the potential participants have learned about the nature of the investigation. The issue of informed consent has been addressed previously (ADAMHA, 1975; APA, 1973).

Informed consent has been defined as:

The knowing consent of an individual or his/her legally authorized representative, so situated as to be able to exercise free power of choice without undue inducement or any element of force, fraud, deceit, duress, or other forms of constraint or coercion (ADAMHA, 1975).

Several basic elements of information necessary to informed consent are:

- o A clear explanation of the program, its objectives, and procedures. Identification of any procedures that are experimental.
- o An explanation of any risks or discomfort that might occur.
- o A description of the benefits that might occur.
- o An offer to answer any questions about the procedures.
- o A statement that participants are free to withdraw from the program at any time without reprisals.
- o An offer to help individuals find alternative services should they wish to withdraw from the study.

Three useful references on the topic of ethics in research are, Ethical Principles in the Conduct of Research with Human Participants (APA, 1973), and the ADAMHA Guide for the Protection of Human Subjects (ADAMHA, 1975), and the reports of the President's Commission for the Study of Ethical Problems in Medicine and Biomedical Research (1981).

Methods of Ensuring Confidentiality. Several general methods can be used to help protect the privacy of individuals. These include establishing policies stipulating that only evaluators will have access to information on individuals; sending the results of screenings and risk assessments to private physicians or employees' homes; and contracting with outside organizations to provide employers only with aggregate information. The success of these methods depends on the degree of confidence that employees have in them. However, providing only aggregate data precludes further analysis at the individual level.

To provide continued access to individual data and still protect privacy, several other methods have been developed. Often a master list of names along with code numbers is set up. The master list is kept in a secure location and all data forms are identified only by the code number. This method has been used successfully in the past but has some limitations. Such records could be subpoenaed as a part of a legal proceeding. As there is no complete guarantee of anonymity, employees may distort responses to questions about alcohol and drug use and other behaviors that may be strongly incriminating or socially unpopular.

Another way to protect anonymity and possibly reduce response bias on sensitive questions is the use of random response techniques. This approach protects the anonymity of the question rather than the respondent. In one of the simplest models, two questions are presented—the sensitive question and an innocuous question for which the probability of response is already known. Respondents are asked to choose a question by flipping a coin, and then to respond without letting the interviewer know which question is being answered. Given prior knowledge of the probabilities of question selection and responses to the innocuous question, the proportions of group responses to the sensitive question can be estimated reasonably accurately. A limitation of the random response techniques is that they require large sample sizes since the obtained variance is a function of the proportion of the sample responding to the sensitive question rather than the entire sample (French, 1979; Fox and Tracy, 1980).

The success of worksite based hypertension programs depends critically on steps taken to ensure confidentiality and job security. Such measures can range from excluding management from the premises during screening and treatment to preventing the release of patient records without the written consent of the employee. This guarantees that only program sponsors and health care personnel know which employees are hypertensive and are familiar with their progress in therapy (Alderman, 1984).

Masi and Teems (1983) reported on the development of an evaluation system designed to assess the effectiveness of the Employee Counseling Service (ECS) at the U.S. Department of Health and Human Services. They noted that the issue of confidentiality was the most critical in the development of the evaluation system. Every data collection form and procedure had to be closely examined for its compliance with all privacy and confidentiality regulations.

There often is a delicate balance between protecting individual rights and privacy and protecting the best interests of companies. This issue will become more controversial as greater emphasis is placed on screening, risk reduction, and cost containment.

Debate continues over whether employers should have direct access to the medical records and health information on individual employees. Benefits to employers include better selection and placement of employees, an improved ability to spot unusual occurrences of illness and environmental risks, and more efficient targeting of resources at high risk problems. Critics accept that the above practices may benefit many employees, but they also argue that access to such information can lead to unfair hiring and discriminatory promotion and termination practices.

It is essential that issues of confidentiality be considered at each step in the development of an evaluation plan. Although strict adherence to the principle of confidentiality may place many obstacles in the way of data collection, this can be weighed carefully against the total loss of credibility of the program if data is accessed unethically.

## APPENDIX

### Evaluation Resources

Several U.S. Government publications and privately subsidized publications on evaluation are available free or at relatively low costs. Several of these are listed and briefly described. The resource guide developed by Zapka et al. (1982) is a good place to start as it provides a relatively large number of annotated references on evaluation.

#### Locating Resources for Evaluation:

Zapka, J., Schwartz, R., and Giloth, B. (1982). Locating Resources for Evaluation. Chicago: American Hospital Association.

This is a useful resource guide, written primarily for persons working in the health education and health promotion fields. It provides annotated references on evaluation methods for health education and health promotion programs. References are provided in four topic areas: 1) Evaluation design and implementation, 2) data sources, 3) evaluation instruments, and 4) evaluation management. In addition to listing references, brief discussions of each of the four areas are provided.

The publication is currently available at no cost from:

Center for Health Promotion  
American Hospital Association  
840 North Lake Shore Drive  
Chicago, IL 60611

Baseline is a publication provided by the Health Services Research Center of the University of North Carolina at Chapel Hill with support from the W.K. Kellogg Foundation of Battle Creek, Michigan. The Kellogg Foundation's national demonstration program in health promotion/disease prevention gives special emphasis to careful program evaluation.

To date, ten issues of Baseline have been published. Most of the issues are four to five pages in length and provide clear and succinct discussions of basic issues in health promotion program evaluation. The editors for this series are G.H. DeFries, and W.L. Beery. The titles for each publication are:

- 1 Background Information (1982).
- 2 Cost-benefit and cost-effectiveness analysis for health promotion programs (1982).
- 3 Choosing an evaluation strategy (1983).
- 4 Goal-oriented evaluation as a program management tool (1983).

- 5 Formative evaluation of health promotion programs (1983).
- 6 On the subject of sampling. (1984).
- 7 Aids to evaluation: Computers and consultants (1984).
- 8 Health risk assessment in health program evaluation (1984).
- 9 Measurement Issues: Reliability and validity (1985).
- 10 Qualitative Methods in Program Evaluation (1986).

Subscription to Baseline is free and single copies of many of the back issues can still be obtained at no charge. The editors are planning to publish two more issues after which all issues will be updated and edited as a manual or book. Correspondence regarding this publication should be addressed to:

Editors, Baseline  
Health Services Research Center  
The University of North Carolina  
Chase Hall 132-A  
Chapel Hill, North Carolina 27514  
Telephone (919) 966-5011

French, J.F. and Kaufman, N.J. (Eds.). (1983). Handbook for Prevention Evaluation: Prevention Evaluation Guidelines. DHHS Publication No. (ADM) 83-1145. U.S. Government Printing Office, Washington, DC 20402

This is a well written manual which is practical, provides details and covers most of the basic issues in program evaluation. It was developed specifically as a guide for evaluators of primary prevention programs for mental health and substance abuse problems. Thus, many of the concerns and examples are highly relevant to issues in stress management programs.

The Handbook has been available at no charge from the National Clearinghouse for Drug Abuse Information. The address is:

National Clearinghouse for Drug Abuse Information  
P.O. Box 416  
Kensington, MD 20795

If it is no longer available from the Clearinghouse, it can be purchased from the Superintendent of Documents. The identification number is 0-410-948. The address is:

Superintendent of Documents  
U.S. Government Printing Office  
Washington, DC 20402

An Evaluation Handbook for Health Education Programs in Stress Management

IOX Assessment Associates of Los Angeles, California, through a contract with the Centers for Disease Control in Atlanta, has produced a series of seven Evaluation Handbooks for Health Education Programs. One handbook deals specifically with the topic of Stress.

This handbook has a brief introductory section on basic considerations in health education program evaluation. It also provides examples of a large number of both standardized and non-standardized, self-report type questionnaires in the Appendix. Data collection instruments appropriate both for children and adults are provided. The wide range of measurement instruments introduced and described in this handbook should be useful to all educators and others who place a major emphasis on cognitive and affective changes in their stress management programs.

Limitations. The manual does not provide examples of behavioral and physiological/biochemical measures. Another limitation of the manual is that information on the reliability and validity of many of the questionnaires had not yet been obtained when it was published.

All of the Evaluation Handbooks for Health Education Programs are available from the National Technical Information Service. The order number for the Handbook on Stress Management is PB 84-171735 A18, and the price is \$31.00.

Correspondence regarding this publication should be addressed to:

National Technical Information Service  
U.S. Department of Commerce  
Springfield, VA 22161

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## CHAPTER 7

### WORKER STRESS: A PRACTITIONER'S PERSPECTIVE

Eugene V. Martin

In the past, when workers -- whether manual, office, managerial, or professional -- have organized associations, unions, or clubs to provide mutual occupational assistance, they have traditionally paid attention to issues affecting their working conditions as well as to job security and salary. Yet, it is only in recent years that stress has surfaced as an issue affecting workers at every level and in every occupation. Even though intuitive awareness of stress in the workplace is virtually universal, the definitions and formal concepts of "stress" are still tentative and evolving. Hopefully, those of us who are concerned with workers and their stress problems can expect to see considerable evolution of programs and practices as these groups become more aware of the additional dimension that stress adds to traditional workplace concerns and as we all come to better understand what helps and what is needed.

This paper, addressed to those who work on stress problems, consists of observations derived from my efforts to design, implement, and evaluate stress education, action, and research projects. As I have tried to learn from others and from my own experience, these ideas and assumptions have seemed useful and important. They are offered here as hypotheses intended to stimulate discussion and further experimentation that will give us a fuller understanding of stress in the workplace and how we can identify effective ways to help workers deal with it.

The paper has three sections. In Section I, I raise questions about prevailing practices I think we should be addressing. These questions focus on the content and process of current stress programs, the way we are delivering services and dealing with clients, and, more generally, on the field and how we see ourselves. Section II is a brief case study of one project I worked on and some observations and learnings from that experience. In Section III, I offer some suggestions for or about possible next steps and invite more collaborative action.

#### CURRENT PRACTICES

##### CONTENT/PROCESS

##### What Should The Emphasis On Self-Responsibility Be?

I have found that many stress programs tell their participants implicitly -- and often explicitly -- that, "The stress lies in you and your reactions, not in your job (or other, external factors)." In

these workshops, participants are urged to believe that they are the sole creators of any stress they experience and that they have the power and capacity to control or eliminate "their stress".

Certainly, some stress is "internally generated", a function of the individual's values and emotional dynamics, or it is the immediate consequence of that person's voluntary behavior. And, we know that some effective psychotherapies put great emphasis on the acceptance of self-responsibility as a requisite for individual change. But, I believe that this position is blaming the victim, often inaccurately and usually dysfunctionally. Responsibility for stress is more complex a matter. "You cause your stress" is, at best, only a partial truth that leaves out important aspects of the issue, and there is real harm to people as a result.

The assertion that "people cause their own stress" ignores, for example, the body of research demonstrating that workers with little control over job demands will have greater stress than those with more control over events. And, that assertion obscures distinctions between the kinds of stressors that can be controlled by the individual and those that lie well beyond the control of the specific individual or the range of individual capacities to mediate stress effects. My concern is not about theoretical inaccuracy; the strategies for dealing with stressors beyond individual control can be quite different from what works with stressors that are controllable. The participants in our programs need accurate, balanced statements from us, especially about the interactions of individual perceptions with external reality.

Consider, for example, the cases of an autoworker who loses her job in a plant closing, a manager who is fired when his company is purchased by another, or an executive whose subordinate commits suicide. These people are experiencing major stressors, yet, in these cases, say, they are not essentially responsible for causing their situations. We know that it is virtually certain that they will experience feelings of guilt, and we know they must begin to understand the limits of their own responsibility before they can accurately assess and effectively deal with their respective situations. What is the effect of telling these three that all stress they experience is their fault? Any workshop that ignores the reality of external power may well be undermining its participants' efforts to develop realistic coping and change skills.

Blaming the victim for the problem is often unfair; blaming the stress victim is also often highly counterproductive in securing needed changes.

## How Do We Identify The Sources Of Stress?

Stress is a significant issue and an increasing problem; as the rate of change in the world increases, individuals experience more and more stress. In the "right" circumstances for the "right" person, almost anything could be a source of stress. How should we categorize the varieties of internal and external experience that can be stressful? Clearly we cannot list everything but, how do we avoid omitting stressors of significance to the people with whom we work? Part of my concern about this issue arises from my sense that there are at least two categories of stressors that many programs fail to adequately address: background stressors and stigmatized stressors.

We live in a time of high and increasing background levels in our personal and work stress situations; there is a lot happening that affects our sense of well-being. Because stress is a cumulative process, "background stressors" such as international tensions, socio-economic pressures, high unemployment, intergroup tensions, racial and sexual discrimination, objective concerns about aging, and the like form a baseline stress arousal level to which day to day job, family and individual stress adds. My guess is that we give these background stressors short shrift because we know relatively less about how to help people with these legitimate concerns.

The second category, stigmatized stressors, originate in taboo issues that many individuals either prefer not to think about or reasonably hesitate to raise in any but the safest or most intimate contexts, which only rarely will include relatively brief, occupational stress programs.

And, if these issues are difficult for participants to discuss, they are no less problematic for the practitioner. There may be many reasons why an external consultant, hired only to conduct a half-day stress workshop for a company, does not raise such volatile issues as, say, the labor-management climate, the effect of corporate work norms, or how to reduce the stress of sexual harassment. But we know that continuing evasion of such issues will further neither individual growth nor corporate productivity, and the existence of substantial hidden issues in a workshop undermines its effectiveness and can produce considerable stress for the workshop leader.

My concern is not only that certain categories of stressors are omitted from consideration and that, when they are left out, our efforts lose relevance, effectiveness, and, ultimately, acceptance. My concern is also that we may frequently fail to validate individual participants' stressors. Think back on the questions you've been asked during a workshop and recall how often people are, in effect, inquiring, "Is this issue that bothers me a genuine source of stress? Is my situation actually difficult or am I just not adequate?" The government worker whose agency faces a reduction



in force (RIF) and the corporate secretary who is a solo parent with young children deserve a better analysis of their stress situations than is possible if we do not help them recognize the issues.

We all share a responsibility to design programs that allow and help workers to develop a realistic understanding of all the elements contributing to a stressful situation. How do we best help program participants link their individual concerns to the complex nature of the world we live in if we collude, even unintentionally, with evasion of critical sources of stress?

#### How Do We Identify The Strategies For Dealing With Stress?

One way to classify the strategies for dealing with stress is to identify them by the kind of change that is their primary objective: "personal" strategies attempt to make changes in the individual, "interpersonal" strategies would change the relationships between individuals, and "external" strategies aim to change aspects of the environmental or organizational situation. Most of our current stress programs focus almost exclusively on coping skills and thus target "personal" changes first and foremost. Some attention is given to the "interpersonal" area but "external" change is rarely even mentioned. Moreover, we usually deal with change strategies for individuals to effect and give little attention to collaborative efforts.

To be sure, individual self-change seems to be the handiest place to start dealing with stress. But, it seems to me that changes in individuals occur more readily and with greater effect when there are also supportive changes taking place with others and in the general situation; and, that the interaction of these efforts is highly synergistic. In view of the difficulty that our current programs are having in achieving sustained improvements, we cannot afford to neglect whole categories of strategies and the need to use all three categories interactively.

Moreover, our choices of which strategies we teach program participants have psychological, legal and "political" implications that many of us may not intend; some of these issues will be examined below.

#### How Can We Effectively Reduce Self-Blaming?

My experience is that an extremely high percentage of our program participants tend to blame themselves in some fundamental way for the problems they are experiencing. ("If only I had listened to...If I had been a more serious student...If I just hadn't...If I were smarter...etc....then I wouldn't be in this fix.") This self-blame undermines self-esteem and can block learning and change.

We who provide stress services didn't create this situation but I think we sometimes unwittingly contribute to it. Our assertions about "...taking personal responsibility" are likely to significantly reinforce this victim self-blaming for many program participants and undermines the skill-learning processes we propose. Our almost exclusive focus on individual self change as the strategy for dealing with stress also conveys a powerful message to many that "If you were only better, you wouldn't have all this stress." We may mean "better" in terms of skill; we may be heard to mean "a better person".

There are two ways in which I would like to have more effective skills for helping people reduce such self-blame so they can increase their clarity about their stress situation and how to improve it. First, I would like to be better able to help workshop participants identify "external" stressors and collaborative change strategies without their feeling overwhelmed. Second, I wish we had better techniques for empowerment and building self-esteem that could be used with small groups and general audiences.

#### Are Our Methods Too Often Incongruent With Our Objectives?

Stress is a consequence of the perception of change; yet, our programs would have participants initiate additional change to modify some aspect of their stress situation. My impression is that we rarely advise participants that stress programs are stressful, nor do we obtain their informed consent before involving them in potentially stressful activities. I believe we could build more supportive and recuperative measures into the stress program itself.

Moreover, the changes we seek to help people make are rarely superficial or trivial to accomplish. Typically, our programs' participants want complex, interrelated changes in all three strategy areas. Such changes usually take time and the development of a variety of skills. Also required are the belief that change is possible, a commitment to staying with the learning/change process, and the adaptation of general learnings to one's own situation.

These factors indicate the need for self-directed learning, for workshop dynamics based on peer-consultation, for "discovery" techniques, and for us to take "facilitative" rather than "expert" roles. We are needed to help people become empowered at self care, to build on what they already know how to do, as they add skills that they choose from needs that they have assessed. Do we often think that we have to change -- rather than help them examine -- their priorities and lifestyle choices?

## SERVICE DELIVERY

### How Often Are Our Programs Oversold or Overly Ambitious Efforts?

I would like to see a greater contrast between the way consumer commodities are sold and the way that professional stress programs are marketed. Sometimes it seems that many stress programs are marketed like the products of fast food franchises, with promises of easy appetizing answers served up in quick fixes. Of course, many program sponsors are more careful with their language and stay within the hyperbole that is accepted for selling management training programs. But generally, I am uneasy that the language of "stress management" marketing efforts frequently implies results that are not achievable given the time and resources available. Consequently, stress programs are seen as a passing, largely past, fad in many circles, or -at best- as one component in health/fitness education, even while carefully research is adding weight to the issue.

The other side of this coin is the well intentioned effort to include too much. My experience is that many of us are frustrated by the contrast between program participants' needs and the results we can achieve in the time available to us. Apparently I am not alone in feeling a strong pressure to cram, to plan to do more than is realistic which, in turn, can make me try to rush the pace of learning activities, and thus turn experiential exercises into exhortatory lectures. I think that when this happens, learning is reduced, not increased, and program participants experience even more stress.

### Can Stress Programs Have Negative Side Effects?

The stress response directly links individual personal experience to changes in group dynamics and institutional effectiveness. I am concerned that programs seeking to change the way people operate in these influential activities can be expected to have potential side effects. For example, I have already identified my concern that our programs will increase some participants' stress (even though we may decide that this effect is an acceptable consequence when the workshop significantly increases most participants' skills for dealing with stress).

But, what about other possibilities? Does the victim-blaming effect, when it occurs, reduce participant self-esteem or otherwise impair learning? To what extent does the selection of instructional approach affect individual empowerment? What are the specific consequences when organizational practices are a major source of distress and we provide a workshop to get individuals to change themselves instead? As professionals, we need to investigate the answers to questions like these, and to make necessary trade-offs consciously. And, when there are risks of significant consequence, we should have the informed consent of program participants before we proceed.

### Is Access To Stress Services Too Limited?

My impression is that occupational stress programs are mostly available to the relatively affluent; this has two consequences I would like to see more widely examined. First, because we know that there is as much, if not more, stress for those further down the occupational ladder, access to stress programs must be improved if we hope to increase individual and organizational outcomes like health and productivity and to decrease those like accidents, and alcohol, drug and mental health disorders in the workplace.

Second, our approaches to designing and implementing stress programs seem skewed in both overt and less obvious ways. For example, existing programs place moderate to heavy reliance on pencil and paper exercises that are most useful to people who are used to working with written, standard English. Or, the language or imagery of the print and audiovisual materials used in the program may significantly miscarry with participants from some socio-cultural group. Such sensibilities are directly related to the self-identified stressors that significantly affect many people. Educational programs in both the academic and vocational spheres have already learned the necessity for recognizing and respecting such issues in seeking to be effective.

### Do Our Programs Have Limited Functional Utility?

We who see stress as a significant issue and would help others deal with it have both the opportunities and drawbacks that accompany the initial stages of any important effort; there is adventure in being a pioneer but there are no roadmaps on how to proceed. We need not be defensive about the fact that our efforts are initial, exploratory, and experimental; but, it would help to be clear about where we are and how far we've gotten. For example, most psychotherapists require months of hour-long individual interventions to secure individual change, so half-day stress workshops can hardly be faulted for not being able to make 12 to 30 people "all better" or "all effective". As we acknowledge that our current efforts have limited functional utility we will be able to identify and specify what we can do that works in helping others secure changes that they need to deal with the stresses in their lives. As professionals, we need, at least, to build research/evaluation efforts into our program presentations.

### SELF-IMAGE

### Is Stress More Than "Health Promotion"?

In the marketplace of programs, stress is becoming a subject within health promotion, included in the list of other topics with nutrition, exercise, and the like. If stress were simply a matter of individual coping skills, this conceptual structure would be reasonable. But, in many stress situations, the appropriate change objective is to

eliminate the stressor, not to adjust to it. The strategy for making required changes then provides both a defining context and necessary elements for coping and, when needed, for increasing coping skills. If we limit "stress programs" to what can be called "health promotion", we may omit important issues about stress and create problems for practitioners as well as participants.

Consider, for example, stress due to racial/sexual discrimination in employment. The range of "remedies", depending on a myriad of factors, might involve elements of private and public protest, self-help, governmental assistance, and legal action. These activities paradoxically can provide the individual with more support and additional resources while increasing the need for personal help and greater resources. Moreover, such activities provide a context for the individual's life, defining the ends and values of adjustment, the goals and means for coping.

The practitioner who tries to teach internal coping when external change is required may be judged by others to be expressing a position of hostility and/or opposition to needed changes. Specifically, the consultant hired by management to conduct a stress workshop may well be viewed as anti-worker and/or anti-labor if he or she presents stress as originating in the individual solely without reference to working conditions, rules and the equality of supervision; the practitioner's actual motives and attitudes will be moot.

#### How Do We Deal With Stress As A Workplace Issue?

Stress practitioners recognize that stress is not simply about psychological concerns, that the stress response integrates mind, body and behavior. Then many of us attempt to use stress programs in the workplace as though we were conducting value-free efforts that should be welcomed by everyone. But stress is a contentious issue, especially in the workplace. Should not stress programs intended for workplace use recognize and be designed to deal with essential issues, such as safety and health and the quality of management for example?

Stress creates safety and health hazards. National policy expressed in federal law requires employers to provide a safe and healthy workplace. Both employers and employees have specified rights and responsibilities that are supposed to be enforced by the Occupational Safety and Health Administration and the courts. In recent years, in a growing list of states, the courts have awarded settlements and/or worker's compensation to employees for the effects of stress on the job and knowledgeable observers expect such litigation to grow rapidly. Similarly, further research can be expected to more directly link specific supervisory practices with needless stress and certain work rules with unnecessarily decreasing worker control, thereby increasing stress. So, actionable stressors may occur in working

conditions, terms of employment, or the skills and practices of management. Stress programs for such workplaces will have to deal with these issues.

In this context, a program teaching workers only coping (but not change) skills could be construed, variously, as incomplete (leaving out strategies to change workplace conditions rather than workers), incompetent (unaware of workplace realities), biased (systematically placing the burden of change on the employee rather than on the employer), and/or illegal (making workers "correct" conditions that are the employer's responsibility). Of course, the validity of these charges depends on the specific situation... and the perspective of the observer. But, the validity of such charges would not depend on the intentions of the practitioner nor on the excellence of the program in teaching coping skills.

The point here is that each workplace must be approached as a complex "society" with a variety of subcultures each having its own perceptions and interests with respect to what stress means, what problems it poses and who should act to deal with it. And that our efforts to help must take a systems perspective of the full reality of that workplace/society.

#### Are Professionals Viewed As "Helpers" In The Workplace?

My experience is that many in the helping professions (not just stress practitioners) have an image of themselves and their practice that is considerably different from the way they are viewed by many workers on the lower ranks of workplace hierarchies. This discrepancy impairs communication, increases interpersonal distance, and reduces the effectiveness of persons and programs. Two stereotyped comments may help to illuminate the cross cultural problems involved:

The professional: "My purpose is to help people, to do good. Of course, I also want to do well, but I've a right to it, earned with years of expensive study. My field is constantly improving because of our commitment to quality, and we police ourselves pretty well. By and large, people get what they earn; merit pays. I like winners and I work to think like one. I'll help those who try."

The blue collar worker: "I turn to professionals only when I have to, when there's sickness or legal trouble or some kind of problem. If you get a good one, that's ok but most of them... you just take a chance they can help. If not you're probably out of luck, because they stick up for each other. They make more money in less time than anybody I ever knew. (I work hard but I'll never make that kind of money, not from working.) People like that don't know much about life around here and I guess they don't think much of people like us."

Professionals delivering stress programs and services must expect to work with diverse groups of people and will require considerable cross-cultural skills and sensitivities to be able to function effectively. "Workers" here means all people who earn their living regardless of the nature of the work they do or the social status their work has. The case study described in the next section illustrates some of the points raised in the previous section and offers some observations and learnings from the experience.

## THE JOB STRESS PROJECT: A CASE STUDY

### Background

The Job Stress Project grew out of efforts by the Graphic Arts International Union (GAIU) to develop a safety and health education program for its membership, a cross section of the more than one million men and women who work in the U.S. and Canadian printing and publishing industry. GAIU began this five year curriculum development and pilot testing project in 1979 with a survey of interests and concerns about safety and health expressed by a sample of workers, local union leaders, and employer representatives. This survey identified "mental health in the workplace" as a major concern and a unit on job stress was developed and became one of the eight 3-hour sessions that now make up the course, Safety and Health Awareness and Action Program for Employees and Employers (SHAPE). During the pilot testing of SHAPE, and in subsequent presentations, participants requested that more time and attention be given to the topic of job stress and asked for more specifics about what could be done about stress within their industry.

At that time, the issue of job stress was a new one for both labor and management decision-makers. Neither labor, GAIU and other unions, nor management, the Printing Industry Association (PIA), had adopted policy statements or undertaken action specifically addressing job stress as an industry-wide problem. There was no industry-specific assessment of the stress situation, no clear sense of how the industry's policymakers--both labor and management-- viewed the situation: Did they see stress as a significant issue? What information about stress and its effects would they need to have to make policy and take action to improve the stress situation? And, what would foster joint labor-management consideration of the issue?

Of course, there were a variety of efforts related to stress -- such as employee assistance programs -- that were initiated by various local unions and/or employers. But, these programs, however valuable, did not add up to anything like a comprehensive stress program applicable to the industry as a whole and adequate to the problems that seemed present. Neither existing programs nor professional guidelines offered the SHAPE staff much help answering the questions

that workers were posing: What are the levels and sources of distress in our industry? What abatement action and educational programs will be most useful and relevant to workers from the shop floor to the executive penthouse? What steps will increase awareness of stress issues and encourage management and union leaders to deal with the prevailing stress situation? What practical help can "stress management" courses offer individuals beyond relaxation techniques and sermons on lifestyles?

The Job Stress Project was conceived to achieve several objectives simultaneously: to assess the stress situation in the graphic communications industry; to identify next steps necessary to improve the current situation; to increase the leadership's awareness of stress issues and needed action; and, to increase the SHAPE program's ability to support stress evaluation, planning and action. The project received financial and intellectual support from Elliot Liebow, then Chief of the Center for Work and Mental Health, National Institute of Mental Health, Department of Health and Human Services.

### Project Plan

The Job Stress Project was designed with the long range goal of improving the industry's stress situation and the specific purpose of encouraging action to that end. The basic premise of the project was that the people responsible for action needed answers to two questions: What is the current job stress situation in the industry and what can be done about it? Accordingly, the planned outcomes were to: 1) identify the stress information needs of workers, union leaders, and managers; 2) assess and call attention to the job stress situation in the industry as perceived by workers, union, and management; 3) test the feasibility of labor-management cooperation in dealing with job stress; 4) provide labor and management policymakers with relevant options for action based on workers, union, and management views; 5) increase the GAIU's capacity to plan and implement activities that help people deal with both industry-specific and general job stress situations; and, 6) increase the number of persons actively dealing with the industry's stress situation. The action research paradigm -- an ongoing replication of cycles of evaluation, planning, and action -- offers a strategy for acting and for learning; so the project was structured as action research to simultaneously initiate improvements in the stress situation while learning from the process how to improve future efforts.

1) To test joint participation from the outset, a Project Advisory Group composed of the industry's labor and management leaders was to be established in each of the two cities designated as project sites; a third, National Advisory Group was also established in Washington, D.C. made up of elected officers of GAIU, corporate representatives, and PIA (Printing Industries of America) officials.



2) Individual interviews were to be conducted with the members of these three groups to determine their awareness of, interest in, and views on stress and stress issues within the industry. Also, each Project Advisory Group's members nominated the participants for a stress workshop series conducted in that city.

3) A series of six workshops was to be held over a one month period in each of the project's site cities; the participants made up a five-way cross section of the industry in that city (consisting of representatives from each of the three major production areas, from the union, and from management). The six, three-hour workshops had dual objectives: to test an experiential approach to educating workers about stress and how to deal with it, and, simultaneously, to involve these participants as researchers to help identify work-specific information about the extent, nature, and effects of stress and the action needed to foster both performance and satisfaction in their respective workplaces.

4) The original project plan was to reinterview the industry leadership about their reactions to the ideas surfaced among the leadership as a whole, their peers, and obtained from the workshop participants, their constituents. Actually, this step was never taken because the available funding would not reach to this effort and federal support for this kind of inquiry became unavailable at that time.

#### Action Research Strategy

The action research model provided the strategy for simultaneously starting both efforts, the effort to assess the stress situation and the effort to initiate useful, planned change in that situation. The strategy consisted of identifying key figures in the industry's "power structure" in each city, and at the national level, and interviewing them about their perceptions of the situation and what is required for action. Because there was no acknowledged stress problem to start with, it is extremely unlikely that the industry's top leadership would have attended a meeting on the subject. But none of them refused the request for an interview, and the interview allowed them to informally explore the subject of stress while providing the interviewer with clear information about what would be required to increase their individual and collective interest.

The action research model differs significantly from other research models which appear to rely heavily upon outside researchers who come into a workplace setting to measure, tabulate, and report on phenomena—all too often without even the informed consent of the workers being studied, let alone the active participation of the research subjects. In this project, the ongoing participation of the

population being studied was actively solicited, encouraged, and supported from the inception to the conclusion of the effort.

It was hoped that by involving workers (including management workers) as action researchers, the study or project would be more likely to produce insights into the stress situation in the industry, more likely to identify practical remedies, and more likely to result in "ownership" of the findings thereby increasing commitment to take action to improve the stress situation. Moreover, by this approach, the external researcher/change agent would model the behaviors needed to create and extend the collaborative, integrative, and mutually supportive structures that are needed for stress-ameliorative changes.

This action research project used the series of experiential, equal-status workshops simultaneously as a research and instructional mechanism both because of GAIU's experience and the researcher's approach and concerns (indicated by the preceding sections of this paper). The SHAPE staff and the Vice President in charge of SHAPE had already concluded that: 1) Prevailing approaches to "stress management" were inadequate and often objectionable because little or no emphasis was placed on the action needed to bring about environmental and organizational change, 2) Such approaches tend to "blame the victim" by focussing largely on the individual's ability, or lack of ability to handle work situations. Then, when the worker reacts in a less than adaptive manner to the presence of stressors in the environment, he or she is blamed for the inability to function properly and bears all the burden for change.

To get a fresh, less limited perspective on the situation the researcher and the Union wanted to look through the eyes of those who make up and lead the industry; to carry out an assessment, those in the industry would both need to know about and, therefore, learn about stress. This suggested the sequence of workshops which were conducted.

#### Interviews and Workshops

The Job Stress Project's primary activities consisted of forming the advisory panels, interviewing panel members, recruiting the workshop participants, and conducting the workshops.

The national-level advisory panel was made up of all the nationally elected officers of Graphic Arts International Union (GAIU) together with representatives from the Printing Industries Association (PIA) who were suggested by GAIU; PIA interviewees added additional names to the list. Similarly, the presidents of GAIU Local Unions 289 in Detroit and 285 in Washington were asked to form advisory panels

representing the industry locally. The members of the three advisory panels of influential labor and management leaders were queried on three aspects of job stress in the industry:

**The Current Situation:** Is job stress a significant issue in the industry? What causes it? What is the nature of it? How do labor and management view it?

**The Preferred Situation:** What are desirable goals for long range improvement? What next steps would be useful? What will affect labor-management cooperation dealing with stress?

**This Project:** What do labor and management representatives need to know about stress? What questions would you like this project to answer? What would you, personally, like to know about stress?

Participants for the workshops were nominated by the advisory panel members in their respective cities and were invited by letter from the SHAPE office. The participant lists were formed by the Director of the Graphic Arts Institute in each city; these Institutes are jointly trusteeed, training facilities operated by labor and management to provide the highly skilled workers needed for the local industry. The 15 to 20 participants in each city were selected to comprise a five-way cross section of the industry: some of the advisory panel members made up the union and the management contingents; three groups of workers came from the preparatory, the press and the bookbinding/finishing components of the industry.

Six workshops were conducted in each city, arranged as three pairs of workshops held on consecutive days with some two weeks between the pairs. Participants were asked to commit themselves to attending all six in their invitation. The workshops were held in the facilities of the Graphic Arts Institutes. In one city the workshop was held in a classroom; in the other, the tables were arranged between two commercial presses (not then in operation!).

Workshop I, a three-hour evening session was largely devoted to two topics, reviewing the project's origins, plans, and intentions, the expectations of and for participants; and an introductory review of the dynamics and consequences of the stress reaction. The purpose was to clarify the project as intended, recruit wholehearted participation, modify plans as initially required, and begin with some shared understanding of basic stress facts.

Workshop II, another three-hour session, was held the following night. Participants worked in plenary and in small groups to plan how they would study and observe, in themselves and among colleagues, the existence, process, and effects of stress in their respective workplaces. The purpose was for each participant-researcher to

develop a plan that would be both realistic and comfortable for him or her to implement; sector-groups met to help each other, but no one was asked to modify his or her plans to fit with others'.

In the following two weeks, participants carried out their data collection plans. Some had opted to interview coworkers, others to observe. Some chose to openly collect and record data about critical incidents, interviewee comments, personal observations, and the like; others chose to collect and record their findings unobtrusively. Some developed specific questions, topics for lunch table discussion, or checklists of issues; others prepared for a more informal process.

Workshop III was again a three hour session, held on a Friday night, and devoted entirely to participants' reports of their experiences, the data they had collected and the conclusions about stress conditions they had drawn. The purpose was to develop a detailed assessment of the stress situation in the industry as reflected by the worksites they had sampled.

Workshop IV occupied the better part of the next day, and was devoted to strategies for dealing with stress. "Samplers" were presented to simulate the ways that the popular coping techniques are taught, from relaxation exercises to assertiveness training. Strategies for interpersonal change and for "external" change (in environmental/institutional conditions) were introduced in addition to the usual, self change strategies; the discussion topics included brief reviews of contract provisions that affect stress conditions and some techniques for social change. The purpose of this workshop was to introduce participants to the wide spectrum of approaches to eliminating stressors, reducing effects, or recovering from strain.

In the following 10 to 12 days, participants were asked to consider the applicability of these approaches and to look for opportunities that would test their utility on the job or at home. Of course, participants had only been introduced to a sampling of tools, so the question posed to them was not "Which of these tools will work in your situation?" but rather, "Which do you think merit a further look, possibly a try?"

Workshop V was another three-hour, weeknight session focussed on participants' observations about strategies/tools for dealing with stress and their possible relevance to the workplace and to workers' lives. The purpose of this workshop was to assess which approaches to stress seemed relevant for the industry, which seemed inappropriate, and what more might be useful.

Workshop VI concluded the workshop series the following evening with a three hour discussion of the participants' conclusions about stress conditions in the industry and their recommendations for its

amelioration. The purpose of this session was to formulate the participants' conclusions for presentation to the industry's union and management leadership.

### Results

Individual interviews proved a successful means for creating initial awareness and interest in the topic of stress among the industry's leaders. None of those who were asked declined to be interviewed, even several who objected to the project. (One manager said it was a waste of money because "stress cannot be studied scientifically"; a union officer believed the project defamed workers by implication. "Our people aren't crazy.") Virtually all verified that they would not initially have attended a meeting called to discuss the topic.

The most intriguing single finding was the almost unanimous agreement that stress is a significant issue in the industry. But each of the union and management leaders also believed that he or she was virtually the only one who would "admit" it.

One union staff member initially denied that there was any significant stress and, some time later in the interview, paused abruptly while talking about another topic, sat quietly for a moment, and then said, "You know, as we've been talking, I've been remembering the people I worked with when I was a shop steward. And, as I see their faces, I remember the specific problems and concerns they had. I can't believe I told you there was no stress."

The manager of a plant operating around the clock, seven days a week also initially denied that stress was a problem. "Oh no, we've got good working relations here." Later in the interview he said that several times a week he would go out on the plant roof where he could privately hold onto a chimney and scream "to relieve some tension".

Although the industry's leaders believe the problem is significant, they believe themselves to be isolated in this perception and view the issue of stress as stigmatizing and as an unavoidable aspect of work. They are individually hopeful that unions and management could work together on the issue, at least initially, but, anticipate that stress raises difficult issues and, potentially, significant differences in vested interests, so far as those interests are now recognized.

The original plan to feedback the results of the interviews to the advisory panels and then reinterview their members were not implemented; adequate funding was not available and other activities in the SHAPE program had higher priority.

In the absence of models for large scale, comprehensive stress programs that can deal with workplace issues, and given the absence of

peer, professional, and public pressures to deal with the issue, it is hardly surprising that the institutional leaders of the industry generally have no agenda for action.

The workshops proved to be educationally effective, productive for stress assessment purposes, and a useful process for initiating joint labor-management activity.

As an exploratory effort, the project was useful. As a stress consciousness raising process, it produced results and showed promise. However, as the initial step in a self-generating, sustained dynamic to develop an industry-wide stress services program, it proved insufficient.

The project elicited data about stress, shows the potential for involving workers as researchers and for using research as an empowerment process. It provides a foundation that can be built on to get both leadership and rank-and-file attention and involvement with stress issues. It operated as a mutual labor-management effort without compromising the collective bargaining process.

The project planners underestimated the time, attention and resources that this effort would require so that reasonable threshold levels of results were not achieved and key questions remain unanswered about the project as a way to begin a larger, more comprehensive program. Consequently, the project is only of academic and intellectual interest.

#### IDEAS TOWARD IMPROVEMENT

Many times when I read formal papers, I suspect that a report of the author's speculations after doing the work could be more useful and interesting to me than the more certain, formal conclusions. In this section I identify some suggestions, speculations about improving stress programs and related professional practices derived both from my experiences and other people's work. I have not attempted to identify formal research that would justify or invalidate these specific conclusions although I know there are general findings that provide mixed support for these ideas. For me, these conclusions represent working hypothesis that merit discussion and testing.

#### CONTENT/PROCESS

##### Clarify The Physical Aspect Of The Stress Response

Many people, men especially, seem to think of stress as though it is the consequence of inadequate emotional control. In this view, experiencing stress indicates at least weakness in the individual, perhaps even mental illness. Because of this, I started including in introductory workshops a brief, but detailed, description of the

physiology of the stress response, the range of anatomical structures involved and some initial consequences. In this presentation, I point out that it is not necessary to remember any of these specific details to recognize that: the stress response is a physical fact (not "just" a set of feelings), that it is involuntary, that it has widespread effects throughout the body, and that its consequences are simultaneously physical, mental, and behavioral.

Of course, this cognitive information will not, by itself, modify highly socialized values about "strength", improve popular attitudes toward mental illness or change participants' behaviors of self-care. But it does appear to command attention, to be persuasive in making stress "real", to be required information for understanding stress, and to validate the importance of learning more about stress and of dealing with it.

#### Validate The Stressors Presented

Of necessity, we deal with stressors in categories, either very general ones like "objective" or "subjective" stressors, or more specific issues, like "problems with my children" or "lack of appreciation from my supervisor". Stress assessment instruments also must deal in categories, using representative examples to cover the range of potential individual concerns. I have become concerned about some effects of discussing stressor categories and, as one result, have decided, tentatively, not to use stress assessment instruments in introductory workshops.

My concern arose as I worked with an increasingly wide range of people. I became aware of a pattern that had no apparent relation to the education or social status of workshop participants: when participants were asked to discuss the major stressors in their lives some would identify a very specific, obviously stressful situation and ask whether that could be a source of stress.

This frequent phenomenon puzzled me because I have never met an adult who needed a definition of stress or lacked an answer to the question "What are the major sources of stress in your life?" So what were these people really asking? The conclusion that makes most sense to me is that these people needed to have validation of their concerns, to be assured that their stress is significant stress. This validation appears to be a prerequisite for many people learning how to deal with stress; it is as though they were choosing between two conclusions: "This should not be an issue, the problem is some flaw in me, and because this is my fault, I'm stuck with having the problem because I'm not a better person." or "This is a real problem, so there might be something that can be done about it, something that I can do about it."

My belief is that this is a subtle but pivotal issue for most people. After all, we are dealing with affective not cognitive concerns where the specifics have great significance to the men and women involved.

So, why not use stress assessment instruments for general distribution or for introductory workshops? My sense is that, until program participants have made a conscious, informed decision relatively free of self-blaming to deal with stress in a manner different than they were before, and have begun to identify and accept their own concerns as significant, they are more likely to have their perception of their stressors invalidated by not having these particular stressors appear on the printed list of questions than they are to appreciate the sampling subtlety involved. There are useful stress assessment instruments available; I prefer to introduce them to people who are actively working to improve their stress situation rather than to use them as a warning or awareness tool for "beginners".

#### Use Adult Education, Discovery Techniques

Learning to deal with stress is learning to deal differently with life. Clearly, there is no single starting point, no specific path that will work for everyone, not even for many. We each have individual concerns and awareness, varying goals and priorities, and different strengths and resources, including learning styles. Also, our clients will choose their own change strategies almost regardless of the value of our professional advice or the dramatic quality of our exhortations. Significant change in emotionally charged areas will rarely result simply from rational planning and cognitive instruction even when we are technically right about what others should do and how they should do it.

So, it appears clear to me that stress programs will be most successful to the extent they are individualized, experiential in training design, and approach the participant as a self-directed learner while enhancing his/her capability to function in that manner.

My experience in learning to use such adult education approaches is that vastly more is involved than learning some new "techniques" or organizing learning activities in a different way. In addition to learning new practices, I was -- and still am -- required to reconsider my role in facilitating other people's learning, to reevaluate my expectations about what can be accomplished and who is responsible for what in the learning process, to become aware of my behavior and learners' behaviors in new ways, and to change some of my own "teaching" practices that would be accepted, indeed, taken for granted in most instructional programs focussed on cognitive learning.



### Model Desirable Behaviors

One method that I use to improve my workshop designs and facilitation is to require myself to model the most essential behaviors that I understand the program participants to want. The difficulties I then encounter help me appreciate what, specifically, the participants face and provide me with an assessment of what assistance and support from me might be useful to them. Of course, there are other advantages of modelling behaviors: the workshop outcomes are clearer; participants have a standard of comparison for their own skills; and the learning experience has greater sensory richness.

Some of the behaviors that I attempt to model in stress programs seem to be generic; the following are illustrative: being a learner; being open to others' experience of gender, "race", age, and the like; and maintaining and acting in collaborative and equal-status relationships. Because we are still learning how to improve stress situations, I openly approach each workshop or consultation as an opportunity to learn from participants or clients about what works for them, from them. My experience is that people are generally pleased to cooperate and many report they find this approach helpful in a variety of ways: they are reassured that their experience is an appropriate source of learning and has wider applicability, that an authority figure sees them as capable of making significant change, and that they retain control of the pace and direction of any changes.

Because human experience is such a rich source of useful learning and because interpersonal conflict and intergroup tensions are important factors in so many stress situations, I openly explore with program participants the variations in their experience due to individual differences such as gender, "race", and age. My experience is that people are interested in each other's experience and can derive important insights for themselves from personal sharing especially when a safe, non-defensive climate is created and maintained .

Stress demonstrates the general, subtle, yet pervasive ways in which we influence each other. Specifically, it shows that there are important, tangible effects on each of us if we do not feel connected to and included with others in a valued and supported manner. Yet our society places great emphasis on being individual and on solitary accomplishment and rarely affirms cooperative effort and interdependence. So I work to create and maintain collaborative and equal-status relationships with all persons involved in a stress workshop.

Specifically, in a workshop, this means a myriad of specific behaviors like: taking time to have everyone present introduced; openly identifying my interests and objectives and asking others about theirs; reviewing the proposed agenda and contracting on time matters; adopting an empathetic perspective toward any participant's

contribution; using small taskgroups as a basic design element; incorporating consensual decision procedures and allowing adequate time to use them; explaining the rationale for each and every activity as part of giving the group directions; and respecting participants' needs that lie outside the workshop; to name but a few. My experience is that actions like these are rarely commented on by participants but that their cumulative effect is profound and can set the stage for dramatic and effective learning.

#### SERVICE DELIVERY

##### Ethical Marketing Requires Client Education

Most people are used to educational programs which identify the correct answers and best ways to proceed. Many of our prospective clients believe that competent professionals will have a "cure" for stress. I take it as my responsibility to determine whether this is the case and I believe I am protecting my own interests when I clarify with the client what can and cannot be done at the level of effort being considered.

In addition to overestimating what can be achieved, some clients may want a stress (coping skills) workshop as a way to deal with what I would consider an organizational or personnel issue or as an attempt to circumvent the collective bargaining process. Sometimes the solution the client wants to buy doesn't match my view of the problem. Again, I actively seek to clarify these issues because I cannot afford to be identified as a provider of ultimately ineffective services. And, as a person seeking to reduce human distress, I am unwilling to act in any way that impairs the collective bargaining process. In my experience, it is usually necessary for the practitioner to take the initiative to clarify the outcomes the client seeks, say, by sponsoring a workshop and what other expectations the client may have about the content or approach to be taken. Depending on the complexity of these expectations, I have found that I may need to gather data about the situation which will be fed back to the prospective client. The process of contracting to provide stress services to or through an organization may need to be an educational or planning intervention in its own right.

##### Use Client-Driven Strategies

I have felt the considerable impatience of some workshop participants and organizational policy makers with our inability to "cure" stress; I understand the pressure that exists to exercise professional responsibility by using our expertise to diagnose problems and to use client-driven strategies.

I have felt the considerable impatience of some workshop participants and organizational policy makers with our inability to "cure" stress; I understand the pressure that exists to exercise professional responsibility by using our expertise to diagnose problems and to prescribe a regimen that helps. Yet, my experience is that we are rarely able to obtain significant and lasting changes in the stress situation of persons or organizations and institutions simply by directive techniques. Such changes occur only when the principal actors have great ownership of the idea, a personal investment in the outcomes, and sufficient skill and resources. We cannot and need not "give" these to our clients. But, we can support their efforts and help them obtain skills needed to learn from and change their situation.

#### Take A Systems Approach

Stress is a complex dynamic simultaneously involving each person at a number of levels including being an ethnic group member, a family member, a worker, an individual, a spiritual being, and a constellation of bio-physical processes. Thus a systems approach is required to change stress situations; e.g. a multi-level scope of effort is required, the change objectives must be derived from a data-based analysis of the current situation and a coordinated strategy for starting and completing the project must be agreed to by all the major stakeholders involved.

#### Work With Joint Labor Management Efforts

I have two, interrelated reasons for suggesting that, to the maximum extent possible, we should undertake our pilot, experimental, developmental, and research projects in worksites with the active involvement of both management and labor representatives. One reason is that I believe this situation contains the best potential for successful projects and useful outcomes and the second is that I believe this situation reflects significant values for stress work.

My experience in working with organizations and groups on both action and research projects is that the more my clients are clear about the outcomes they want and committed to achieving results, the more effective my work can be. In practice, this means that there is a body of people in the client system who are interested in the project, stay current with and support it, lending assistance and/or follow up in both formal and informal roles. I get clearer data about what help people want, what is possible, how best to implement ideas in that specific situation/climate, greater interest in my suggestions and participation, better feedback on my actions, and there is more likelihood that my work will be useful. I believe this clarity and involvement are most likely to occur in a workplace where labor and management have a mutually respectful relationship and where there is a high level of worker participation in the local union.

For me, helpful stress programs are based on some intrinsic values such as: people can change and grow, learning from their own experience; people can identify their own interests and needs; people can learn to work together to satisfy mutual needs; and the like. When workers organize in mutual efforts to deal with critical issues in their lives, they are taking important steps to improve their stress situation because they are simultaneously increasing their personal support systems and affirming values that support self-care. These steps support both personal and social change.

#### Look Into The Action Research Approach

The action research or action learning approach appears to me to be a first candidate to consider in designing stress programs. This approach provides a structured way to work collaboratively with clients in tailor-fitting the project to the specific needs and realities of the audiences involved, while supporting the application and assessment of models for problem solving. It organizes the collection and progressive application of data about the situation and efforts to change. And, it integrates action steps and research components in mutually supportive roles.

The most frequently used formal structure for planning and managing projects calls for a sequence of milestones for preplanned tasks. By contrast, an action-research project consists of three stages that are repeated until project objectives are achieved; task requirements are re(identified) as the project proceeds. The three stages are assessment, preparation, and action.

Initially, the project starts with an assessment of current state: what is the current situation, who is involved, what resources are available, what would the optimal, changed situation look like, which options for "next-step" action appear indicated, what likely consequences can now be identified,...? The assessment phase can be considered as making an informed choice about how to begin or how to proceed with the next step.

Preparation consists of moving from the choice of steps-to-be-taken to readiness to act. Resources may need to be obtained, support rallied, allies informed, staff trained, and the like. The action step is intended to produce a preplanned outcome that supports achievement of the project's objectives. The action step, completed, is followed by assessment again. Did the action produce what was hoped for? Where are we now? And so the project proceeds, organically, in response to changes in both the situation and refinements in understanding what helps.

The concept of action research is especially useful as a paradigm for exploration, a way to learn what is required to accomplish desired ends when there is little or no useful precedent that would support the more conventional approach of preplanning the whole process.

Moreover, action research offers a natural way to integrate action steps and research components in mutually supportive roles. Research can help answer essential questions and action tests the predictability of research-based theory.

I have found an action research model very useful for designing and carrying out stress projects because the relative newness of the field usually requires exploratory efforts (rather than standard approaches). Moreover, the action research approach can be viewed as an "action learning" model for how we can derive learnings about how to deal with stress situations that have wider applicability than the immediate project from which they come.

The case study described earlier is one example of an action research approach and illustrates some of the major features of this conceptual structure for organizing interventions intended simultaneously to achieve practical results, increase knowledge, and foster learning.

As a practitioner, I would like to know what works and how to get specific results more elegantly. Aside from measuring cognitive learnings in workshops, there seem to be few inexpensive, readily applicable techniques for assessing the behavioral and attitudinal changes that are achieved. So I would like to see a larger and more accessible body of evaluative techniques that can give me the feedback I need. Similarly, I imagine that researchers also can benefit from increased linkage to programs that will permit not only evaluation, but also experimentation with evaluative methodology.

My impression is that there is too little such linkage between research and action projects dealing with stress. Action programs (such as brief work-shops for employees) are too often ad hoc, short-term efforts for which there are no stated change expectations. Researchers can appear to be more driven by their methodological concerns than by any sensitivity to client/consultant issues and relationships. Certainly, funding is not readily available for either. And, there are additional factors that contribute to this problem. I do not believe this will be an easy area in which to make improvements but I am convinced that it is urgently necessary for us to bring these inherently related processes into greater coordination.

## **PART III**

### **RESOURCE GUIDE**

#### **Training Materials, Products, and Equipment**

This part provides information on resources available for stress management programs at the worksites. Information is presented in five sections corresponding to periodicals, books, video cassettes and film media, training material sources, and miscellaneous agencies/groups.

The resources listed in this part, though not exhaustive, should provide interested parties with a range of contacts through which additional information on stress management can be acquired.

## PERIODICALS

### Center (5 issues/year)

Information on health promotion activities around the country and resource materials (i.e., books, tapes, and other health education publications and where to order). Each issue contains a special section on workplace interventions. Subscription includes "associate membership" for one year, discounts on other NCHE publications, and invitations to NCHE seminars and conferences. Cost: \$40/year.

National Center for Health Education (NCHE)  
30 East 29th Street  
New York, NY 10016

### Employee Health and Fitness (Monthly newsletter)

Information on organizational health promotion programs, interviews with program personnel, question and answer section, and notice of upcoming conferences including costs and where to register. Each issue highlights new publications in worksite health promotion and provides ordering information. Cost: \$98/year.

American Health Consultants, Inc.  
67 Peachtree Park Drive, NE.  
Atlanta, GA 30309

### Practical Stress Management (Monthly Newsletter)

Short summaries of current research findings related to stress and stress management. Information on conferences of interest is also provided. Cost: \$35/year.

American Institute of Stress, Inc.  
124 Park Avenue  
Yonkers, New York 10703

### Your Health & Fitness (Bi-monthly magazine)

Topics include various aspects of health, includes addresses for more information about most articles. Space is also available for news from individual companies. Cost: \$9/year.

Curriculum Innovations, Inc.  
3500 Western Avenue  
Highland Park, IL 60035

## BOOKS

### A Behavioral Approach to the Management of Stress

H.R. Beech, L.E. Burns, and B.F. Sheffield. New York: John Wiley & Sons, 1982, 132 pp., \$29.95.

An overview of behavioral approaches for reducing tension and anxiety. Occupational stress is discussed in a short section.

### Biofeedback: Clinical Applications in Behavioral Medicine

D.S. Olton and A.R. Noonberg. Englewood Cliffs, New Jersey: Prentice-Hall, 1980, 437 pp., \$24.95.

A scholarly exposition of principles and practices of biofeedback beginning with a discussion of feedback mechanisms, operant and classical conditioning, and the biological bases of behavior. Detailed accounts of the use of biofeedback in a variety of clinical situations are also included.

### Controlling Stress and Tension: A Holistic Approach

D. Girdano and G. Everly. New Jersey: Prentice-Hall, Inc., 1979, 242 pp., \$7.95

An excellent textbook which provides a detailed analysis of stress and its effects on the individual. Assessment exercises allow the reader to chart a Stress Profile. Ways to reduce stressful aspects of one's Profile are offered.

### Coping With Stress At Work

J. Marshall and C.L. Cooper (Eds.) Aldershot, Hunts, England: Gower Publishing Co. Ltd. 1981, 236 pp., \$35.50.

A collection of case studies from industrial settings which describe coping with stress through worker training, health promotion, counseling, and work environment change tactics. The book provides perspective on stress coping from academics, occupational health physicians, stress consultants, and health care/human resource workers in work settings.

### From Burnout to Balance

D.T. Jaffe, and C.D. Scott New York: McGraw-Hill Paperbacks, 1984, 209 pp, \$8.95.

A workbook geared to improve awareness of stress and burnout containing self-report instruments for evaluating stress levels of stress. The book lends itself to adaptation by program staff educating and enabling employee self-evaluation.



From the Inside Out: A Self-Teaching Manual for Biofeedback  
E. Peper and E.A. Williams. New York: Plenum Press, 1981, 431 pp., \$25.00.

A detailed self-teaching manual on how to use biofeedback equipment and evaluate progress of the learner. A solid background is provided on biofeedback and mind-body awareness techniques. Data recording protocols are provided.

Managing Stress: A Businessperson's Guide  
G.E. Yates. New York: AMACOM, 1979, 165 pp., \$12.95.

A very readable book which covers all aspects of stress and stress reduction with a focus on managers. Topics include understanding and recognizing stress, stress/health relationships, positive and negative stress, and stress assessment and stress management exercises.

Managing Stress: A Guide for Health Professionals  
R.E. Numerof. Rockville, MD: Aspen Systems Corp., 1983, 350 pp., \$25.00.

Based upon a study of health administrators, physicians, and nurses, the book contains a good description of stress and its health effects. Fully 87 pages are devoted to stress reduction including organizational change, quality circles, and individual coping techniques.

Mental Wellness Programs for Employees  
W.B. Goldbeck. Boston, MA: Center for Industry and Health Care, 1980, 230 pp., \$12.

The book is a collection of papers from an invitational conference dealing with conceptual and logistical issues surrounding mental wellness programs in work settings.

National Conference on Health Promotion Programs in Occupational Settings Set of 11 background papers for an invitational conference sponsored by the Office of Disease Prevention and Health Promotion, 1979, \$23.

Topics include current worksite programs for stress management, smoking cessation, weight and nutrition, hypertension, and cost effectiveness. (Seven of the papers appeared in Public Health Reports, Vol. 95(2), Mar/Apr 1980; Also, many were updated and published in Managing Health Promotion in the Workplace. R. Parkinson and Associates, Palo Alto, CA: Mayfield Publishing Company, 1982, 314 pp., \$24.95.

Organizational Stress and Preventive Management

J.C. Quick and J.D. Quick. New York: McGraw-Hill Book Co., 346 pp, \$14.95.

A excellent textbook on organizational stress designed for college level courses. It is a thorough, readable discussion of stress and stress reduction with a focus on organizational practices and preventive management principles.

Principles and Practice of Stress Management

R.L. Woolfolk and P.M. Lehrer, (Eds.) New York, NY: Guilford Publications, Inc., 1984, 477 pp., \$35.

A detailed examination of relaxation, meditation, yogic therapy, hypnosis, biofeedback and cognitive approaches to stress management. Underlying principles for the techniques are also offered.

Resource Guide on Occupational Stress

E. Boostrom & I. Jillson-Boostrom. Rockville, MD: Work & Mental Health Research Section, 1984.

The publication contains names and addresses of individual experts, organizations, publications and audiovisual materials, and a list of research projects which are sources of information on occupational stress.

Stress Management: A Comprehensive Guide to Wellness

E.A. Charlesworth and R.G. Nathan, 1982. Houston, Texas: Biobehavioral Press, 517 pp., \$19.95.

A self-help book containing stress education information and a wide range of stress management training techniques. An "Inside to Self-Help Groups" is provided as an appendix to the book. Occupational stress is not a major focus of the book.

Thoughts and Feelings: The Art of Cognitive Stress Intervention

M. McKay, M. Davis, and P. Fanning, 1981. Richmond, California: New Harbinger Publications, 218 pp., \$11.50.

This workbook describes cognitive techniques for stress reduction and stress management. Background information on stress is presented followed by detailed coping exercises. Occupational factors contributing to stress are not treated specifically.

Wellness at Work: A Report on Health and Fitness Programs for Employees of Business and Industry  
R.M. Cunningham, Jr. Chicago, IL: Blue Cross and Blue Shield Associations, 1982, 137 pp., \$7.95.

Overview of the wellness movement, including examples of worksite programs. Hints on starting a program, prepayment plans and other resources, and an eye toward the future are offered along with references and fitness resources.

Worksite Health Promotion: Examples of Programs That Work

Worksite Health Promotion: A Bibliography of Selected Books and Resources

Worksite Health Promotion: Some Questions and Answers to Help You Get Started

Request the above publications free of charge from:

Office of Disease Prevention and Health Promotion  
Public Health Service  
Department of Health and Human Services  
Washington, DC 20201

#### VIDEOCASSETTES AND FILM MEDIA

##### "Danger Zone: Stress"

A 13 minute color film/video providing an introduction to stress management using humor to help managers, employees, and their families to (1) identify stressors and the symptoms of overload, (2) understand the causes of stress, and (3) practice physical and mental solutions to stress.

Cost:	16mm	\$430.00
	Videocassette	\$430.00
	Rental	\$90.00
	Preview	\$25.00

Visucom Productions, Inc.  
P.O. Box 5472  
Redwood City, CA 94063  
(415) 364-5566

"Employee Stress Education"

A 17 minute program which teaches employees to define stress, assess stress in their work, and better cope with stress.

Cost: Videocassette \$295.00

International Human Factors Institute  
Risk Management Services Division  
St. Paul Insurance Companies  
385 Washington Street  
St. Paul, MN 55102

"Managing Stress to Prevent Worker Accidents"

A 14 minute program which teaches employees to understand and control stress-related accidents. The stress/accident cycle is described along with strategies for reducing stress-related losses.

Cost: Videocassette \$295.00

International Human Factors Institute  
Risk Management Services Division  
St. Paul Insurance Companies  
385 Washington Street  
St. Paul, MN 55102

"Stress Management: A Positive Strategy"

Five 30 minute color cassettes, narrated by George Coe, are designed for managers at all levels. Consists of video counseling by well-known experts in the stress management field, interspersed with dramatic vignettes portraying realistic stress situations that confront managers everywhere. Includes leader's manual and participants' handbooks.

Cost: 5 Videocassettes \$4450  
Rental \$500/month  
Manual & Handbook \$19.00 to \$29.50 ea

Time/Life Video  
Box 666 Time & Life Building  
New York, NY 10019

## TRAINING MATERIAL SOURCES

The organizations below offer a variety of training materials such as audio/audiovisual cassettes, films/filmstrips, workbooks, brochures, etc. Items as well as prices change frequently in response to the advent of new materials on the market. Most companies publish current catalogs of their items and many offer guidelines to program personnel who need to evaluate equipment and materials for possible adoption.

**BMA Audio Cassettes**  
200 Park Avenue South  
New York, NY 10003  
212/674-1900 (New York)  
800/221-3966 (outside New York)  
Contact: Leo Stronger

**Barr Films**  
P.O. Box 5667  
Pasadena, CA 91107  
213/793-6153 (California) (call collect)  
800/423-4483 (outside California)  
Contact: Helen Lee

**Care Video Productions**  
P.O. Box 45132  
Westlake, OH 44145  
216/835-5872

**Churchill Films**  
662 North Robertson Boulevard  
Los Angeles, CA 90069-9990  
213/657-5110

**Current Affairs**  
P.O. Box 426  
346 Ethan Allen Highway  
Ridgefield, CT 06877  
203/431-0421  
Contact: Joseph P. Burke

**Disney Educational Media**  
500 South Buena Vista Street  
Burbank, CA 91521  
213/840-1726 (California)  
Contact: Hilda Weiss

Document Associates, Inc.  
211 East 43rd Street  
New York, NY 10017  
212/682-0730  
Contact: Gary Crowds

Educational Activities, Inc.  
P.O. Box 392  
Freeport, NY 11520  
516/223-4666 (New York)  
800/645-3739 (outside New York)

Edupac, Inc.  
231 Norfolk Street  
Walpole, MA 02081  
617/668-7746  
Contact: Carol Perry

Fitness Publications  
P.O. Box 178554  
San Diego, CA 92117  
714/569-6581  
Contact: Thomas A. Murphy; Dianne Murphy

Human Relations Media  
175 Tompkins Avenue  
Pleasantville, NY 10570  
914/769-7496 (New York)  
800/431-2050 (outside New York)  
Contact: Bruce Holmes

Human Sciences Press  
72 Fifth Avenue  
New York, NY 10011  
212/243-6000  
Contact: Barbara Perrin

International Film Bureau, Inc.  
332 South Michigan Avenue  
Chicago, IL 60604  
312/427-4545  
Contact: Eriel Reimers

Journal Films, Inc.  
930 Pitner Avenue  
Evanston, IL 60202  
312/328-6700 (Illinois)  
800/323-5448 (outside Illinois)  
Contact: Margaret Farragher

Keyword Publications, Inc.  
682 Prospect Avenue  
Hartford, CT 06105  
203/233-2658  
Contact: Mark Wertheim

McGraw-Hill/CRM Films  
110 15th Street  
Del Mar, CA 92014  
714/453-5000  
Contact: Tom Allred

PBS Video  
475 L'Enfant Plaza, SW  
Washington, DC 20024  
202/488-5220 (Washington metropolitan area)  
800/424-7963 (outside Washington, DC)

Pyramid Film and Video  
Box 1048  
Santa Monica, CA 90406  
213/828-7577 (California)  
800/421-2304 (outside California)  
Contact: Teresa Morrissey

Self Control Systems, Inc.  
4555 Lake Shore Drive  
P.O. Box 7854  
Waco, TX 76710  
817/776-8110  
Contact: Barbara Smith

Southerby Productions, Inc.  
5000 East Anaheim Street  
Long Beach, CA 90804  
213/434-3446  
Contact: Scott Zimble

Sterling Educational Films  
241 East 34th Street  
New York, NY 10016  
212/683-6300

Trainex Corporation  
12601 Industry Street  
Garden Grove, CA 92641  
800/472-2479 (California)  
800/854-2485 (outside California)

#### ADDITIONAL SOURCES OF INFORMATION

##### Yellow Pages:

- Biofeedback Therapists
- Counselors
- Exercise Equipment
- Exercise & Physical Fitness Programs
- Holistic Practitioners
- Hospitals
- Management Consultants
- Mental Health Centers
- Motivational & Self Improvement Training
- Psychologists
- Social Service Organizations

##### Libraries

Health Services Directory  
A. Kruza, 1981

Medical and Health Information Directory  
Gale Research Co., 1980

##### National and Local Agencies

American Health Foundation  
Mahoney Institute for Health Maintenance  
320 East 43rd Street  
New York, NY 10017  
212/953-1900

Provides materials and conducts programs for employers and employee groups.



American Heart Association  
National Center  
7320 Greenville Avenue  
Dallas, TX 75231  
214/750-5300

Provides educational material in the form of brochures, catalogs, directory, fact sheet. Also offers training for staff and volunteers.

American Institute of Stress, Inc.  
124 Park Avenue  
Yonkers, NY 10703  
914/963-1200

Provides materials and conducts free workshops and symposia.

American Public Health Association  
1015 15th Street, NW  
Washington, DC 20005  
202/789-5600

Provides catalogs, brochures, fact sheets, and newsletters.

American Red Cross  
National Headquarters  
17th & D Streets, NW  
Washington, DC 20006

Provides stress management instructor courses, self-help classes, brochures, films, videocassettes, slide-tape presentations, textbooks, workbooks, and information kits. Also offers training for volunteers and paraprofessionals.

APPLE (A Positive Plan for Lifestyle Enrichment)  
Metropolitan Medical Center  
900 South Eighth Street  
Minneapolis, MN 55404  
612/347-4655

Provides materials and conducts programs in Upper Midwest area for business, industry, and government organizations. Also provides brochure and newsletter.

Association for the Advancement of Health Education  
1900 Association Drive  
Reston, VA 22091  
703/476-3440

Provides catalogs, brochures, fact sheets, newsletters, films and books.

Behavioral Consultants, Ltd.  
P.O. Box 30536  
Seattle, WA 98103  
206/789-5500

Provides self-help manual, audiocassette, and conducts programs.

Biofeedback Institute of Los Angeles  
6399 Wilshire Blvd.  
Los Angeles, CA 90048  
213/933-9451

Provides information on the design and manufacture of physiological equipment.

Blue Cross and Blue Shield Associations  
676 St. Clair Street  
Chicago, IL 60611  
312/440-6000

Provides brochures and booklets on a wide range of health topics at no charge.

Boston Women's Health Book Collective  
P.O. Box 192  
West Somerville, MA 02144  
617/924-0271

Provides brochure, fact sheet, books, information packet, posters; also conducts programs.

Dale Carnegie & Associates, Inc.  
1475 Franklin Avenue  
Garden City, NY 11530  
516/248-5100

Provides courses in self-improvement areas such as "Effective Speaking and Human Relations." Fees based on services provided.

Center for Health Promotion and Education  
Centers for Disease Control  
1600 Clifton Road  
Atlanta, Georgia 30333  
404/329-3158

Provides information on health risk appraisals and other health promotion activities in work settings.

Clearinghouse on Business Coalitions for Health Action  
1615 H Street, NW, Suite 526  
Washington, DC 20062  
202/463-5970

Publishes newsletter and directory of business coalitions, schedules meetings, and provides a speaker's bureau.

Conscious Living Foundation  
P.O. Box 513  
Manhattan, KS 66502  
913/539-2449

Provides catalog, brochure, books, audiocassettes, biofeedback equipment and conducts programs.

Consumer Information Center  
Pueblo, CO 81009  
303/544-5277 x370

Provides catalog, brochure, and newsletter.

Five Valleys  
Health Information Clearinghouse  
235 East Pine Street, No. 4  
Missoula, MT 59802  
800/332-5759 (Montana)

Provides catalog, brochure, newsletter, and conducts programs.

Government Printing Office  
Superintendent of Documents  
Washington, DC 20402

All federal government publications can be ordered from this source.

Guidance Associates  
Communications Park, Box 3000  
Mount Kisco, NY 10549  
914/666-4100 (New York)

Provides catalog and videocassettes.

Health and Risk Evaluation Program  
Loma Linda University, School of Health  
Loma Linda, CA 92350  
714/824-4594

Provides brochure and conducts programs.

International Human Factors Institute  
St. Paul Insurance Companies  
385 Washington Street  
St. Paul, Minnesota 55102  
612/221-8107

Offers a number of corporate stress management programs designed to reduce stress-related losses (e.g., accidents, illnesses). Also conducts job stress assessments and provides feedback to organizations regarding ways to reduce stress-related losses.

International Institute of Stress  
2900 Boul. Edouard Montpetit  
Montreal, Canada H3C 3J7  
514/343-6379

Provides brochure, quarterly journal, and conducts programs.

Metropolitan Life Insurance Company  
Health and Safety Education Div.  
One Madison Avenue  
New York, NY 10010  
212/578-5014

Provides educational materials and conducts programs for industry and business.

National Center for Health Education  
30 East 29th Street  
New York, NY 10010

Provides educational materials, newsletters, and journals covering a wide range of health topics.

National Clearinghouse for Mental Health Information  
Public Inquiries Section  
5600 Fishers Lane  
Rockville, MD 20857

Provides catalogue of federal government publications dealing with mental health.

National Health Information Clearinghouse  
P.O. Box 1133  
Washington, D.C. 20013-1133  
703/522-2590 (Virginia)  
800/336-4797 (outside Virginia)

Offers referrals to other health information organizations, government agencies, self-help groups, and voluntary associations.

National Institute for Occupational Safety and Health (NIOSH)  
Robert A. Taft Laboratories  
4676 Columbia Parkway  
Cincinnati, OH 45226  
513/533-8323

Offers information on current occupational safety and health research, reprints of technical reports and selected journal articles, and referrals to other agencies for additional information.

National Mental Health Association  
1800 North Kent Street  
Arlington, VA 22209  
703/528-6405

Provides catalog, self-instruction packets, and special publications dealing with mental health topics.

Office of Disease Prevention and Health Promotion  
Worksite Health Promotion Initiative  
Department of Health and Human Services  
Public Health Service  
Mary E. Switzer Building, Room 2132  
330 C Street SW  
Washington, DC 20201  
202/472-5370

Provides information about health promotion activities in work and nonwork settings and coordinates all federal activities in this area. A list of publications is available free of charge.

President's Council on Physical Fitness & Sports  
Room 7103, Judiciary Plaza  
450 Fifth Street, SW  
Washington, DC 20001

Provides information and catalogue of publications.

Sagamore Institute  
National Humanistic Education Center  
110 Spring Street  
Saratoga Springs, NY 12866  
518/587-8770

Offers referrals to other programs, conducts workshops, provides brochure, catalog, and speakers bureau.

Stress Control, Inc.  
P.O. Box 592  
Hillsboro, OR 97123  
503/642-4433

Provides brochure and newsletter at no cost.

Takin' Charge  
St. Paul-Ramsey Medical Center  
640 Jackson Street  
St. Paul, MN 55101  
612/221-3479

Provides brochure, newsletter, and conducts programs.

YMCA and YWCA  
Contact your local branch

Offer information and programs on stress management and other health promotion topics.