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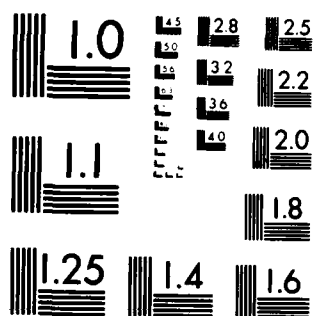
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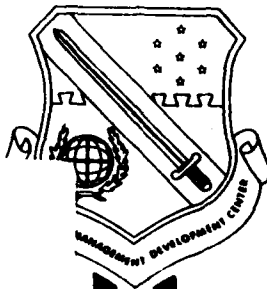
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REDUCING EMPLOYEE STRESS

SMSGT CLIFFORD M. PURINGTON, JR., USAF

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This literature review on job related stress is based on several sets of findings from behavioral and medical research. Support is offered for the premise that job related factors are a primary cause of stress induced illness among people in today's work force. Whether or not a job actually provokes stress depends a great deal on how a person perceives the situation. This perception in turn is influenced by a variety of individual differences in people and by differences in the work environment. Medical researchers now believe that the chemical stress reaction within the human body is the most important causative factor in		

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contemporary health breakdowns. The economic costs of stress in terms of health care in 1980 was one of every 14 dollars. Management is now realizing the related personnel costs associated with absenteeism, turnover, premature retirement, serious illness, alcoholism, and death will become an even bigger problem in the future. Authors generally agree that the responsibility for reducing employee stress belongs to management. However, since there is no single cause or effect of stress, a simple solution to correct the problem does not exist. Therefore, a combination of approaches need to be established to help people and organizations deal effectively with stress in the work force. The review concludes with some discussion and recommendations to management for helping employees cope productively with job related stress.

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INTRODUCTION

Today, stress is a word frequently heard in conversations and read about in newspapers. The harmful effects of stress are widely reported and emphasized. The public concern over the problem is evidenced through the current proliferation of articles and books dealing with stress.

Stress is not something new nor is it a creation of today's environment. Human existence has always been marked by danger, pressure, and stress. Scientific advancement has solved many of the old problems and, in-turn, created new stressors or problems.

People are challenged by the potential dangers of accelerated change within the span of a single generation. Change can create stress, and stress puts tremendous strain on the organization and its employees. Change is inevitable and constant. There is little or no escape from change. People must learn to adapt and flex with change. However, it is best to modify this resistance to change now, rather than wait for the irresistible force of necessity to demand it. As Benjamin Franklin once said, "Necessity never made a good bargain."

Employees spend a large percentage of their lives in work-related activities. It is this work environment that has the greatest potential for educating the employee to the social and psychological factors influencing their health. Management must be sensitive to basic problems that are stressful and seek ways to eliminate or reduce them. Stress overload, regardless of the source, takes its toll on the employee and eventually affects the organization.

Research Objectives

Based on the premise that stress exists, the central thesis of this paper is that organizations have not only a moral responsibility, but an economic incentive from increased productivity to reduce work-related stress. Specifically, this paper will show that stress is related to a number of physical and mental illnesses. Combined with sky-rocketing health care costs to treat these illnesses, an organization with an effective stress management program has the potential to both reduce overhead cost and increase its overall productivity.

In order to support this theory, I will logically analyze a combination of historical and statistical data to answer the following questions.

1. What is stress?
2. What are the human responses to a stressful environment?
3. What are the major causes of stress?
4. How does stress impact the organization?
5. Does an organization have any responsibilities for reducing stress?
6. What are the alternatives available to the organization?

This study is organized into six sections, as follows:

Introduction - an overview of the subject to be researched.

Nature of Stress - analysis of the available literature defining stress and its causes.

Stress in the Work Environment - literature review of the social and economic costs of stress.

Organizational Responsibilities - Management's responsibility for the quality of work life.

Alternatives Available to Organizations - Techniques available to the organization for reducing stress utilizing a two prong approach.

Summary and Conclusion - research findings, awareness and coping techniques, and recommendations.

Definition of Terms

Because certain terms will be used throughout the paper, it is important that they be identified and defined. A list of significant definitions follows:

Acceptance - an agreeing, either expressly or by conduct to the act or offer of another so that a contract is concluded and the parties become legally bound.

Anger - the general term for the emotional reaction of extreme displeasure; suggests neither a definite degree of intensity nor a necessarily outward manifestation.

Anxiety - painful or apprehensive uneasiness of mind over an impending or anticipated ill.

Bio-feedback - treatment technique by which individuals are taught to change and control internal bodily processes formerly thought to be involuntary (e.g., blood pressure and skin temperature); involves giving the individual immediate feedback about the bodily changes as they occur.

Denial - refusal to satisfy a request or desire, especially refusal to admit the truth or reality.

Depression - emotional state characterized by extreme dejection, gloomy ruminations, feeling of worthlessness, loss of hope and often apprehension.

Detachment - to separate from a larger mass without violence or damage.

Hypertension - abnormally high blood pressure and especially arterial blood pressure; also, the systemic condition accompanying high blood pressure.

Integration - coordination of mental processes into a normal effective personality or with the individual's environment.

Manager - one who conducts business affairs with economy and care. A person who directs a team.

Myocardial infarctions - obstruction of the local circulation in the middle muscular layer of the heart wall.

Psychosomatic - resulting from the interaction and interdependence of psychic and physiological phenomena.

Stress - the state manifested by specific syndrome which consists of all the nonspecifically included changes within a biologic system.

Stressor - environmental impingements to the individual.

Syndrome - a pattern of adaptive and defensive physical reactions induced by stressors acting on biological equilibrium of the affected organism.

NATURE OF STRESS

Evolution of Stress

Four hundred years before the birth of Christ, the Greek Philosopher Plato suggested that "All diseases of the body proceed from the mind or soul." Over 2000 years later he was proven to be remarkably correct.

According to Brown (1979), many experts believe the mind is directly responsible for up to ninety percent of all illnesses and diseases. About forty years ago, Dr. Hans Selye, a Canadian biologist, identified the cause of these mentally produced illnesses. He borrowed the physics term stress to describe the body's response to everything from flu and cold temperatures to emotions such as fear and anger.

Six years ago there was no consensus regarding whether stress should be defined as the external stimulus, the internal psychological state of discomfort, the behavioral response, or the intervening variable linking environmental events with behavioral consequences. In reviewing the literature Sweetland (1979) found two definitions. The first suggests that job stress always involves the possibility of desirable or undesirable outcomes that are contingent on some type of formal or informal evaluation

process. The other emphasized two conditions necessary for stress to occur: (1) the organism responds to an external stimulus that is perceived to be important for its physical or psychological equilibrium, and (2) the usual mechanisms employed to cope with the situation prove to be inadequate. Sweetland disagrees and focuses on the individual's cognitive appraisal of the external situation, while McLean (1979) maintained that stress is not a stimulus, a response, or an intervening variable, but rather a term for an area of study.

Selye (1974) notes that stress, like hunger and thirst, is an inescapable part of life. Selye goes on to say that stress is not simply nervous tension or something unpleasant to be avoided. Participating in sporting events, watching an emotional movie, or riding a roller coaster can all be very stressful. But these are stresses which we seek out and even enjoy. Stress can be positive when it motivates individuals to action, but when it puts our bodies under prolonged physical and emotional pressure, the very things which might have been stimulating and enjoyable may become destructive and unpleasant.

Sakaloff (1979) noted the impact of all of this on the price we pay in terms of personal health and health care. Technological revolution, inflation, raw materials shortages, and societal revolution, among other changes, have compounded the anxieties one experiences in life. The events taking place in the 1980's suggest these anxieties and others will continue to have an increasing impact on industrial societies. As a result, Sakaloff calls the current era the "Age of Stress."

Today stress is broadly defined as a consequence of any action, situation, or force that places special physical and/or psychological demands upon a person. However, stress does not become a matter of concern until the

ability to cope with it is impaired. Research has shown that stress-related problems and illnesses have increased significantly over the last five years.

Reaction to Stress

Although all definitions of stress have detractors, most researchers do agree on how stress affects the body. Simply, the body has one way of responding to excess stress. Therefore, regardless of whether the source of stress is someone with a gun threatening a person's life, or a reprimand from a person's boss, the body always responds the same way. According to Tanner (1976), Dr. Walter Cannon of Harvard coined the phrase "fight-or-flight pattern" to describe the body's exclusive reaction.

Immediately upon perception of an event as stressful, the brain reacts by stimulating the hypothalamus to control involuntary muscles and organs. Concurrently, the hypothalamus signals the pituitary glands to send a hormone to the adrenal glands. This stimulus signals the adrenals to manufacture two chemicals necessary to deal with stress: adrenalin and cortisone. Adrenalin functions as a stimulant which increases the heart rate and raises blood pressure. Cortisone rushes throughout the blood stream sending out substances to fight infection. The muscles begin to tighten in preparation for absorbing blows. The stomach suspends activity. Undigested food begins to ferment causing excess acid, indigestion, heartburn and eventually ulcers. The spleen releases more red blood corpuscles which enables the blood to clot more quickly. To provide additional energy, the adrenals increase the amount of fat and cholesterol in the blood and the liver is directed to increase the amount of sugar. The body is now prepared to meet physical threat (Zimmerman, 1978).

Selye revealed that this physiological reaction evolved over millions of years, and was well suited to our stone age ancestors. It allowed them to reach peak efficiency quickly; prepared either to stand and fight or to run, depending on their perception of the odds. Unfortunately, contemporary society frowns upon either killing a competitor or running away in disgrace. This factor has caused stress to become a significant contemporary issue. Without a release for the psychologically induced fight-or-flight pattern, stress continues to build up until the body's system is pushed to the limit. The system then begins to breakdown. This stress-induced breakdown is the number one cause of heart disease and has been directly related to such maladies as hypertension, mental depression, migraine headaches, fever, colitis, fatigue, ulcers, allergies, excess clotting of the blood, and more recently, cancer (Brown, 1979).

Dr. Selye, in his research, developed the concept he called "the general adaption syndrome." The syndrome has three phases:

- (1) Alarm Reaction
- (2) Stage of Resistance
- (3) Stage of Exhaustion

The Alarm Reaction: When the body is attacked, the initial reaction is the alarm, which consists of two phases. Phase one comprises a series of physiological phenomena, indicating that the body is faltering under the assault. However, the body's defenses are also rapidly mobilized to meet the assault. A report is immediately transmitted to the headquarters of the defense centers, the hypothalamus and the pituitary. The second phase is the autonomic nervous system and endocrine glands. Changes are transmitted in the body functions to neutralize the damaging effects of the attack.

Sometimes one never gets beyond the alarm reaction. Collins (1977) found that in some cases the alarm reaction sends one into a state of shock and causes one to "freeze." This "freeze" has been the experience of many pilots when they realize that their planes are crashing. Other researchers of stress have found that stress always triggers a "call to arms," an arousal of the body for action.

Stage of Resistance: According to Selye (1956), one cannot stay in the alarm reaction stage very long. The alarm reaction is too draining on the blood. Eventually there is some kind of reaction and this occurs during the stage of resistance. Here one begins to fight the stress - physically and psychologically. The most important "weapon" at this stage are the hormones of the adrenal cortex, the corticosteroids. Their production is stepped up on the order of the pituitary gland. During this stage, there is some adjustment to the stressor.

Gulligan and Sedlacek (1976) revealed that if stress continues, the individual is often able to find some means for dealing with it; however, even in this stage there may be indications of strain including psychosomatic symptoms and mild reality distortions. During the late phases of this stage, the individual tends to become rigid and cling to previously developed defenses rather than trying to reevaluate the stressor situation and work out a more adaptive coping pattern.

Stage of Exhaustion: Ruch (1973) wrote that when the stage of exhaustion begins, there is a "lowering of integration" and an introduction of exaggerated and inappropriate defensive measures. Many people in mental hospitals have arrived there because of an inability to keep on resisting stress. The defenses are no longer able to sustain the process of adjustment, and the organism succumbs.

Gross' Five Stages of Stress

Gross believes that most people experience five distinct stages of stress. The first stage is denial or shock, followed by anger, bargaining, depression and finally acceptance. Gross (1968) further states:

A manager would be faced with these five stages if a subordinate were to be informed that his skills are becoming obsolete in his technological area. Stage one will be shown as shock at the suggestion that it is true. Later he might become angry and argue that the manager has no basis for such an accusation (anger). Next the worker may plead with the manager to give him another chance (bargaining). Not succeeding at this stage will throw the worker into a depression (stage four). After a period of time the worker will become more aware of the situation. Finally, the worker accepts the reality of the change (in this case, obsolescence of skills). Only at this point the worker is ready to make the necessary change. (p.56)

Regardless of which theory is accepted, prolonged stress takes its toll on the individual and the organization. Stress is a costly virus which can harm us physically and psychologically. Everyone needs some stress to be alert and productive but too much stress can be harmful; each individual has their unique point at which stress becomes destructive.

Causes of Stress

The majority of writers agree that the primary cause of stress induced illness within the workforce is job related. Results from the American Management Association survey show that the main source of stress for the average person is related to our jobs. This result also concurs with the Klerv and Kohn research (1979).

Stress results from the interaction between the environment and the individual. Each organization exerts its own unique set of stressors on the individual. Almost every possible situation or event is a source of stress to someone at some time. Often a situation and its direct opposite are both

potential sources of stress, overload and underload. The effect of any stress on an individual is the additive effect it has on the internal and external stressors already present in that individual (Kiev and Kohn, 1979).

Friedman and Rosenman (1974) believe that the general increase in heart disease during the last fifty years is related to the stressors of our increasingly complex civilization. This increasing complexity has given rise to a set of behaviors the authors termed the Type A coronary-prone behavior pattern and the Type B manifested healthy emotional behavior, respectively. Type A behavior pattern is an action-emotion complex that can be observed in any person who is aggressively involved in a chronic struggle to achieve more in less time, even if required to do so against the opposing effects of other things or persons.

Type A behaviors are more specifically described by Glass (1977) as "competitive achievement striving, a sense of time urgency, and hostility". In general, Glass suggests that Type A individuals are extremely threatened by a loss of control over environmental events and are therefore constantly striving to maintain control. Research cited by Glass suggests that Type A individuals tend to work close to their ultimate levels of endurance on all tasks, even on easy ones that do not require such expenditures of effort. However, when faced with an uncontrollable task, Type A individuals tend to "give up" more easily than others, hypothetically, because they cannot accept the possibility of losing.

Humphrey (1978) maintains that many times the source of stress induced on others is from a "stress carrier." A "stress carrier" is a person who creates the stressful high urgency Type A behavior environment and yet is not aware of it. Some of these "carriers" are aware of their behavior and yet are either unwilling or unable to change the aura that they create for their subordinates or peers.

In contrast, Type B personalities are much more relaxed, easy going, and free from the habits of a Type A. Type B's are not driven by clocks, feel less hostility, and are more patient. Whether at play or exercise, they relax and have fun without the need to prove constantly they are superior (Friedman and Rosenman, 1974).

The traits of the Type A individual are almost all behaviors that trigger the flight or fight response. The irony of this situation is that Type A behaviors are frequently more successful than Type B behaviors. Therefore, the environmental situation is geared to reward and perpetuate Type A behavior (Bieliauska, 1982).

Levi (1967) outlines several situations that may cause stress in the working environment.

1. Over-Exertion - People complain almost daily of over-exertion. It is often assumed without question that over-exertion is the result of having too much to do. There are jobs with a shortage of staff and where work piles up. Continuous overtime, and the feeling that even so one can never complete one's task satisfactorily, can lead to "real" over-exertion.
2. Poor Work Economy - Many people are fickle and work without a plan. They jump from one thing to another and never finish a job before starting on the next one. They spend as much time switching from job to job as they do on actual productive work. This leads to poor work economy and the person becomes tired without accomplishing very much. Lamott (1975) agrees with this as the underlying causes of psychosomatic illnesses. Poor planning is one cause of stress that can, if recognized, be corrected.
3. Over-Conscientiousness - Those who complain about too much work are people who are pedantic and over-conscientious. They spend an interminable time on every task, regardless of whether such care is necessary or not. Some people are anxious and sensitive to criticism; consequently they feel compelled to do everything correctly down to the last detail for fear that something will be wrong. There are people who cannot see the woods for the trees-- instead of keeping the purpose of what they are doing in mind, they concentrate on every little detail. The result is a poor out-put. When they attempt to step up their rate of work, such individuals easily become over-exerted although their productivity scarcely improves.

4. **Work as a Substitute** - There are people who work from early in the morning until late at night. These martyrs are never satisfied unless they are continuously on the go. They bring work home and never allow themselves any relaxation. Sundays are a nightmare. Although they may be quite productive, their work is characterized by rush, compulsion, and lack of enjoyment. Such individuals may have lacked love in their past, and are now trying to fill the emptiness of their lives with work.
5. **Tired Even Before Work Starts** - A larger and more important group comprises those people who feel tired even before they start work in the morning. Such people may have only a very small energy reserve by nature. However, we all know from experience that interesting work keeps fatigue away whereas boring work precipitates it. Boring, monotonous work that calls for a good deal of concentration may easily cause fatigue even though the work does not seem to be particularly strenuous. But it is not only boredom with one's work that has this effect. Conflicts with management, fellow workers or family, as well as financial worries may produce the same symptoms. However, they are not the reasons the patient gives. He blames everything on over-exertion.
6. **Man and Machine** - Many people encounter stress in working with machines, such as conveyor belts with their simple repetitive operations. The task may consist of tightening a screw or soldering two wires together, or decorating candies--always the same operation, day in day out. But although such work may appear very boring, experience shows that this monotony is not necessarily a stress-producing factor. Only when it is combined with continuous concentration or strenuous manual labor does it become a stressor. The machine is then the master over man, dictating his movements and rate of work.

Summary

Individual perceptions are important in understanding the consequences of events in our lives. Whether or not a stressor actually provokes stress depends a great deal on how a person perceives it. The perception in turn is influenced by a variety of individual differences in people and by differences in stressors.

The concept of stress in the work environment is too complex and too individualized to provide the reader with a complete list of job stressors. As mentioned above, every situation has the potential for creating stress in someone.

STRESS IN THE WORK ENVIRONMENT

Impact on Human Resources

Today, the average 50 year-old male can reasonably expect to live to the age of 73--only nine months longer than his counterpart in the 1920s. Medical advances have largely wiped out infectious diseases such as pneumonia which killed many of our ancestors in their early years. However, a host of once uncommon disorders have reached epidemic proportions: cardiovascular disease, stroke, cancer, and other big killers are relatively new (Gherman, 1981).

Medical researchers (Ivancevich and Matteson, 1978) now believe that the chemical stress reaction within the human body is the cause factor in most contemporary health breakdowns. Last year the chronic, stress-related diseases of adulthood were the leading cause of death. Each year, approximately one million Americans die from various forms of cardiovascular diseases, about 600,000 from heart attacks or coronary heart disease.

Ivancevich and Matteson (1978) state:

For the past 60 years, there has been a steady, significant increase recorded death rates from heart attacks. Although the precise causes of this increase are poorly understood ones, most researchers point to the increasing complexity and stress of modern life (p.14).

The pace of change and daily pressures of life in general serve to compound the pressures experienced at work, often with costly results. Albrecht (1979) writes that men in the United States have heart attacks at three times the rate of women. Heart attacks in men 35 and 40 years old are not highly unusual. Some statisticians estimate that the average "healthy" male has one chance in five of having a heart attack before he reaches age 65.

Other diseases related to stress are mentioned by Adams (1980). In fact over 20 million people in the United States have hypertension. Additionally, about the same number are alcoholics. Each of these diseases is conservatively estimated, to afflict one in ten.

Albrecht (1979) asserts that cancer, in fact, may have a stress-derived component. Researchers claim to have identified a "cancer personality," a pattern of attributes and behavior that correlates more highly than any other with the incidence of cancer.

Finally, stress itself can be a killer. Medical researchers believe that sudden acute stress can and often does kill people whose health has been weakened by prolonged exposure to stress.

Other writers agree and add that hypertension is clearly linked to stress. In most cases this disease has no direct organic basis, it simply occurs. Although other factors such as overweight and smoking play a part, many researchers now believe that stress is the primary cause of hypertension. Hypertension disorder kills over 60,000 people a year.

Costs to Organizations

The United States Clearing House for Mental Health Information points to a \$17 billion annual decrease in the productive capacity of United States industry over the last few years because of stress-induced mental dysfunctions. Industry and health groups estimate the cost being closer to \$75-90 billion annually (Ivancevich and Matteson, 1980).

The economic costs of stress, as Behling and Holcombe (1981) point out, are clear; in 1980, one dollar out of every 14 in the United States was spent on health care.

One executive recently took his company's management to court, charging that his work caused him psychological and physiological ailments and finally, a heart attack. The man won his case, and the company was ordered to pay him a cash settlement. Another employee for a large company claimed and was awarded damages for cirrhosis of the liver, which he alleged was due to drinks that he had at business lunches with clients over a period of years (Ivancevich and Matteson). In 1974, the insurance industry charged employers \$3.7 billion in premiums for workers' compensation. In 1981 it rose to \$6.1 billion (Cooper, 1982).

Adams (P179-180) further illustrates the "costs" associated with stress:

- (1) Nearly 35% of all deaths in this country are due to myocardial infarctions.
- (2) Side effects or abuse of drugs is the 11th leading cause of death in the U.S.
- (3) An alcoholic executive (5-8%) costs his/her organization an average of \$4,000 per year in lost time, waste, and so on.
- (4) Hundreds of thousands are killed or badly injured in industrial accidents each year.
- (5) Estimates of the number of suicides per year in the U.S. vary from 25,000 to 50,000. One attempted suicide in eight is "successful."
- (6) We spend over \$120 billion a year on health care.
- (7) Occupational factors are estimated to be involved in 150,000 cancer deaths each year.

Management is now realizing that these and other related personnel costs associated with absenteeism, turnover, premature retirement, serious illness, alcoholism, and death, will become an even bigger problem in the future.

ORGANIZATIONAL RESPONSIBILITIES

Moral or Economic

Management can play an important role in reducing the human and economic costs of employee stress. As managers, they must communicate and coordinate, make decisions, encourage employees to perform effectively, and plan and control work activities. In effect, managers have control over the employees' quality of work life (Miles, 1979). The U.S. Department of Labor-University of Michigan studies (Maloney, 1977) show that managers who are alert to stress factors can work to foster the creative tension that's essential to productivity, while reducing hard-to-take pressures that over the long run are damaging.

Albrecht (1979) believes managers of any organization actually have a direct interest in the health and well being of their workers. To the extent that an employee is overstressed, that person will generally not be able to function at full potential and effectiveness. Albrecht goes on to say:

The organization has certain responsibilities for reducing stress on the job. But unfortunately, most American top managers seem to consider employees' attitudes, morale, and emotional responses to the organization's ecology as a relatively unimportant one. The unspoken principle is: "Unless it gets really bad, so as to jeopardize the production of the organization, don't worry about it." However, the quality of working life has slowly and steadily been gaining notice as a matter of top management responsibility in job stress reduction. (p.135)

The president of Fluor Corporation (Gherman, 1981) agrees:

It is in the self-interest of corporate management to understand and deal with stress. Management must devote some of the time and energy we bring to furthering business and professional careers to the development of a healthy workforce. American business has played a key role in making us the first nation to achieve such unprecedented prosperity. It might also help us become the first to achieve holistic health and individual effectiveness and fulfillment. (p. XI).

Ivancevich and Matteson (1980) believe that management of stress isn't a responsibility added to the manager's many other concerns. It is part of the many responsibilities and problems a manager already deals with and can be redefined as preventive health and stress management concerns.

Ivancevich and Matteson outline three reasons for management to accept the responsibility for reducing excessive stress. The first is humanitarian, the second is the cost associated with lost productivity, and the third is the cost associated with training employees. If the organization can contribute to workers' health and longevity, then it has a humanitarian responsibility to do so. The costs associated with lost productivity are approaching ten percent of the United States gross national product. In addition, the cost associated with training employees to fill vacancies due to death or illness is staggering.

Wright (1975, p.101) summarizes this responsibility: "The responsibility for maintaining health should be a reflection of the basic relationships between the individual and the organization for which he works."

A manager can intervene in stress episodes to help reduce stress or to help increase the employee's ability to defend against it or cope with it. From the point of view of management, stress arises in two ways. Albrecht (1978) asserts that first, managers themselves, as normal human beings, experience pressure as a basic part of their own jobs. If managers find themselves struggling with intolerable levels of stress, they will not be able to function as effectively as they should. Second, if the workers of the organization experience excess levels of stress, then they too will not function as effectively as they should.

Gherman (1981) relates that recognizing stress is inherent in the life of every individual and impacts on all his activities. Human contacts are

fundamental however, to developing strategies to minimize the potentially damaging effects of stress. Therefore, the first step in combating the hazards of chronic stress or stress overload is to recognize that the problem exists. Without this awareness, a company is not likely to expend the conscientious effort, funds, or time required to control the problem. Implementing an effective stress reduction program isn't easy, it requires a conscientious sustained effort over time.

Gherman concurs, in that conflicting values, inconsistent feelings, and discouraging environments often make it difficult to sustain this effort. Corporate executives need to apply themselves, inspire their workforce, and mobilize their resources to maintain a health-enhancing work environment that encourages and stimulates productivity. The amount of effort required to incorporate stress reduction techniques into corporate policy and personal habits may vary over time. At times, procedural and behavioral changes will be subtle and gradual. Under different circumstances, the adjustment will seem more abrupt. New thoughts, feelings, and features of the physical, economic, political, and social environment constantly interact to add to the complexity of controlling stress in the business world.

Summary

Authors generally agree that the responsibility for reducing employee stress belongs to management. The variance arises out of the reasons or to what degree this responsibility exists. Several authors believe it is a moral issue, pointing out the benefit to both the employee and society. Other writers suggest that the primary purpose for addressing stress is the economic gains that the organization will receive.

There is agreement that regardless of the reason for combating stress, the first fundamental step is to recognize that stress exists. Recognition of this problem means that every manager from the top down finds himself/herself faced with the need for a two-pronged approach to reducing and managing stress. First, managers must learn to reduce or manage the stress affecting them and then find ways to help the employees reduce and manage the stress that they feel. Because managers have the job of deciding and directing action, they have most of the opportunities to take action toward stress reduction and stress management.

ALTERNATIVES AVAILABLE TO ORGANIZATIONS

Stress Management

Unfortunately, there are no easy answers or simple solutions on how to handle stress resulting from pressures of daily living, but there are attitudes, skills and behavior patterns that a person can develop and use in managing stress.

Kiev and Kohn (1979) cited five areas that address stress management:

- (1) Stress awareness
- (2) Stress inoculation learning
- (3) Participation management
- (4) Bio-feedback
- (5) Organizational restructure

The key to choosing the most effective methods for dealing with stress is self-awareness. People can develop sensitivity to their physical and emotional reactions by learning to recognize when the palms are sweating, the heart is racing, or the stomach is churning; when they feel generally uptight, frustrated or depressed. The better people understand their own internal responses, the freer they are to choose what to do and how to do it.

According to Blythe (1973), self-understanding also means awareness of what circumstances produce stress. It is very important for one to evaluate carefully the stress potential in a new situation and to estimate the amount of adjustment necessary to avoid excess stressful situations. Sometimes it is wise to seek professional help to achieve insights into why one acts and reacts as one does and to work out realistic ways in dealing with excess stress.

Ivancevich and Matteson (1980) report that stress in organizational settings do not always lead to diseases, illness, behavioral dysfunction, or performance decrements. How people perceive the stressor and what emotion they feel can drastically affect the outcome of the event. Gowler (1975) further related that the "cognitive appraisal" one makes of the stressor can increase or limit their autonomic impact. Adequate preparation for stressful events can be a valuable step in managing stress. However, research clearly indicates that warnings of danger are not always accepted and acted on. An increase in emotional arousal may not, necessarily, increase the likelihood of the person's initiating preventive behavior. Stress inoculation learning can help to cope with stress.

According to Loeb (1980), participants must first learn to:

- (1) Understand stress warning signals.
- (2) Admit that they are under- or over-stressed.
- (3) Develop concrete action steps for coping with their specific work situation, personality and goals.

The value of stress inoculation learning has potential if participants acquire the coping skills. One cannot force others to manage their stressors more effectively. However, a sound inoculation program in an organization can point out the value and importance of the self-regulation of stress.

McLean (1979) revealed one technique in the organizational climate that has received some attention as a stress reducer is participative management. Studies have shown that for some individuals, low participation is related to job dissatisfaction and job threat. The implication would seem to be by altering climate through increased participation, positive results may be achieved. Goldberg (1978) further stated that if a manager invites participation and then does nothing about it, feelings of distrust and manipulation will take over and lead to increased stress. The decision must be meaningful to the people before trying to alter organizational climate through increased participation. However, a manager must remember some people do not want increased participation, and every situation is different.

One of the newest techniques for stress management is bio-feedback. This technique is aimed at relieving stress by allowing individuals to control their physical response to stress or to develop a healthier attitude towards themselves and their lives. Bio-feedback is the most novel of the new approaches to stress control.

According to Niehouse and Massoni (1979), bio-feedback had its introduction in the 1920's when a German psychiatrist Hans Berger discovered that the brain gives off electrical signals that can be measured by a recording machine, the electroencephalograph or (EEG). Berger identified the four types of brain signals, each of which has since been identified with a Greek letter: Beta, Alpha, Theta, and Delta.

When the brain is most active, as when an individual is under stress, it emits Beta waves; when the individual relaxes, the brain emits Alpha waves; deep thoughts provoke the Theta waves; and sleep sends out Delta waves.

As exotic as it sounds, bio-feedback appears to offer some distinct advantages over other stress reduction programs. Bio-feedback takes less time from the job, it is cheaper than many other methods, and its effectiveness can be objectively measured.

Blythe maintains that practically every learning situation in life is an example of feedback. The use of machines make bio-feedback different from other forms. The machines serve a twofold purpose: (1) They show patients the effects of their behavior on their bodies. (2) They give reliable measurable information making patients more aware of how their bodies function.

A typical bio-feedback program only requires about twelve training sessions of one hour each. The cost also compares favorably with other stress reduction programs. A typical fee for a stress reduction program is \$250. Once through the program, individuals are capable of reducing stress by applying the same mental images they used during training to reduce Beta to Alpha waves (Ford and Hartje, 1978).

Another successful technique for eliciting the relaxation response is through transcendental meditation (TM). Many people who have graduated from a TM course report increased productivity, creativity, memory, and self reliance (Gherman, 1981). At the core of TM's wide appeal is its basic simplicity. Training involves only two lectures and one hour of individual attention. After completing training, individuals receive their "mantra"; an easy to pronounce, but meaningless word which individuals can focus upon. Once TM training is completed, only two twenty-minute periods per day are required. Few people have trouble fitting these periods into their schedules (Hassatt, 1978).

Preventive Health

When behavioral scientists talk of preventive health, they are talking about health improvement, the emphasis of which is on keeping people healthy, not just making them well. Preventive health includes any activity that protects the employee from exposure to the causes of disease, disability, or injury, or that enhances a person's ability to withstand stress.

Under preventive health programs, each employee must undergo a rigorous physical and medical history examination to determine the individuals' health risks. After the examination, each employee receives an individualized health prescription. Through physical exams future problems or weaknesses can be detected and programs to minimize or eliminate the risks can be directed by the physician.

Individual workers are counseled on their responsibility to maintain good physical/mental health and the risks and costs of becoming or being ill. If necessary, regular exercise and periodic checkups are recommended to keep workers healthy.

Over 1,000 companies have invested in on-site physical fitness facilities supervised by company medical personnel. These organizations have realized positive returns in terms of improved morale, lower sickness and absentee rates, increased alertness and energy, and greater productivity on the part of those employees utilizing the exercise machines and engaging in weekly workouts. The sustained and dynamic activity of a regular exercise program has important implications for improved muscle tone and posture, weight control, and tension reduction. It also helps to prevent the serious diseases incurred in the absence of any such program (Gherman, 1981).

The organization doesn't have to invest in an on-site facility. Employees can establish their own recreational regime or the company can contribute to employee memberships at community facilities such as Boy's Clubs or YMCA's. The key is self-awareness by the employees of their limitations, needs, and personal requirements. Jogging ten miles a day may be invigorating for one person but deadly or boring for another. The employee's medical history, body type and build, age, temperament, habits, physical location, and time schedule are factors influencing the amount and kinds of exercise in which they engage.

The next step in preventive health is a direct result of health profiling. Managers that are cognizant of the workers health can alter the working environment to reduce an excessive job related stress. Job redesigning, altering reward systems, changing workflows and schedules, clarifying roles, altering organizational structures, and providing development opportunities are some examples of potential courses for preventive management action or intervention.

One of the most promising approaches for stress reduction available to managers is the new science of job engineering. Design the job with the worker in mind, analyze the work and the worker, and match job and the person for the greatest total effectiveness. In today's world, total effectiveness must include the needs, values, and behavior patterns of the worker himself, in addition to the production objectives of the organization. Organizational restructuring may be necessary to relieve stress if the work is physically comfortable and the work environment is not. Kiev (1973) revealed that there are a number of potential environmental stressors: light, noise, temperature, vibration and motion. Usually, these variables are stressors when

physical facilities are old or when they are a part of an operation, such as manufacturing, where noise or heat or other environmental levels are elevated because of the process going on.

In most problem environments, employees use protective equipment because of management and union interest and government requirements. Frequently, the environment has been altered to the extent that it's physically, economically, and/or technically feasible. Wright (1975) reported that it is not always necessary to modify the environment or the people; management may be able to minimize negative stressor effects by changes in their usual operating procedures. Some changes could be: shorter but more frequent breaks, waiving customary dress requirements, changing work schedules and providing a facility where the employee can temporarily escape the stress.

Another aspect which may produce stress is the physical layout of the work area. If the workflow is inefficient because of poor arrangement of people and equipment, it puts an unnecessary physical strain on employees. The following is a summary of six preventive health areas Gmelch (1978) believes, need to be addressed by management.

First: Work overload: An overload means that the worker simply has been assigned an unreasonable number of tasks or an unreasonable level of production to accomplish in a given period. This practice usually causes anxiety, frustration, and a sense of hopelessness and loss of reward. But underload can cause exactly the same feelings. Workers without adequate work to do usually begin to feel frustrated and anxious about their worth and position in the social order of the organization, and unrewarded. Despite the views of

many managers, a few workers turn down satisfying work in favor of loafing. Work underloading can cause stress just as much as overloading can.

Second: Physical variables defining a comfortable environment include adequate lighting, comfortable seating, good air and heat circulation, and pleasant surroundings. These are important to the person spending the majority of their day there. Backaches, headaches, and anxiety can be significantly reduced in many cases by changing the stress-producing agent in the physical environment.

Third: One of the greatest sources of job stress is ambiguity. When an employee cannot develop a clear picture of his job and responsibilities he/she may become anxious, disgruntled, fearful of making any decisions or taking action on their own initiative, insecure about their contribution, and lacking in overall job satisfaction.

Fourth: Task variety ranges all the way from deadly dull, monotonous, repetitive job tasks to confused, unpredictable, completely unprogrammed job situations in which the worker has very little idea about what to do next. Both create frustration, anxiety, and feelings of lack of real accomplishment. Despite reports that some workers actually seem to like monotonous jobs, Weick believes that many of them have merely made psychological adaptations to the jobs and feel they can handle them. Very few people would deliberately apply for a monotonous job for its own sake. Most workers rate having an interesting job as being fairly high on their scales of priorities.

Fifth: Physical challenge includes needs for dexterity, physical skill or strength, endurance, physical mobility, risk of personal danger, and opportunities to handle various physical artifacts or tools associated with the job. Physical underloading does not usually produce much anxiety or frustration unless the individual has a high appetite for activity. Physical overloading can lead to injury or illness if the demands of the task are beyond the capabilities of the individual assigned to perform it. Explosives experts, police officers, and construction workers among others can experience considerable stress induced by the risk features of their jobs.

Sixth: Mental challenge includes brain activities which keep the individual psychologically involved with job tasks. Processes such as observing, recognizing, memorizing, monitoring, comparing, evaluating, deciding, and reasoning all require a conscious thought process from the worker. It is a mistake to design a production job with the aim of eliminating all mental tasks from it. People perform more effectively and gain greater satisfaction when they must use their cognitive skills at least to some degree. Individuals also perform much more effectively when they receive responsive feedback about their performance, a fact that has been demonstrated repeatedly in industrial motivation studies. A mentally underloaded task actually prevents the worker from using his brain and often induces feelings of exasperation, frustration, detachment, and a desire to escape to something more stimulating. A mentally

overloaded task presents the worker with demands for mental activity beyond his level of competence and training thus creating feelings of inadequacy and frustration.

Summary

Whether the best way to switch gears is to give the mind and body a change of pace by running 20 miles a day, or utilizing TM is a matter of awareness and personal preference. Some people react to stress mentally, some physically, and still others with a combination of the two. Because a multi-dimensional health-enhancement program offers more ways of relating to the inner and exterior environments, the organization utilizing preventive health and stress management has a better chance of succeeding.

Managers who know themselves and are able to identify stress in themselves have taken a big step toward successful preventive health and stress management, but they must also know their employees. By knowing the employee's customary behavior patterns, the manager can spot any change in personality, work habits, or general behavior.

Thinking in terms of preventive health and stress management requires time, money, and commitment from top management down to the worker before it has any chance of showing long-run results.

CONCLUSIONS

Studies have clearly identified that stress causes illness. Stress has been linked to ulcers, heart disease, cancer, hypertension, loss of productivity and even death. Writers and researchers agree that the primary cause of stress induced illness is work related.

Almost every possible situation in the work environment has the potential of being stressful to someone, at some time. Some of the more common

situations that may cause stress are over-exertion, poor work economy, work overload, and work underload.

Whether or not work actually provokes stress depends a great deal on how a person reacts to the situation. Individual reactions are important in understanding the consequences of a potential stressful environment.

The cost of stress in terms of lost productivity is approaching a dollar figure of close to ten percent of the GNP. Organizations are paying the same kind of high price through decreased productivity.

Most experts agree that management can play an important role in reducing stress. Reducing stress is an extension of other measures organizations have already taken to protect the health and welfare of employees. For instance, the wearing of protective clothing, installation of safety guards on machines, no smoking and hazardous materials signs.

Regardless of whether the organization acts to alleviate stress because of moral or economic reasons, the result will benefit both the organization and society. However, since there is no single cause or effect of stress, a simple solution to correct the problem does not exist. Therefore, a combination of approaches need to be established to help people and organizations deal effectively with stress within the workforce.

The two generally recognized approaches to reducing stress are stress management and preventive health.

The key to choosing the most effective method of dealing with stress is self-awareness. Stress management is an awareness technique that educates the employee on how to handle stress using learned attitudes, skills, and behavior patterns. This method consists of developing an awareness on the part of the individual to enable him to recognize the physical effects of

stress and the situations that induce or cause stress. Preventive health utilizes a combination of techniques starting with the physical health of the employee and then applying the science of industrial engineering to improve the work environment.

All organizations have a legitimate interest in reducing stress within the work environment. Stress management and preventive health are an integral part to organizational effectiveness and efficiency, and are essential to achieving optimal organizational productivity.

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