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FIVE COLLEGE DEPOSITORY

**OCCUPATIONAL STRESS: A STUDY OF PUBLIC
SCHOOL ADMINISTRATORS IN SOUTHEAST
MASSACHUSETTS**

A Dissertation Presented

by

MICHAEL A. GREEN

Submitted to the Graduate School of the
University of Massachusetts in partial fulfillment
of the requirements for the degree of

DOCTOR OF EDUCATION

September 1988

School of Education

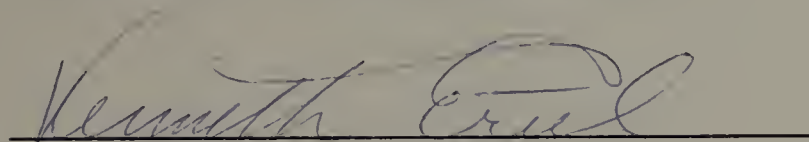
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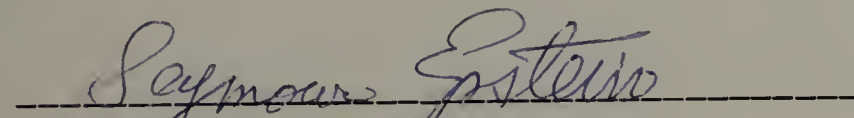
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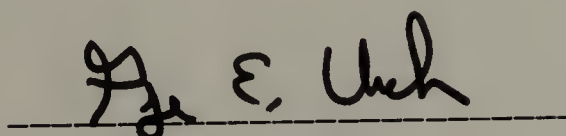
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This dissertation is dedicated to my Mother, Joyce B. Green, and my Father, Henry W. Green, who provided me with the best material environment possible which caused me to recognize the need for educational achievement.

ACKNOWLEDGEMENTS

A Project of this nature only can be completed through the efforts and encouragement of many people. Knowing that this was accomplished only "with the help of friends", the writer wishes to express grateful thanks to the many persons who made this dissertation possible:

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Finally, appreciation is extended to my family and friends, for their acceptance, enduring patience and warm support.

ABSTRACT

OCCUPATIONAL STRESS: A STUDY OF PUBLIC SCHOOL ADMINISTRATORS IN SOUTHEAST MASSACHUSETTS

SEPTEMBER 1988

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This study focused on Southeast Massachusetts Public School Administrators' perception of the sources of stress in their jobs and the relationship of those stressors to job success and health. It sought to investigate the structure of stress by examining the kinds of events that produce stress. It looked at the five "factors" of the Oregon School Administrators Stress Survey to determine if in fact, five factors exist and determine the actual factor structure of the potential stressors, termed load.

It was a purpose of this study to examine the effect of load, sensitivity (which pertains to the potential stressors and how bothersome they are) and stress (load x sensitivity) on success on the job, emotional health, and physical health.

It was also a purpose of this study to examine the effect of Constructive Thinking on success on the job, emotional health, and physical health and to examine the combined effects of Constructive Thinking and load or sensitivity or stress on success on the job, emotional health, and physical health.

One hundred fifty school administrators were sent a packet that included the Oregon School Administrators Stress Survey, the Constructive Thinking Inventory, the Primary Emotions and Traits Scale, a medical checklist and a demographic data sheet. One hundred five were returned. Ninety -two administrators provided complete responses to the instruments while thirteen subjects were eliminated due to incomplete data.

The Statistical Package for the Social Sciences (SPSS) was used for statistical analysis.

Results from the Confirmatory Factor Analysis on the Oregon School Administrators Stress Survey showed only two, not five, factors were evident for both load and stress. They were Administrative and Interpersonal Stress.

Analyses revealed positive and negative relationships between stress and constructive thinking and between stress and success on the job; constructive thinking and success on the job, and the interaction between stress and constructive thinking as it relates to success on the job.

Further analyses showed relationships (both positive and negative) between stress and physical health; constructive thinking and physical health, and the interaction between stress and constructive thinking on physical health.

Implications for the selection and professional development of school administrators were discussed.

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CHAPTER I

INTRODUCTION

This research focused on the reception stage of stress. It identified the perceptions public school administrators had concerning the sources of demands or stressors placed on them by the schools in which they work.

Recent literature on stress clearly indicates the difficulty researchers and writers in the field have had defining stress. Stress is not a very precise concept. Nevertheless, authorities recognize stress does involve both environmental and intrapersonal conditions. It is generally agreed that stress is interwoven in the relationship between an individual's personality and the environment in which he/she finds himself/herself placed.

All stress is not negative. Stress has many positive features; however, for the purpose of this study, stress was viewed from the negative effects upon the individual and organization.

Research conducted during recent years has produced a growing body of evidence that occupational stress is a causal factor in the health of employees. Occupational stress is regarded as a

negative environmental factor or stressor (e.g. role ambiguity, work overload, conflict) associated with a particular job or place of employment (Cooper-Marshall, 1976).

Some diseases in which stress plays a particularly important role are high blood pressure, cardiac accidents, gastric or duodenal ulcers, and various types of mental disturbances (Selye, 1975; Glass, 1976).

According to Rabbin (1985), more than half of the deaths in the United States are attributed to the stress-related disorder of heart disease. Other physiological reactions occur under stress. Changes in blood pressure, heart rate, respiration and skin temperature are the most common responses of the autonomic nervous system (Pelletier, 1977). Holmes and Rahe (1968) pointed out the connection between life changes and subsequent health changes.

Stress also produces psychological responses. Lazarus (1966) defines psychological stress as threat; others have equated it with anxiety, fear, conflict, demands and pressure (Reed, 1975).

Psychological stress produces both emotional and physiological changes when it exceeds the individual's tolerance range.

Stress causes people to look for solutions to their problems, and if one alternative is blocked, they may seek another. The outcome may then be very productive (Tanner, 1976). However, if the anxiety increases until the individual is faced with excessive stress, solutions

may be destructive rather than productive. It is at this stage that psychological and physiological changes may contribute to disease and negatively impact professional performance.

Kahn (1970) presented a sequence of events depicting the stress process most appropriately related to this research. His paradigm adapted itself to both individual and organizational stress. Four stages were identified in the model, beginning with a set of factors in the objective environment which caused a demand on the individual or the organization located in the environment. The next stage was reception of the demand by the organization or individual. This led to the immediate reaction or response if the demand was recognized. This response might have been in the form of psychological, physiological or behavioral changes. The fourth state, called enduring consequences, was differentiated from immediate responses. It involved longer-range effects, i.e. the changes beyond the immediate grief which occurred in one's life due to the death of a loved one.

Constructive Thinking

The impact of an external stressor is not the direct consequence of the external event or events that are experienced, but of how a person perceives and copes with the events. An event that is

bothersome or stressful to one person is to another an engaging challenge that makes life interesting. Constructive thinking is a general way of coping with life events in a manner that minimizes stress.

Bad constructive thinking can increase the stressful reaction to a situation. Listed below are items from the Constructive Thinking Inventory which are examples of bad constructive thinking:

(a) When I am faced with a new situation, I tend to think the worst possible outcome will happen.

(b) It is so distressing to me to try hard and fail that I rarely make an all-out effort to do my best.

In (a), the individual focuses on the negative aspects of a new situation and fails to see the situation as an interesting challenge. With this type of thinking, often times, the worst will come out of the new situation, increasing stress. In (b), the individual, fearing failure, will not put his best into what he does, therefore, occasionally failing and increasing stress.

On the other hand, good constructive thinking can decrease the stressful reaction to a situation. Listed below are items from the Constructive Thinking Inventory which are examples of good constructive thinking:

(a) When I am faced with a difficult task, I think encouraging thoughts that help me do my best.

(b) I look at challenges not as something to fear, but as an opportunity to test myself and learn.

In (a), the individual perceives the difficult task as a challenge and uses this way of thinking to minimize stress. In (b), the individual looks at challenges as an opportunity to better himself. Again, this type of constructive thinking will minimize stress.

A relationship should exist between the amount of stress a person experiences in everyday life and constructive thinking. More specifically, people with poor constructive thinking scores should experience more stress in life than people with good constructive thinking because they cope less effectively with stress.

Sources of Occupational Stress

In 1978 the Oregon School Study Council sponsored research by Dr. Boyd Swent (Swent, 1978) to identify the perceptions of school administrators concerning the sources of their occupational stress. A stress survey was designed in which stressors were categorized into five factors with seven items in each factor. The five factors are: constraints intrinsic to administration, administrative responsibility, interpersonal relations, intrapersonal conflict and role expectations.

Administrative Constraints Constraints intrinsic to the administrative position can be sources of stress. These stressors are related to time, meetings, work load and compliance with federal, state and organizational policies.

Administrative Responsibility This relates to tasks characteristic of nearly all administrative positions including supervision, evaluation, negotiations and gaining public support for school programs.

Interpersonal Relations Stress from interpersonal relations results from conflict with other people both inside and outside the school. For school administrators, these people include parents, staff, students, community members and superiors.

Intrapersonal Conflict Intrapersonal conflicts represent sources of stress resulting from conflicting demands between job performance and individual beliefs or goals.

Role Expectations Another source of stress for the school administrator results from a difference in the expectations of self and various people (such as students, parents, colleagues, school board members, supervisors and members of the community) with whom the administrator must deal.

There were 1,156 administrators who responded to the Oregon School Administrators Stress Survey (OSASS). The top ten stressors identified in this study as most bothersome to administrators were, in the order listed:

1. Complying with federal, state and organizational rules and policies.
2. Feeling that meetings take up too much time.
3. Trying to complete reports and other paper work on time.
4. Trying to gain public approval and/or financial support for school programs.

5. Trying to resolve parent/school conflicts.
6. Evaluating staff members' performance.
7. Having to make decisions that affect the lives of individual people whom the administrator knows (colleagues, staff members, students, and so on).
8. Feeling that administrators have too heavy a work load, one that cannot possibly be finished during the normal work day.
9. The administrators imposing excessively high expectations on themselves.
10. Being interrupted frequently by telephone calls.

Five of the top ten individual stressors appeared in the Administrative Constraint factor. Interpersonal Relations and Intrapersonal Conflict each had two of the top ten, while the Administrative Responsibility factor had only one. None of the top stressors were found in the Role Expectations factor.

Public School Administrators are one group of individuals who experience stress in their jobs. In addition to being bothered by the items previously mentioned in the Oregon Study, these administrators are confronted with additional pressures germane to their role. According to Gmelch and Swent (1981), problems confronting public school administrators are quite similar to those faced by managers in industry. They argue that too many

responsibilities are accepted that evolve into over-demanding roles; i.e. controller, motivator, persuader, disciplinarian, firefighter, preserver of the culture, specialist, and parent surrogate. The administrator becomes the role prisoner

Statement of the Problem

Based on current literature and research on the subject of occupational stress, there seems to be sufficient evidence to make the following conclusions:

1. Stress exists in the lives of all people and, to a greater degree, in those working in people-related professions.

2. The same positions may create different amounts of stress in different people because of each individual's interaction between the environment and his/her personality.

3. An individual's health may be negatively affected due to excessive stress or the inability to cope with stress.

The purpose of this study was to identify the perceptions Public School Administrators have concerning the sources of their occupational stress. More specifically, it will investigate the structure of stress by examining the kinds of events that produce stress. It will look at the five "factors" of the Oregon School Administrators Stress Survey to determine if in fact, five factors exist

and determine the actual factor structure of the potential stressors, termed load.

It was the purpose of this study to examine the effect of load, sensitivity, and stress on success on the job, emotional health, and physical health.

It was also the purpose of this study to examine the effect of constructive thinking on success on the job, emotional health, and physical health and to examine the combined effects of constructive thinking and load, sensitivity, or stress on success on the job, emotional health, and physical health.

Instrumentation

In order to accomplish these objectives, the researcher asked participants to complete the following:

1. Oregon School Administrators Stress Survey (OSASS) to identify the perceptions of Public School Administrators concerning the sources of their occupational stress.

2. Constructive Thinking Inventory (CTI) to acquire information on the participants' coping ability.

3. Primary Emotions and Traits Scale (PETS) which provided information on the participants' emotional health.

4. Medical History Checklist (MHC) which provided information on the participants' physical health.

Statement of Hypotheses

HYPOTHESIS 1

There is a significant negative relation between stress and constructive thinking.

HYPOTHESIS 2a

There is a significant negative relation between stress and success on the job.

HYPOTHESIS 2b

There is a significant positive relation between constructive thinking and success on the job.

HYPOTHESIS 2c

There is a significant interaction between stress and constructive thinking as it relates to success on the job.

HYPOTHESIS 3a

There is a significant negative relation between stress and emotional health.

HYPOTHESIS 3b

There is a significant positive relation between constructive thinking and emotional health.

HYPOTHESIS 3c

There is a significant interaction between stress and constructive thinking as it relates to emotional health.

HYPOTHESIS 4a

There is a significant negative relation between stress and physical health.

HYPOTHESIS 4b

There is a significant negative relation between constructive thinking and physical health.

HYPOTHESIS 4c

There is a significant interaction between stress and constructive thinking as it relates to physical health.

Definition of Terms

This section was included in order to provide the reader with the definition of terms specific to this study.

Burnout: "The result of constant or repeated emotional pressure associated with an intense involvement with people over long periods of time" (Pines et al., 1981, p.15).

Load: Pertains to the potential stressors and how frequently they occur.

Occupational Stressors: Factors inherent to the work or to the work environment that place physical or psychological demands on an individual.

Sensitivity: Pertains to the potential stressors and how bothersome they are when they do occur.

Stress: Pertains to any action or situation that places physical or psychological demands on an individual.

Significance of the Study

This study will make a contribution to the knowledge of Educational Administrators in assisting them to maintain their job effectiveness while preserving their health and emotional well-being. Stress influences job performance and productivity in the areas of absenteeism, turnover, job dissatisfaction, and similar factors.

Stress is an important concern for each local education agency because it affects (a) an individual's morale and psychological well-being, (b) the quality and care of job performance, and (c) administrative functioning (Cherniss, 1980). Whether the outcome of perceived stress is physical, mental or emotional, the consequences of stress are significant in terms of the individual's welfare and the organization's efficiency (Ivancevich & Matteson, 1980).

There are a variety of behavioral symptoms that can be stress induced: abrupt mood swings, lowered tolerance for frustration, increased irritability, loss of caring for people, feelings of helplessness, and/or lack of control, paranoia, suspiciousness, and greater professional risk-taking are common evidence of stress-related behavioral changes (Cardinell, 1980). These symptoms may have severe implications for the public school system in which the stressed individual works.

Many educational administrators are experiencing high stress leading to burnout. The end result is that many talented individuals with aspirations are dispirited and disillusioned. Many leave the profession, others stay but are plagued by a multitude of physical, emotional, and behavioral stress-related manifestations (Milstein and Golaszewski, 1975).

Large numbers of burned-out employees impose financial as well as medical and psychological burdens on organizations. As a result, the organization, which in this case is the public school

system, must engage in a process of investing time and resources in training new employees and developing their competence to replace burned-out employees who leave. To this extent, burnout may jeopardize the organization's performance and attainment of goals.

This study will provide a framework with which program planners and administrators can identify potential causes of high stress leading to burnout and a conceptual base for recommendations and practical application. District Administrators and School Board Members could use this information to bring about organizational changes designed to relieve some of the sources of stress and burnout in the work routine of Public School Administrators. There also may be implications for staff development programs to assist Public School administrators in coping more effectively with sources of occupational stress and burnout.

In the long run, this research will benefit the taxpayer who is concerned with having quality education programs and, at the same time, having school administrators whose job performance and productivity are commensurate with the high salaries that they now command.

Limitations of the Study

1. The population for this study consisted of Public School Administrators in Southeast Massachusetts. The results of the study

are generalizable only to other regions with comparable characteristics.

2. The study was limited to a self-reporting of perceived stress. The researcher had no control of the accuracy of each subject's response.

3. The nature of this study did not lend itself to an experimental inquiry approach. Therefore, the findings could not identify cause and effect relationships between variables.

CHAPTER II

REVIEW OF THE LITERATURE

Stress-Related Research

Through the ages human beings have experienced exhaustion after hard labor, prolonged exposure to cold or heat, loss of blood, agonizing fear, and disease. Man may not have been consciously aware of the similarity in his response to anything that was simply "too much for him", but when the feeling came, he must have realized instinctively that he had exceeded the limits of what he could reasonably handle. When faced with prolonged and unaccustomed hardship, his reactions followed a pattern: at first, the experience was difficult, then he adjusted to it; finally, he could not cope with it. It is unlikely that this response was regarded as a general law regulating the behavior of living beings faced with an exacting task. This was to be explored only after countless generations of many had recognized this condition and termed it "stress".

Early researchers of stress failed to distinguish between distress, which is always unpleasant, and the general concept of stress which, in addition, also includes the pleasant experiences of joy, fulfillment and self expression (Selye, 1956). It was the French physiologist Claude Bernard who, during the second half of the nineteenth century, taught that one of the most characteristic

features of all living beings was the body's ability to maintain the constancy of its internal environment despite changes in the surroundings. The physical properties and the chemical composition of body fluids tend to remain remarkably constant despite all the outside changes. Whenever this self-regulating power fails, disease or even death may result (Selye, 1965). Walter B. Cannon, the Harvard physiologist, subsequently called this power to maintain constancy in living beings, homeostasis, the ability to remain the same or static (Cannon, 1932).

In 1915, Cannon's Bodily Changes in Pain, Hunger, Fear and Rage presented observations on the somatic manifestations of acute emotions, particularly with regard to the effect of fear, rage, hunger and thirst upon the sympathetic nervous system. In a later work, The Wisdom of the Body (1932), Cannon summarized his lifework on the distinct mechanisms which maintain the normalcy of sugar, protein, fat, calcium, oxygen and temperature of the blood as well as many other specific adaptive mechanisms. In this work, he laid the basis for a systematic analysis of the separate adaptive phenomena indispensable for the maintenance of life under special conditions. Since he did not touch upon the role of the pituitary or the adrenal cortex, he was unable to explore the possible existence of nonspecific adaptive reactions that play a part in coping with virtually any kind of demand. Therefore, this path of research was left to be explored at a later time.

In 1926, Hans Selye, as a second-year medical student, came across the problem of stereotyped response to any exacting demand made upon the body. He began to wonder why patients suffering from the most diverse diseases that threaten homeostasis have so many signs and symptoms in common. But it was not until 1936, while working on other laboratory experiments, that he made the connection with his former area of interest and turned to it as a topic for research. It became evident from animal experiments that the same set of organ changes was caused by cold, heat, infection, trauma, hemorrhage, nervous irritation and many other stimuli. This was an experimental replica of the "syndrome of just being sick," (Selye, 1956) which subsequently became known as the General Adaptation Syndrome or GAS (Selye, 1974). Its three stages are illustrated in Figure 1.

1. Alarm reaction. The body shows the changes characteristic of the first exposure to a stressor. At the same time, its resistance is diminished and, if the stressor is sufficiently strong (severe burns, extremes of temperature), death may result.

2. Stage of resistance. Resistance ensues if continued exposure to the stressor is compatible with adaptation. The bodily signs characteristic of the alarm reaction have virtually disappeared and resistance rises above normal.

3. Stage of exhaustion. Following long, continued exposure to the same stressor to which the body had become adjusted, eventually adaptation energy is exhausted. The signs of the alarm reaction reappear, but now are irreversible and the individual dies (Selye, 1974, p.27).

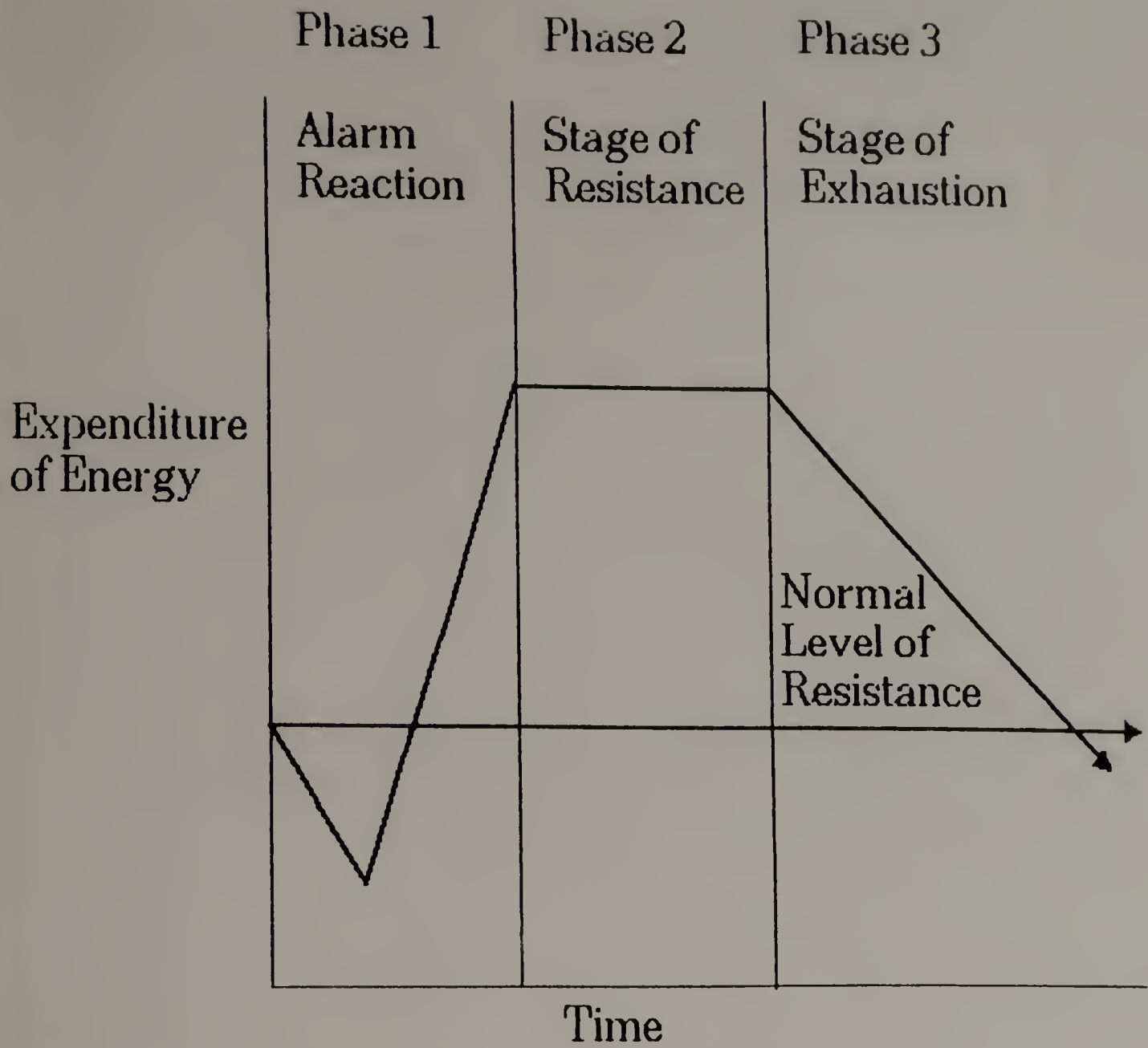


Fig. 1. General Adaptation Syndrome (Selye, 1974)

It should be pointed out that the triphasic nature of the GAS gave researchers the first indication that the body's adaptability, or adaptation energy, is finite.

Since 1936, numerous additional biochemical and structural changes of previously unknown origin have been traced to stress. Among these, researchers have given special attention to changes in the chemical constituents of the body and to nervous reactions.

Over the years, hundreds of researchers have contributed to the growth of knowledge in the field of stress; it has become apparent that in advanced nations, physiological stresses have become less prominent in this century. At the same time, psychological and socio-cultural pressures have increased. Although the legacy of early man remains within each individual, always battle-ready for physical dangers which no longer exist, man still remains inexperienced in ways of coping with today's stresses which have changed to much more subtle forms.

Extensive work in the past two decades has been done by Thomas Holmes and his associates at the University of Washington in relating psychological and socio-cultural stresses to the onset of disease. The researchers studied over 5,000 subjects to ascertain the quality and quantity of events which tended to cluster prior to the onset of illnesses in their lives. As a result, Holmes and Rahe developed a Social Readjustment Rating Scale (Figure 2). There are

two types of items on the scale: those indicative of occurrences involving the individual and those indicative of the lifestyle of the individual. The Holmes and Rahe study indicated the wide variation in the emotions and psychological effects experienced by their patients. On the final list, all of the life events had one thing in common: each event was associated with some adaptive response on the part of the individual. In other words, each event proved stressful in requiring that the individual involved be or do something different in order to adapt.

Not all of the events are negative in the conventional sense. Many of the life events on the list may be considered to be socially desirable. Nevertheless, these events are found to be stressful even though pleasant. Hans Selye points out that it is immaterial whether the stimulus is pleasant or unpleasant; all that counts is the intensity of the demand for adaptation (Selye, 1956). Holmes relates the significance of the Social Readjustment Rating Scale to disease as follows:

...the point totals listed are in relation to the strength of the stress event and the intensity of the demand for readjustment. The higher the point score, the more likely the individual is to suffer a decline in health. This includes serious illness, accidental injuries, surgical operations, and psychiatric disorders (Holmes, 1967, p.214).

LIFE EVENTMEAN VALUES

1. Death of Spouse	100
2. Divorce	73
3. Marital Separation	65
4. Jail Term	63
5. Death of Close Family Member	63
6. Personal Injury	50
7. Marriage	50
8. Fired At Work	47
9. Marital Reconciliation	45
10. Retirement	45
11. Change in Health of Family Member	44
12. Pregnancy	44
13. Sex Difficulties	39
14. Gain of New Family Member	39
15. Business Readjustment	38
16. Change in Financial State	37
17. Death of Close Friend	36
18. Change to a Different Line of Work	35
19. Change in Number of Arguments with Spouse	31
20. Mortgage of \$50,000	29
21. Foreclosure of Mortgage or Loan	29
22. Change in Responsibilities at Work	29
23. Son or Daughter Leaving Home	28
24. Trouble with In-laws	26
25. Outstanding Personal Achievement	26
26. Spouse Begins or Stops Work	25
27. Begin or End School	24
28. Change in Living Conditions	23
29. Revision of Personal Habits	20
30. Trouble with Boss	20
31. Change in Work Hours or Conditions	20
32. Change in Residence	19
33. Change in Schools	19
34. Change in Recreation	18
35. Change in Church Activities	17
36. Change in Social Activities	16
37. Loan Less than \$10,000	15
38. Change in Sleeping Habits	16
39. Change in # of Family Get-togethers	15
40. Change in Eating Habits	15
41. Vacation	13
42. Christmas	12
43. Minor Violations of the Law	11

Fig. 2. Results of Social Readjustment Rating Questionnaire

There are vast differences in the stress patterns of individuals. These differences are observable in (a) the likelihood of experiencing significant distress, (b) the severity of a resulting illness, and (c) the rate at which an individual recovers. Many factors can influence these differing reactions to stress. In Stress & Disease, Harold G. Wolff points out that

...stress occurring from any given situation is based in large measure on how the individual involved perceived it. Man is especially vulnerable among living beings in this regard because he reacts not only to the actual existence of stress, but to its symbolic interpretations as well (Wolff & Goodell, 1968, p. 199).

The various stressful stimuli have a cumulative effect as implied in the Holmes-Rahe table of stressful life events. It is as if ...the stress of the water behind the dam is composed of the total impact of all the physical, chemical, microbiological, socio-cultural, and psychological events which happen to us: when the impact reaches a certain height, water cascades over the spillway, no matter in what portion of the watershed the downpour occurred (Anderson, 1978, p. 25).

In more recent years, researchers have investigated a wide variety of aspects of life stresses and have looked at those in the environment, in interpersonal relations, within the individual's own disposition, and in work situations.

Literature on stress clearly indicates the difficulty researchers and writers in the field have had in defining stress. It must be admitted that stress is not a very precise concept, although the feeling of stress is one which people easily recognize. It is as much a part of people's lives as joy, happiness, pain, and other feelings of euphoria or defeat. However, due to multiple uses, references, and definitions, the exact meaning of stress remains ambiguous. Terms typically associated with stress are anxiety, frustration, strain, conflict and tension. People also think of stress in terms of pressure situations, uptight feelings, nervousness, personal demand and other unpleasant encounters.

Frustration, conflict and anxiety have become a significant part of people's lives. People are aware of few outlets in work and leisure to relieve their pressures. In 1972, the Department of Health, Education and Welfare published a study, Work in America, on the psychological aspects of work.

The study's authors concluded that improvements in the quality of working life hold out opportunities for actually avoiding illness, indeed, for stimulating healthy behavior. But

the task force also said that various aspects of work account for many factors associated with heart disease, hypertension, and other health problems, including a high correlation with symptoms of mental disorder. It further observed that although we are largely ignorant of causal factors, the correlational, case history, and anecdotal and physical health problems is too convincing to dismiss (McLean, 1976, p.42).

An overwhelming amount of information has been compiled about stress. In 1950, Hans Selye's pioneering work was the sole technical account published on stress. Since then, over 80,000 articles have been written, 1,000 research projects have been completed, and every year 6,000 more publications are catalogued under the heading of stress (McQuade, 1972). The word, stress, is one with which the layman is familiar. People encounter it every day.

Stress is not only unpleasant or negative, but positive as well. The Chinese have two characters representing stress: one signaling danger and the other opportunity. Like the Chinese representation, stress encompasses both distress (bad or unpleasant) and eustress (good or pleasant). Divorce is stressful, but so is marriage. Both work and play are stressful (Holmes, 1967). Vacations are a primary producer of stress in this country (Tanner, 1976). Authorities

generally agree that stress is interwoven in the relationship between an individual's personality and the environment in which he finds himself.

While it becomes clearer what stress is, it is also important to know what stress is not. Stress is not merely nervous tension nor is it just the well-publicized executive stress. It is a disease which afflicts nurses, secretaries, principals, auto mechanics and custodians alike. Research conducted during recent years has produced a growing body of evidence that occupational stress is a causal factor in the poor health of many employees. Examples of occupational stressors are work overload, role ambiguity and conflict. These are regarded as negative environmental factors that are associated with a particular job or place of employment (Cooper & Marshall, 1976).

The body's response to stress has been claimed as a major factor in the etiology of several diseases (Benson, 1974). Some diseases in which stress plays a particularly important role are: high blood pressure, cardiovascular accidents, gastric or duodenal ulcers and various types of mental disturbances (Selye, 1974). French and Caplan (1970) in a research project for NASA, found that certain types of job stresses cause changes in the risk factors (smoking, blood pressure, cholesterol, serum uric acid and glucose) in heart disease. They have found that there are two aspects of overload in job stress: one in which overload actually occurs in the person's external

environment (an unusually large number of telephone calls or office visits, for example), and the other where overload exists solely within the individual. It is how much work load he feels he has; how much of a burden or pressure he believes he is under. While it is important to distinguish between these two types of overload, the researchers did find that both types of overload are correlated; that is, people do feel overloaded when they actually have more telephone calls than is normal (French and Caplan, 1970). Hennigan and Wortham (1975) found that subjects who viewed situations as stressful responded with higher heart rates. Additional support for this proposition came from Doerr and Hankanson (1965) who found that the heart rate increased when subjects were given frustrating instructions.

Other physiological reactions occur under stress. Changes in blood pressure, heart rate, respiration and skin temperature are the most common responses of the autonomic nervous system (Pelletier, 1977). Research has established the connection between life changes and subsequent health changes (Holmes, 1967), but the linking mechanisms in this area currently are not clear.

Stress also produces psychological responses. Basically, there are four ways that people respond to stress psychologically: (a) fight like a lion, (b) flee like a deer, (c) freeze like a pheasant, or (d) learn like a child (Cannon, 1932; Pelletier, 1977). Whether they are stimulated by unconscious or conscious thought, all are valid means of reducing over-stimulations and excessive stress.

Fighting is basically a power-oriented response wherein winning or overcoming sources of resistance is of primary importance. Standing up for one's rights, defending a position, or even winning on the racketball court are examples of the fight response (Anderson, 1978). The manifestations of fight in education are most evident in adversary situations. These situations range from bargaining at the table to debating alternative courses of action. Some people have an innate aptitude for the "give and take" of adversary encounters, but most individuals must serve a long and stressful apprenticeship before proficiency can be noticed. All fight responses constitute a tremendous psychological drain. The longer and more frequent the duration of such behavior, the greater and sooner the exhaustion (Anderson, 1978).

People also respond to stress by fleeing or avoiding the stressor by a number of defense mechanisms: rationalizing away a problem, escaping an unpleasant experience through fantasizing, or withdrawing from an uncomfortable situation (Anderson, 1978). These and other commonly used stress-reducing defense mechanisms are basic components of the flight response repertoire. Signs of these responses within the educational setting show up in staff turnover, sick leave, unfinished projects, or over-delegation.

The flight response helps to block out more stress that a person is able to handle at any particular time. In some situations, this may be very functional and productive. However, in other situations, the

flight behavior may be highly inappropriate and may only serve to aggravate the problem. An example of this might be budget reports that are due but tend to be put off week after week, thereby creating more and more stress until finally confronted.

The third psychological response to stress is freezing (Gmelch, 1977), better known in the sports world as "choking". Choking is what the free-throw shooter sometimes does when the outcome of the game depends on the last basket. Educators see this phenomenon quite frequently in the form of students "blanking out" on important examinations, interviewees unable to respond to simple questions, or a person spontaneously called upon to give a speech in front of a prominent audience losing his voice. In all of these circumstances, preoccupation with the stressor (a test, interview, or speech) produces a mental paralysis. Many times the stressful anticipation of an event proves to be more stressful than the event itself, thus producing performance paralysis.

Everyone has the fight, flight and freeze responses to some degree. When they are experienced too often, they often leave people less able to cope with stressful situations. All of these responses are appropriate when used on a short-term basis to allow people to develop more productive techniques for coping. Therefore, while the use of these responses protects people from stressful situations, attempts should be made to become more aware of their uses and to re-channel energy into more productive, long-term means of coping.

The final psychological response to stress, learning, is unique to human beings. It enables them to control the outcome of a stress-producing situation in an effective and constructive manner.

Furthermore, in contrast to the three previous responses, it leaves people better able to cope with stressful situations in the future.

Fight, flight, and freeze can be viewed as temporary, immediate, and, many times, unconscious reactions. The mastery of stress by learning, on the other hand, is a process for managing future stress rather than inappropriately responding to the present (Burgoyne, 1975).

The learning response is preventative rather than remedial. This involves some uncertainties and may in itself generate stress. However, the learning response is not viewed as the only and most effective response pattern that people have. Many times a strategically-placed defense mechanism will help people cope with the present so they can get on with the future. The learning response has the potential of equipping people to cope effectively on a long-term basis (Gmelch, 1977).

Psychological stress has been defined as threat (Lazarus, 1966). Others have defined it as anxiety, fear, conflict, demand and pressure (Reed, 1955). Psychological stress produces both emotional

and physiological changes when it exceeds the individual's tolerance range.

Stress is common to everyone's life and is not something that can be avoided totally. It is the spice of life, and only in death is stress nonexistent (Selye, 1974). Stress causes people to look for solutions to their problems, and if one alternative is blocked, they may seek another. The outcome may then be very productive (Tanner, 1976). However, if the anxiety increases until the individual is faced with excessive stress, solutions may be destructive rather than productive.

Stress costs, and we all pay. According to Rabbin (1985), the cost of unmanageable stress in the workplace exceeds \$40 billion per year. These costs include: utilization of medical benefits, in- and out-patient hospital care, increased absenteeism, poor job performance, low morale, increased use of alcohol, tranquilizers and cigarettes, lessened creativity and decision-making abilities, carelessness, high accident rate and death.

Stress in School Administration

Leaders in business and industry are popularly considered highly susceptible to stress and disease. Certainly school administrators are exposed to comparable pressures.

According to Gmelch and Swent (1981), problems confronting school administrators are quite similar to those faced by managers in business and industry. They argue that the problem with being a manager in any organization is that too many responsibilities are accepted that evolve into over-demanding roles; i.e. controller, motivator, persuader, disciplinarian, firefighter, preserver of the culture, specialist, and parent surrogate. The administrator becomes the role prisoner.

Vanderpol (1981) also found the role of school administrator to be a factor in bringing about stress. He states that the changing role of school administrator is a primary source of job-related stress. School administrators must change from making the right decisions alone - and feeling comfortable with a great deal of unquestioned power - to working actively with subordinates to reach decisions.

The 1977 national study of the senior high school principalship, by the National Association of Secondary School Principals (NASSP), found five general areas of administrative stress: constraints intrinsic to administration, administrative responsibilities, interpersonal relationships, intrapersonal conflict, and role expectations.

Administrative constraints deal with stressors related to time, meetings, work load, and compliance with federal, state, and organizational policies.

Administrative responsibility relates to tasks characteristic of nearly all administrative positions and includes supervision, evaluation, negotiations, and gaining public support for school

programs.

Interpersonal relations include resolving differences between parents and school and between staff members, and handling student discipline.

Intrapersonal conflict centers around conflicts between performance and one's internal beliefs and expectations.

Role expectations deal with stress caused by a difference in the expectations of self and the various publics with which administrators must deal. These publics include students, parents, colleagues, school committee, supervisors, and members of the community.

According to Koff, Laffey, Olson, & Cichon (1981), school administrators, like their peers in the corporate world, are susceptible to the hazards of executive stress and burnout. Four of the five highest-ranked events by principals participating in the national survey conducted by the writers concerned conflicts with teachers: forced resignations, unsatisfactory performance, preparing for a strike, and refusal to follow policies.

Other top-rated items included:

1. Threats to job security or status (involuntary transfers, criticism in the press, legal action against their school, and disagreements with supervisors).
2. Threats to physical security (assault on staff and verbal abuse).
3. Management problems (last week of school year, forced staff reduction, and reorganization of programs).

Gupta (1981) found three types of stress factors, or stressors, in occupations; they are environmental, organizational, and individual.

Environmental stressors are conditions outside of the work place, such as teacher-family and/or teacher-community relationships. If families and/or communities are not supportive of teachers and are critical of the profession, the result is tremendous stress for educators. Borthwick (1982) and Farber (1982) have shown that declining parent and community support is one of the leading factors of teacher stress.

Organizational stressors are conditions in the work place, such as characteristics of the job and/or the professional relationships of teachers with other colleagues, supervisors, and students. Several producers of tension result from the conditions of one's job. Gupta (1981) identified four organizational stressors as:

Role Ambiguity: When one is unclear about what to do and why it should be done, or does not know the criteria by which one's work is to be judged.

Role Overload: When one has too much work to accomplish in the time available.

Role Insufficiency: When one has inadequate materials, information and/or equipment to do the job properly.

Responsibility For Others: When one has the broad responsibility for shaping the social, emotional, and intellectual growth of students.

This researcher finds, in conducting the review of literature, that relative to stress, the role which the individual plays in the organization in which he or she works is most prevalent.

A number of researchers have attempted to isolate categories of organizationally based stressors (see Cherniss, 1980; Cooper & Marshall, 1978; French & Caplan, 1972; Frew, 1977; Ivancevich & Matteson, 1980). From these, four categories have been extrapolated that are examined in the study.

1. Relationships at Work: The extent and tenor of adult interactions on the job. Included are interactions with superiors, peers, and subordinates. There is a direct relation between the extent of trust demonstrated in the relationships among organizational members and their feelings of job satisfaction and well-being.

2. Factors Intrinsic to the Job: Every occupation has built-in working conditions. These include the extent, type, and pace of work; the physical effort required; the total number of hours involved, and the specific hours of the day or night spent at the work place; the extent to which the activities are regularized and repetitive; and physical environment factors such as space, lighting, noise levels, and availability of private space.

3. Role in the Organization: Several role-related factors can be stress-inducing: role ambiguity (i.e., confusion about the scope or responsibilities of the job); role conflict (i.e., being pulled in different directions by incompatible demands); roles that are high in

responsibility for people; and the perception that there is minimal authority in one's organizational role.

4. Organizational Structure and Climate: Stress-related issues in this category include the extent to which members participate in decision making; whether members have a sense of belonging; whether supervisors are supportive and effective; whether communication is clear and sufficient; and the extent to which limitations are placed on the behavior of organizational members.

School administrators, whether they are superintendents of large districts or principals of small schools, all face stress at one time or another in their jobs. Their ability or failure to cope with stress may reverberate throughout an entire school system, affecting teachers as well as students. Yet, administrators often consider stress as chronic, a fact of life, an occupational hazard to be endured with no chance of identifying or changing its causes and effects. The result is personal suffering and job ineffectiveness.

In a study by Green (1986), elementary school principals perceived stress in their role as only minor. He goes on to say that the subjects' failure to identify indicators of stress may be the result of learned strategies of coping. These strategies would include:

1. Knowledge of stressors and the stress reaction.
2. Awareness of common signs or symptoms of stress.
3. Techniques for undertaking your own ongoing stress analysis.

4. Relaxation methods to help you cope better with stressful experiences.

According to Rogers and Cochrane (1984), it is impossible to discuss the full meaning of occupational stress in isolation from experiences outside of the workplace. Just as a worker often carries work problems home, distressing events in his or her home life can frequently "spill over" into the job, influencing the extent to which the work environment is experienced as stressful.

Symptoms of Stress in Educational Administration

The primary symptoms of stress here are feelings of tension, anxiety, frustration, and isolation; feelings of depression in the form of restlessness, boredom, or burnout; and doubts about one's adequacy and ability to perform. Other symptoms are a noticeably shorter temper in dealing with difficult problems, overeating and overweight, and insomnia.

Individual differences in perceptions and reactions to stress result in a wide variety and intensity of physical symptoms. Minor symptoms such as constant fatigue, frequent headaches, unexplained weight loss, gastrointestinal problems, and skin rashes are common in individuals reacting to stress. More serious complications such as high blood pressure, cardiovascular difficulties, ulcers, shortness of breath, colitis, and gastrointestinal

disturbances may require immediate and, often, prolonged medical attention (Cardinell & Maples, 1980).

In addition to physical symptoms, there are a variety of behavioral symptoms that can be stress-induced: abrupt mood swings, lowered tolerance for frustration, increased irritability, loss of caring for people, feelings of helplessness and/or lack of control, paranoia, suspiciousness, and greater professional risk-taking. These are common evidence of stress-related behavioral changes (Cardinell, 1980).

Another area that seems to be getting a lot of attention is that of burnout. Cherniss (1980) provided a workable definition of burnout when he described it as a process beginning with high and sustained levels of job stress that produce subsequent feelings of tension, irritability, and fatigue ending with a defensive reaction of detachment, apathy, cynicism, or rigidity.

Burnout appears to be a process consisting of three stages. The first stage invokes an imbalance between resources and demand (stress). The second stage is the immediate, short-term emotional response to this imbalance characterized by feelings of anxiety, tension, fatigue, and exhaustion (strain). The third stage consists of a number of changes in attitude and behavior, such as a tendency to treat clients in a detached and mechanical fashion or a cynical preoccupation with gratification of one's own needs (defensive coping). Thus, burnout refers to a transactional process, a process

consisting of job stress, worker strain, and psychological accommodation. Specifically, burnout can be defined as a process in which a previously committed professional disengages from his or her work in response to stress and strain experienced on the job.

Solutions

Organizational, individual, and environmental interventions have been suggested by several authors. Cherniss (1980) suggests that whatever is implemented in a setting should be based on empirical analysis and the most plausible theory. He prescribes the following interventions:

1. Staff development (e.g., in-service programs, orientations).
2. Changing the job (e.g., reduction of role overload, ambiguity).
3. Client responsibility (e.g., selection of mix of clients).
4. Time-out and relief.
5. Opportunities for creating new programs.
6. Career ladders.
7. Management development.
8. Creation of formal mechanisms for organizational conflict resolution, problem-solving, and staff participation in decision-making.
9. Development of a sense of purpose among workers.

According to Pines et al. (1981), coping strategies include organizational, interpersonal, and social support systems. They recommend variety, availability of time-out, limited hours of stressful work, organizational flexibility, anticipatory training, positive work conditions, feedback rewards, and meaningful work as significant deterrents against tedium and burnout.

Pines et al. recommend four strategies for dealing with burnout. The first strategy is to become aware of the problem. The second includes taking responsibility for doing something about it. The third involves some degree of cognitive clarity, and the last is to develop procedures for coping.

Sparks (1983) reports that Pearlin and Schooler

...suggest three categories of stress management activities: (1) responses that control the physiological or emotional consequences of distress (physical health factors, muscle relaxation, etc.), (2) responses that control the meaning of the distressful experience (modifying tension-producing thoughts, developing a balanced perspective, etc.), and (3) responses that change the situation out of which the distress arises (professional support groups, organizational change strategies, staff development programs, alternative careers, etc.). (p. 37)

Sparks and Hammond (1981) have further stated that effective management of stress involves balancing all aspects of the individual's life, such as physical and emotional health, relationships, work, and personal satisfactions and dis-satisfactions. Additionally, the individual can control stress by exercise, diet, sleep,

interpersonal relationships, managing conflict and time, and relaxations.

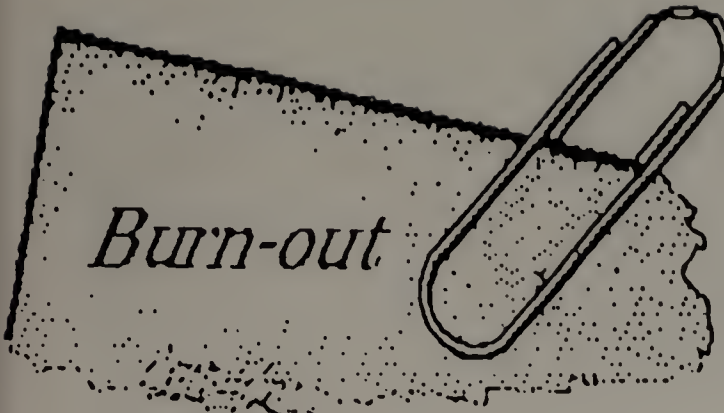
According to Swent (1983), stress affects each individual differently; therefore, coping strategies should be adapted to the individual. In the Oregon School Administrators Study, the majority of the administrators used physical activities as their source of stress reduction. In a study by Swent and Gmelch (1977), a recommendation for additional emphasis in administrative preparation and professional development programs was made.

The problem of stress management is a very personal matter. Individuals have different strategies for protection from stress and have different levels of tolerance. According to Flint (1982), some general suggestions to manage stress are for a person to take care of himself physically, compartmentalize sources of stress, find support groups, participate in stress management workshops, and seek professional help if the symptoms become severe and encompassing.

Flint (1982) summarizes that after burnout has occurred, there are three options open to one. They are: to stay on the job in misery; to leave the job in defeat and failure; or, to find renewal, to change, to grow. Whatever one does, a change should be made.

Alschuler (1980) identified several strategies to promote healthy development and vibrant living and to reduce burnout. These strategies include preventing stress by being alert to early signs, reducing stressors, changing perception of the stressors, managing

your physical state, improving coping abilities, and counteracting stress. (See Figures 3A -3B).



Burn-out

When environmental demands are perceived as more than can be accomplished.

Stress Sequence

Alarm

Physical Symptoms and Consequences

Coping and Resistance

Frenzy

1. Vocal Explosiveness
2. Constant Movement
3. Impatience
4. Polyphasic Thought
5. Self Centered
6. Guilty Relaxation
7. Insensitivity to Beauty
8. Getting More Than Being
9. Urgency
10. Challenges other Type "A"s
11. Nervous Tics
12. Afraid to Slow Down
13. Evaluation by the Numbers

Exhaustion or "Burnout"

1. Increased Distance from students, clients and colleagues.
2. Emotional and physical fatigue
3. Attitude shift to cynical
4. Total exhaustion, terminal burnout, battle fatigue

Signs of stress

150 - 199 mild
200 - 299 moderate
300+ major

Fig. 3A Stress Sequence

Strategies for Overcoming Stress

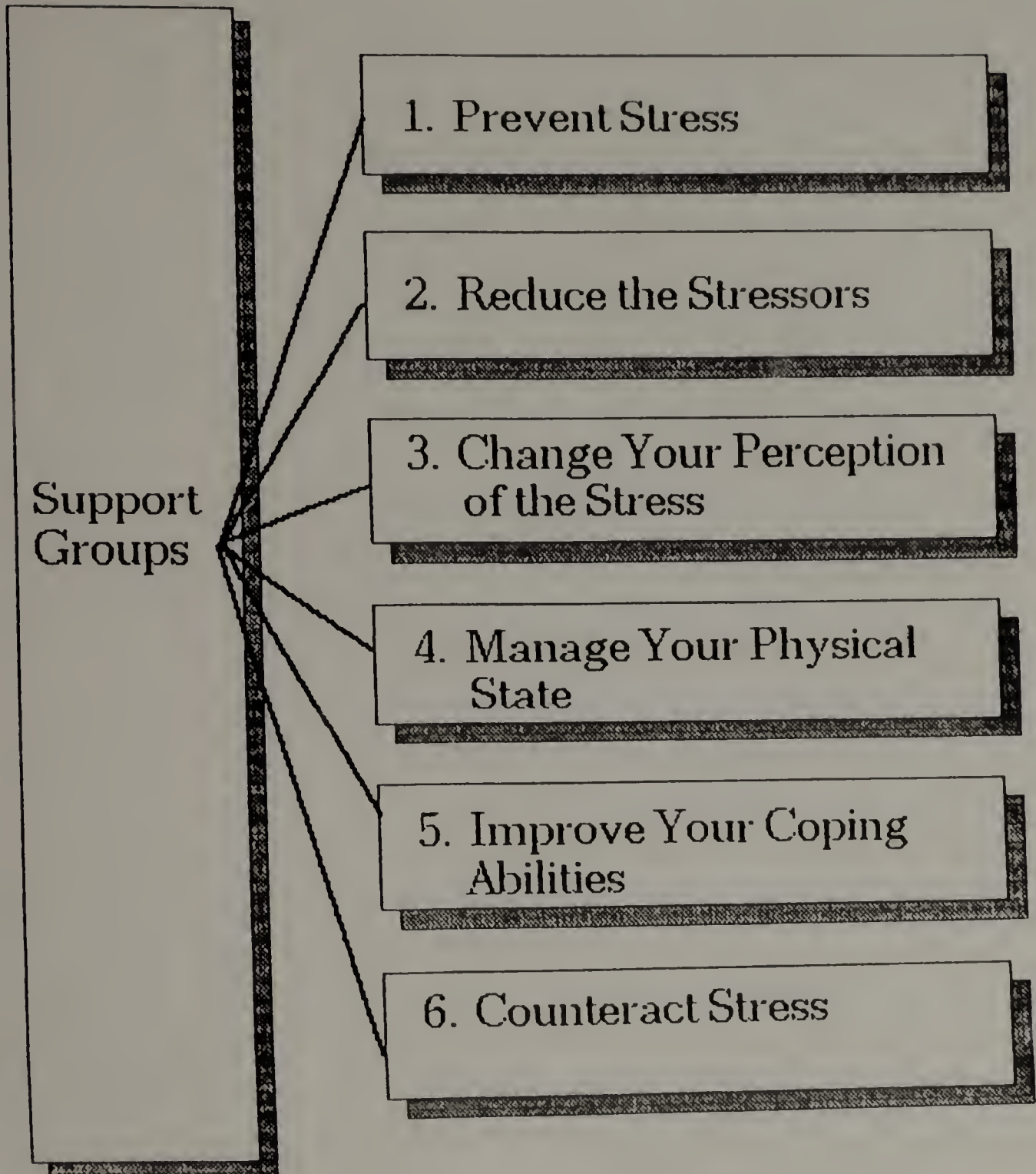


Fig. 3B Strategies for Overcoming Stress

Prevention

According to Alschuler (1980), primary prevention can be accomplished by groups in five steps: (a) listing stressors, (b) categorizing the stressors, (c) prioritizing the stressors, (d) planning a campaign to reduce the stressors, and (e) implementing the plan. This method for conquering common stressors is based on three explicit values: working collaboratively, acting democratically, and changing the environmental stressors. This method is used rather than attempting to reform individuals.

Stress Inoculation: A Preventative Approach

According to Meichenbaum (1975), stress-inoculation training involves three phases. The first phase, educational in nature, is designed to provide the individual with a conceptual framework for understanding the nature of stressful reactions. From such a conceptual framework, a number of behavioral and cognitive coping skills are offered for the individual to rehearse during the second phase of training. During the third phase, the client is given an opportunity to practice coping skills during exposure to a variety of graded stressors. Fuller descriptions of the operational procedures of stress-inoculation have been offered elsewhere (see Meichenbaum, 1975; Meichenbaum & Turk, 1976; Meichenbaum et al., 1975). In

these papers, there is a description of the use of stress-inoculation training.

Reduce Stressors

Another strategy one may employ in the management of stress is to reduce the stressor. Developing positive, growth-promoting attitudes can lessen stress. Clearer and more positive communication skills can lessen tensions generated by personal interactions. Other areas one may focus upon are (a) create a positive atmosphere, (b) pace yourself, (c) set priorities, and (d) be aware of time demands.

Change Your Perception

According to Lazarus (1979), psychological stress resides neither in the situation nor in the person; it depends on a transaction between the two. It arises from how the person appraises an event and adapts to it. Stress is what occurs when the demands of the environment, in the person's eyes, clearly exceed the resources of the person to handle them. Foremost among these resources is how the person construes the situation: does he or she judge it as threatening or as a challenge? Lazarus states that self-deception, through denial, can be a valuable first step in coping. In severe crisis, denial buys preparation time; it lets the person face the grim facts at a gradual, manageable pace.

Managing Your Physical State

To cope effectively with stress - and maybe even eliminate it from parts of our lives - it is first necessary to build resistance. You will recall from the general adaptation syndrome (GAS) that the initial alarm reaction soon subsides and is replaced by a stage of resistance. During that second resistance stage, the body more or less returns to normal and fights vigorously against the stressor. Eventually, should the stressor persist, the resistance stage may slowly collapse into the final stage of the GAS: exhaustion.

Normally, this final collapse of resistance is brought about because the body's reserves of energy have been drawn down too low. With no reserve of energy available, the body cannot resist effectively, and exhaustion sets in, often accompanied by disease when the body can no longer resist. This scenario suggests an important principle for stress management and control, i.e., the stronger the body's reserves, the better able the body will be to resist the effects of stress without falling into the stage of exhaustion.

How does one strengthen the body's reserves? Maximum bodily strength and efficiency depend upon three factors: sleep, exercise, and nutrition. Only a body that is well-rested, properly exercised, and correctly fed will be able to maintain its energy reserves in the face of serious stress. According to Shaffer (1982), a healthy, well-maintained body will experience less stress because of its strong resistance and its ability to avoid exhaustion and the cycle

of low-energy, fatigue, and depression that exhaustion normally brings.

The relaxation response is another strategy which can act as a built-in method of counteracting stress, especially when the fight-or-flight response is evoked.

Eastern and western religious, cultic, and lay practices led to the relaxation response. From those age-old techniques, four basic components are necessary to bring forth that response: (a) a quiet environment, (b) a mental device, (c) a passive attitude, and (d) a comfortable position.

It is important to remember that there is not a single method that is unique in eliciting the relaxation response. Some people use transcendental meditation while others use prayer from their religious tradition.

Progressive Relaxation

The procedures used in terms of reducing tension are collectively called "progressive relaxation training." They were first developed in the 1930s by a physiologist named Jacobson, and in recent years his original model has been modified to make it simpler and more effective. Basically, progressive relaxation training consists of learning to ...tense and then [to] relax various groups of muscles all through the body, while at the same time paying very close attention to the feelings associated with both tension and

relaxation. That is, in addition to teaching you how to relax, you are also encouraged to recognize and pinpoint tension and relaxation as they appear in everyday situations.

Yogic Therapy

"Yoga", meaning union or one-ness with life, is part of an ancient Indian culture. It is a personal self-help system of health care and spiritual development. It was not primarily developed to cure the sick, but to awaken spiritual awareness and develop personality integration in healthy people. To that extent, it is preventive rather than curative. Yogic methods, including relaxation postures, have been found to be beneficial in preventing or alleviating several health problems.

Meditation

Many stress-related illnesses have proven responsive to meditation. Research has shown meditation to be correlated with improvement in the breathing patterns of patients with bronchial asthma (Hansberger & Wilson, 1973), in decreased blood pressure in both pharmacologically treated and untreated hypertensive patients (Bensen, 1977; Patel, 1973, 1975), in reduced serum cholesterol levels in hypercholesterolemic patients (Cooper & Aygen, 1979), in reduced sleep-onset insomnia (Miskiman, 1978; Woolfolk, Carrkaffashan, McNulty, & Lehrer, 1976), and in the reduction of symptoms of

psychiatric illness (Glueck & Storoechel, 1975), among other effects. Meditation may thus be a useful intervention in a wide variety of stress-related illness.

Hypnosis

Hypnosis has been used to bring about deep relaxation. The deep relaxation that is aimed for, "tropotrophic response" (Hess, 1954), or the "relaxation response" (Benson, Beary, & Carol, 1974), has been used by hypnotherapists for over a century to reduce stress and tension, especially in individuals with stress-related or psychosomatic ailments such as migraine headache, asthma, insomnia, or hypertension.

Biofeedback

The main idea of biofeedback is to use instruments to tell you what is happening inside your own body immediately. For example, is my pulse rate going up or down? With biofeedback instruments, you can tell at once. What's happening with your muscle tension? In order to find out, sensors are placed over the muscle you are interested in. The sensors pick up tiny electric signals generated by the muscles. Through a set of headphones, you will learn that when you tense the muscle, you hear a high-frequency sound. As soon as you relax, the tone frequency goes down. In other words, the tone tells you instantly if you are going in the right direction. Is the

muscle tensing or relaxing? This method or strategy is used by a lot of people and helps them to relax very quickly.

Autogenic Training

According to Schulz & Luthe (1969), autogenic training is a system of psychosomatic self-regulation developed in Germany about the turn of the century which permits the gradual acquisition of autonomic control. This control is not active; rather, it develops out of a "passive concentration" through which the trainee intends to move toward certain effects (e.g., relaxation) and yet remains detached as to his or her actual progress. The point of focus of his or her concentration is on visual, auditory, and somatic imagery that is employed to induce specific physiological changes such as hand warmth or muscle relaxation.

Pharmacological

Because prescribing is the physician's prerogative, the medical model of illness has been applied to stress responses. Various syndromes have been described and remedies suggested. Examples include "effort syndrome", "hyperventilation syndrome", and "irritable colon syndrome." All these and similar syndromes affecting almost every system of the body are probably part of a general stress response, and remedies specific to just one bodily system are inappropriate. The growing realization of this by the

medical profession is reflected by the steady increase in the prescription of general stress-reducing remedies, namely, the anti-anxiety drugs. These drugs are being increasingly prescribed for general stress responses with the rationale that the symptoms complained of by the patient are part of a general stress response characterized by emotional over-arousal. Damping down the emotional over-responsiveness, runs the reasoning, will result in a lessened stress response in the bodily systems underlying the symptoms.

Coping

The concept of coping has been important in psychology for well over 40 years. It is currently the focus of an array of psychotherapies and educational programs which have as their goal the development of coping skills. The subject of coping has also received widespread lay attention, as can be seen by the best-seller list or magazine articles. Indeed, coping is as much a colloquial term as a scientific one. Despite the rich history and current popularity associated with coping, however, there is little coherence in theory, research, and understanding. Even the most cursory inspection of reading selected from scholarly and lay publications reveals confusion as to what is meant by coping and how it functions in the process of adaptation.

White (1974) makes several important theoretical distinctions among related concepts: adaptation, mastery, coping, and defense. White subsumes coping under the larger, more central concept of adaptation, and defines coping as adaptation under relatively difficult conditions. White argues that strategies of adaptation must simultaneously manage at least three functions or tasks if they are successfully to aid the individual's transactions with the environment: securing adequate information, maintaining satisfactory internal conditions, and keeping some degree of autonomy or freedom of movement.

According to Lazarus (1979), there are two main varieties of coping. One is problem-solving, the other emotion-focused. Problem-solving coping refers to efforts to change the troublesome situation for the better. Emotion-focused modes include things you do or say to yourself to feel better which do not alter the actual relationship between the person and the environment.

Traditional Approaches

The concept of coping is found in two very different theoretical research literatures. One is derived from the tradition of animal experimentation, the other from psychoanalytic ego psychology.

Within the animal model, coping is frequently defined as acts that control aversive environmental conditions, thereby lowering psychophysiological disturbance. N. E. Miller (1980) says, for

example, that coping consists of the learned behavioral responses that are successful in lowering arousal by neutralizing a dangerous or noxious condition.

Some of the most interesting research on the psychophysiology of coping and cardiovascular responses has been done by Obrist (1981) and his colleagues, in particular their work on the concept of active, as contrasted to passive, coping. This research suggests strongly that active coping is an important mediator of sympathetically controlled cardiovascular changes.

In the psychoanalytic ego psychology model, coping is defined as realistic and flexible thoughts and acts that solve problems and thereby reduce stress. The main difference between the treatment of coping in this model compared to the animal model is the focus on ways of perceiving and thinking about the person's relationship with the environment. Although behavior is not ignored, it is treated as less important than cognition.

Vaillant (1977) groups defenses in four levels progressing from psychotic mechanisms (e.g., denial of external reality, distortion, and delusional projection) through immature mechanisms (e.g., fantasy, projection, hypochondriasis, passive-aggressive behavior), neurotic mechanisms (e.g., intellectualization, repression, and reaction-formation), to the highest level, mature mechanisms (e.g., sublimation, altruism, suppression, anticipation, and humor).

Type A as a Coping Style

The behaviors displayed in Type A research include what are considered coping (for example, redoubling efforts to achieve more control), and strategies that lead to accepting the lack of control without distress. However, except for Vickers et al. (1981), investigators have generally not tried to measure coping thoughts and acts explicitly, since their emphasis has been on task performance.

The cognitive-behavioral formulations, such as those of Ellis (1962, 1975), Beck (1976), Goldfried (1980), and Meichenbaum (1977; Meichenbaum & Jaremko, 1983), seem to be highly compatible with our cognitive theory of stress and coping.

Treatment can bring about change in three somewhat oversimplified ways: feelings can shape thought and action, actions can shape thought and feeling, and thoughts can shape feeling and action. Feelings, thoughts, and actions are interdependent: if thought is changed, feelings and actions will probably change too. Similarly, if actions change, thoughts and feelings will too. Therefore, it is an empirical question which strategy works best, and in all likelihood multiple strategies increase the odds of producing the necessary changes for better functioning. One way or another, however, if there is to be therapeutic change, there must be changes in cognitive appraisal and coping.

Definition of Coping

According to Lazarus & Folkman (1984), coping is defined as constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person. This definition addresses limitations of traditional approaches as follows:

First. It is process-oriented rather than trait-oriented, as reflected in the words constantly changing and specific demands and conflicts.

Second. This definition implies a distinction between coping and automatized adaptive behavior by limiting coping demands that are appraised as taxing or exceeding a person's resources. In effect, this limits coping to conditions of psychological stress which requires mobilization and excludes automatized behaviors and thoughts that do not require effort.

Third. The problem of confounding coping with outcome is addressed by defining coping as efforts to manage, which permits coping to include anything that a person does or thinks, regardless of how well or badly it works.

Fourth. By using the word manage, equating coping with mastery is avoided. Managing can include minimizing, avoiding, tolerating, and accepting the stressful conditions as well as attempts to master the environment.

Improve Your Coping Abilities

A person can improve his or her coping abilities if they are aware of their resources which include health and energy; existential beliefs, e.g., about God or general beliefs about control; commitments, which have a motivational property that can help sustain coping; problem- solving skills; social skills; social support; and material resources.

Coping is also determined by constraints that mitigate the use of resources. Personal constraints include internalized cultural values and beliefs that proscribe certain ways of behaving and psychological deficits. Environmental constraints include demands that compete for the same resources and agencies or institutions that thwart coping efforts. High levels of threat can also prevent a person from using coping resources effectively.

Counteract Stress

According to Glasser (1976), one way to counteract stress is through positive addiction. A positive addiction can be anything at

all a person chooses to do as long as it fulfils the following six criteria:

1. It is something noncompetitive that you choose to do and you can devote an hour (approximately) a day to it.

2. It is possible for you to do it easily and it does not take a great deal of mental effort to do it well.

3. You can do it alone or rarely with others but it does not depend upon others to do it.

4. You believe that it has some value (physical, mental, or spiritual) for you.

5. You believe that if you persist at it you will improve, but this is completely subjective; you need to be the only one who measures that improvement.

6. The activity must have the quality that you can do it without criticizing yourself.

There are two major categories of positive addiction: the physical, such as runners, and the mental, dominated by the meditators. Other practices may include playing musical instruments, listening to music, weightlifting, reading, needlepoint, hobbies, and the list goes on.

Solutions to Occupational Stress

There are no simple solutions to the problems created by undue stress. What we read, experience, and try all provide helpful insights. The real ability to cope is a very personal matter. What works best for many may not be the answer for all.

Because reactions to stress are so individualized, it is difficult and perhaps dangerous to over-generalize about ways to avoid or manage stressful conditions. Research indicates that a person's perceptions of a situation provide the basis for how one responds to a predicament.

One of the most important elements to take into account is that stress management is an individual matter. Above all, a positive attitude toward life in general and work in particular is an essential prerequisite for any kind of stress management program.

(Humphrey & Humphrey, 1980)

Although quite true, stress management being an individual matter, it is important to understand that support groups are needed. Stress reduction can and often does involve support from others. If we are going to change the stressors, whether they be at work or at home, it must be done collaboratively.

Cooper and Marshall (1978) have argued that understanding the sources of organizational pressure is only the first step in stress reduction. Next, we must begin to explore when and how to

intervene. There are a number of changes that can be introduced in organizational life to begin to manage stress at work, for example:

1. To recreate the social, psychological, and organizational environment in the work place to encourage greater autonomy and participation by people in their jobs.

2. To begin to build the bridges between the work place and the home thereby providing opportunities for the employee's spouse to understand better the other's job, to express their views about the consequences of the other's work on family life, and to be involved in the decision-making process of work that affects all members of the family unit.

3. To utilize the well-developed catalogue of social and interactive skill training programs to help clarify role and interpersonal relationship difficulties within organizations.

4. Fundamentally, to create an organizational climate to encourage rather than discourage communication, openness, and trust so that individuals are able to express their inability to cope, their work-related fears, and are able to ask for help, if needed.

There are many other methods and approaches of coping and managing stress, depending on the sources activated and the interface between these sources and the individual make-up of the person concerned. Nevertheless, one important point that must always be kept in mind in coping with and managing organizational

stress is, as Wright (1975) so aptly summarizes, that "the responsibility for maintaining health should be a reflection of the basic relationship between the individual and the organization for which he works; it is in the best interests of both parties that reasonable steps are taken to live and work sensibly and not too demandingly" (p.219).

Assessing Your Own Organizational Work Pressures

Before an individual can begin to deal with work-related sources of stress, one must be able to identify them. Some factors which are intrinsic to the nature of the job may cause stress. role clarity, ambiguity, and conflict; relationships at work; career development; organizational structure and climate; and home-work interface conflicts to name a few.

After an individual has diagnosed the main stressors in the work environment, it is necessary to devise personal action plans to alleviate or cope with them. These action plans must contain four essential ingredients. They must be: realistic, legitimate (within the context of the particular organization), flexible (in terms of objectives and timetables), and progressive (a gradual achievement of goals). Again, it is important for the individual to have support groups.

These situations are best battled collaboratively. Let's now examine each of the potential work stressors from the point of view of what individuals themselves can do to manage their own pressures.

Factors Intrinsic to the Job

Within this category of stressors there is a wide variety of job characteristics which can be a potential source of pressure. Some of these are amenable to change by individual action (through negotiation or careful planning), while others are outside his/her scope (e.g., work redesign).

Workload

Work overload can be a very serious pressure in any job. An individual is in an overload situation when he/she is assigned a large number of tasks to accomplish in an unreasonable time period (given a desired quality end product). This can cause excessive frustration, anxiety and the deterioration of job satisfaction. In many cases, although management may be directly responsible for the timetabling, the individual has some scope for negotiation. Many people at work, however, are frightened to admit they can't do a particular job within a given time period set by their boss or higher level management. In this case, a self-fulfilling feedback loop is set

in motion wherein management continues to think the job can be done within the given time frame and organizes future work schedules accordingly. Unless the individual can confront his boss or some "significant other" with the difficulties he/she faces in meeting the deadlines, the problem will grow and everyone will lose. Individual initiative is needed in cases of work overload; it is not good enough to "grin and bear it," and then blame others for mismanagement, being inconsiderate or insensitive, and so on.

There are cases of self-imposed work overload as well. Some people create overload at work for a variety of different (and usually, unconscious) reasons: (a) to enhance their own status; e.g., having a full diary means "I'm important", (b) to avoid doing certain aspects of their work they do not do well or do not like doing, or (c) to signal to others their indispensability, etc. It is important in this context that individuals be aware of the part they play in creating work overload, particularly if it is leading to personal or other work-related stress.

Work underload is also a potential stressor. It creates stress not only because these periods are boring and unproductive, but because they may make the individual feel less important or may signal to him/her (either accurately or paranoically) that others at work feel he is incapable of doing the job (thereby the low level of assigned work).

Physical and Task Aspects of the Job

More and more industrial organizations are accepting work and job design innovations as part and parcel of the move to humanization of the workplace in American and European society. Individuals in organizations that have "works committees" or their equivalent at higher levels should take advantage of them. If they don't exist, one has the responsibility to see that consultation committees are established for purposes of making job and physical environment at work more "satisfying" and challenging.

Increasing Role Clarity and Minimizing Role Ambiguity and Conflict

Stress is created at work by the lack of clarity of their job role or the conflict it creates with other contiguous work roles (e.g., union or professional association representative). Role negotiation training is common with work groups who have had obvious difficulties, but very little has been done with particular individuals. In order to be successful in negotiating a change in one's work role, individuals must begin to take their own initiative and responsibility in this regard.

Improving Personal Relationships at Work

There are two potential problem areas in this respect. First, that a particular individual has difficulty in relating to others at work which stems more from his/her lack of social skills. Second, that the individual possesses adequate social skills but has difficulty with one or two specific colleagues, that is, a relationship-specific, as opposed to personality, problem. In the case of the first difficulty, a lack of interactive or social skills, individuals at work have a number of options open to them to improve and change their behavior. There is a wide variety of training courses available in the community (and in many cases, within organizations) to deal with human relations/social skills/interactive skills.

Career Planning

In order to avoid the stressors associated with career development, it is important for the affected individual to begin to plan his long-term career prospects.

Creating a More Open and Trusting Work Environment

Another major source of stress at work is the tendency of some organizations to be closed and untrusting. This can lead to poor communications, lack of consultation, a climate of distrust among employees, maladaptive internal competition, and ultimately, to poorer performance and job dissatisfaction. This creates an unnecessary destructive cyclical process which might be improved by greater organizational openness and honesty. The consequences of mistrust can, as Mellinger (1956) found in a large public research organization, lead to poor communications and ultimately to bad decision-making.

To be effective, any stress management program must stimulate the person to appraise situations and/or cope with their demands in new ways. The task of dealing effectively with stress-related human misery and malfunction remains one of the main incentives for continuing research and thought about stress, appraisal, and coping.

Status of Solutions

Are we learning to cope better with stress today? Is the literature and workshops that are available helping us to become better stress copers?

According to Lazarus (1979) the notion of the competent copier implies that there is some set of resources that a person has that will get him through everything, i.e. job hassles, death of a spouse, a promotion, illness. But even competent people have their troubles. They get into difficulties they can't quite handle. The concept of competence does not imply that a person who is skilled, able, and flexible will always be able to master every situation or handle every stress effectively. Skills that work superbly in one situation may render a person inept in others.

Within the marketplace of applied behavioral science, stress management technology qualifies as a growth industry. Almost everywhere we see evidence of this. Sales of biofeedback equipment are up; courses on how to cope with stress are being offered widely within industry; there is great interest in Eastern traditions such as yoga and meditation; the media abound with programs and articles on how to avoid the hazards of stress. Unfortunately, many of these developments have been accompanied by widely extravagant claims

and by a notable lack of supporting evidence. In the process, "stress" has become a catch-all category, encompassing everything from quantifiable events in the psychophysiology laboratory to the entire scope of human unhappiness.

Many scientists have systematically evaluated the effects of such techniques as meditation, biofeedback, progressive relaxation, autogenic training, and cognitive-behavior modification. Their work has enabled us to begin to estimate the therapeutic potential of many techniques that heretofore have been broadly applied without a firm empirical foundation. For the clinician seeking methods capable of improving clients' abilities to cope with stress, the empirical literature offers great encouragement. A number of stress reduction techniques have been shown to be effective in the treatment of a variety of stress-related symptoms and disorders.

The clinician who turns to the research literature in order to learn therapeutic strategies, however, is inevitably disappointed. The descriptions of the stress management methods contained therein are cursory and terse. Only those already intimately familiar with the procedures under investigation can develop a clear and accurate picture of what therapeutic interventions were or were not employed. Treatments typically are standardized and uniform for all subjects. Frequently the treatments undergo substantial modifications so that a standardized version can be achieved. Stress reduction techniques are also altered to make them shorter, easier to

teach, easier to learn, and consistent with control or comparison conditions on such dimensions as length of training or amount of therapist contact.

According to Lazarus and Folkman (1984), it is premature to come to any conclusion about generalized, formal programs of stress management and their less generalized, quasi-group therapy versions. What is presently most disconcerting is the tendency of their proponents to overstate the help they can give, and the lack of concern with evaluating their consequences. The current atmosphere of interest and need, and the enthusiasm with which new programs are developed, do not seem conducive to proper evaluation. The fact that there is widespread concensus about need obscures whether such programs add much to the inspirational approaches and philosophies of living that have characterized past eras. Psychologists have long known that personal validation of their results is notoriously unreliable because of the ubiquitous placebo effect; if people believe something will help, they commonly find it helpful, at least for a time. Evaluation of one-on-one therapies is difficult because of the multiple factors that must be considered, such as the type of presenting problem, the type of person, the type of therapist, and the therapist's approach. Anyone who claims to have found a panacea for human distress, whether cast in the language of stress management or as a philosophy of life, fails to recognize the long history of attempts to do this and fails to take into account

individual differences and the actual life circumstances of people in trouble.

It would be un-American to accept a new cause for disease without seeking to cure or control it. Thus, it is not surprising that the ranks of self-help manuals have recently been joined by books devoted to teaching us how to manage stress. Among the array of do-it-yourself guides to increasing sexual pleasure, building the body beautiful, and unlocking hidden mental and emotional capacities is a new crop of manuals devoted to taming the killer stress. The stress management guides under review here have all been published within the past year or so, and although the sales pitch varies from threats of dropping dead to promises of maximum well-being, all dedicated to the premise that the individual can avert or diminish the potential harm of stress by using new, improved coping strategies.

Unfortunately, these stress management guides share one other important characteristic: judged by the criteria established by Contemporary Psychology to evaluate self-help books..., all are woefully inadequate. Explanations of why and how stress is harmful are simplistic and often inaccurate. Techniques for self-diagnosis are vague, inappropriate, and in some cases may even be harmful to individuals who should probably seek other types of help. Claims for the efficacy of the proposed "cures" are exaggerated and supported mainly by anecdotes and irrelevant statistics. Finally,

even though all these manuals are clearly labeled as do-it-yourself treatment programs, not one has been tested in this format.

Lazarus and Folkman (1984) state that stress management programs represent a current fad that will, in all likelihood, be replaced by new fads and ways of thinking. There can never be a simple procedure for generating the cognitive, behavioral, and emotional processes that can propel the person toward better morale, social and work functioning, and physical health.

Freudenberger (1980) views burnout as mainly psychological in origin. Therefore, his recommended psychological coping strategies focus on self-awareness, self-acceptance, and re-assessment of personal goals. This psychological approach fails to consider the many dimensions of managerial and organizational structure and behavior. His proposed interventions, therefore, do not consider problems of leadership, motivation, power, autonomy, work situations, and/or pressures from internal and external environments such as changing organizational design, job enrichment, reward systems, and public decisions impacting organizational life, such as a change in manpower policy. According to Lewin (1951), Atkinson (1957), Adams (1963), and Vroom (1964), these prescriptions are not derived from research on the effects of the changes recommended. Further, these

prescriptions are in opposition to conditions identified as being associated with work stress as well as with findings revealed from organizational research.

According to Thornton (1980), many people are leaving education because of stress and burnout. Solutions to the stress factor are very complex. Thornton lists five factors that could help the individual. First, diet should be seriously evaluated. Second, the individual should avoid stress-producing factors and should look for positive support. Third, one should include some physical factor to reduce the response to stress, and fourth, one should assume self-responsibility. Lastly, since stress is everywhere, one should incorporate stress management in a daily routine.

Thornton (1980) suggests four techniques for dealing with stress. Essentially, the suggestions include recognizing stress before it becomes distress, reacting to stress to keep it from getting out of hand, avoiding a pace of life that produces excessive stress, and coping in a manner that will reduce rather than aggravate the stress. The bottom line is that an individual must decide what is wanted in life and how much wear and tear is worth accomplishing those goals.

In conclusion, it is important to remember that there is no ready-made success formula which would suit everybody. We are all different and so are our problems. Selye (1974) Since people's thresholds and responses are different, the best one can do is to

explain the mechanism of stress, unveil its causes, and suggest strategies or tactics which may be most helpful in reducing those causes.

Summary

This chapter has presented a review of the literature related to stress, stress in school administration, solutions available in dealing with stress and the current status of those solutions. In general, the review of the literature indicates that education is one of the many human service fields in which high stress and burnout occurs. Of those who work in education, the educational administrator may be identified as being particularly susceptible to burnout (Butler & Gorrel, 1978; Gmelch, 1978).

It is generally agreed that educational leaders in the 1980s are faced with more pressure, more aggression, more change, and more conflict than in any other decade in the twentieth century. More is expected of the school administrator today.

The numbers of daily interactions with people and the pace of his life has increased measurably (Hoffman, 1979).

Based on current writings and research on the subject of stress leading to burnout, there seems to be sufficient evidence to make the following conclusions:

1. Stress exists in the lives of all people, but to a greater degree in those working in people-related professions.

2. The same positions may create different amounts of stress in different people because of each individual's personality interacting with the environment.

3. An individual's physical health may be negatively affected due to excessive stress or the inability to cope with stress

4. An individual's emotional health may be negatively affected due to excessive stress or the inability to cope with stress.

In view of these conclusions, it is appropriate to identify causes of stress in educational administrators and to make recommendations concerning strategies and tactics which educational administrators could employ to cope creatively with that stress.

CHAPTER III

METHODOLOGY

This chapter provides an overview of the operational plan of how this study was conducted. The components of this chapter include: the design, a description of the sample population, instrumentation, data collection strategies and data treatment and analysis.

Design

The design of this study was descriptive, comparative and correlational in nature. First, it was a descriptive study identifying causes of stress in Public School Administrators. Second, it was comparative in that factors of stress were compared to determine which factors were considered most stressful by the Public School Administrators in the study. Third, the study was correlational in its attempt to determine the degree of association between stress and coping ability.

Statement of Hypotheses

HYPOTHESIS 1

There is a significant negative relation between stress and constructive thinking.

Dependent Variable: Kinds of stress experienced on the job as measured by the Oregon School Administrators Stress Survey.

Independent Variable: Constructive Thinking Inventory Scores.

This hypothesis was tested by a Pearson Product Moment correlation between the various areas of stress, on the one hand, with the various scales of constructive thinking on the other.

HYPOTHESIS 2a

There is a significant negative relation between stress and success on the job.

Dependent Variable: Different kinds of success on the job as reported by respondent.

Independent Variable: Kinds of stress experienced on the job as measured by the Oregon School Administrators Stress Survey.

This hypothesis was tested by a Pearson Product Moment correlation between the various areas of stress, on the one hand, and success on the job, as indicated by respondent, on the other.

HYPOTHESIS 2b

There is a significant positive relation between constructive thinking and success on the job.

Dependent Variable: Different kinds of success on the job as reported by respondent.

Independent Variable: Constructive Thinking Inventory Scores.

This hypothesis was tested by a Pearson Product Moment correlation between various scales of constructive thinking, and success on the job, as indicated by respondent.

HYPOTHESIS 2c

There is a significant interaction between stress and constructive thinking as it relates to success on the job.

Dependent Variable: Different kinds of success on the job as reported by respondent.

Independent Variable: Constructive Thinking Inventory Scores.

This hypothesis was tested by a regression analysis of the interaction between stress and constructive thinking and their effect on success on the job as indicated by respondent.

HYPOTHESIS 3a

There is a significant negative relation between stress and emotional health.

Dependent Variable: Emotional Health.

Independent Variable: Kinds of Stress experienced on the job as measured by the Oregon School Administrators Stress Survey.

This hypothesis was tested by a Pearson Product Moment correlation between the various areas of stress, on the one hand, and emotional health on the other.

HYPOTHESIS 3b

There is a significant positive relation between constructive thinking and emotional health.

Dependent Variable: Emotional Health.

Independent Variable: Constructive Thinking Inventory Scores.

This hypothesis was tested by a Pearson Product Moment correlation between the various scales of constructive thinking and emotional health.

HYPOTHESIS 3c

There is a significant interaction between stress and constructive thinking as it relates to emotional health.

Dependent Variable: Emotional Health.

Independent Variable: Constructive Thinking Inventory Scores.

This hypothesis was tested by a regression analysis of the interaction between stress and constructive thinking and their effect on emotional health.

HYPOTHESIS 4a

There is a significant negative relation between stress and physical health.

Dependent Variable: Physical Health.

Independent Variable: Kinds of stress experienced on the job as measured by the Oregon School Administrators Stress Survey.

This hypothesis was tested by a Pearson Product Moment correlation between total load on the various areas of stress, on the one hand, and physical health on the other.

HYPOTHESIS 4b

There is a significant positive relation between constructive thinking and physical health.

Dependent Variable: Physical Health.

Independent Variable: Constructive Thinking Inventory scores.

This hypothesis was tested by a Pearson Product Moment correlation between the various scales of constructive thinking and physical health.

HYPOTHESIS 4c

There is a significant interaction between stress and constructive thinking as it relates to physical health.

Dependent Variable: Physical Health.

Independent Variable: Constructive Thinking Inventory Scores.

This hypothesis was tested by a regression analysis of the interaction between stress and constructive thinking and their effect on physical health.

Sample

The target population for this study included Public School Administrators employed in Southeast Massachusetts (N=150). A multistage random sample was chosen from the Southeast region of the state. The sample consisted of Superintendents, High School Principals, Junior High School Principals, and Elementary School Principals. This population represented a purposeful sampling strategy since the results of this study were used primarily to identify causes of stress in Public School Administrators and to make recommendations concerning coping strategies and tactics specific to that group.

Instrumentation

Following is a summary of the four instruments chosen to answer the questions and guide the hypotheses posed by this study.

1. Oregon School Administrators Stress Survey (OSASS)

(Swent, 1978). The first portion of the questionnaire is a Likert-type scale of 35 items designed to elicit perceptions of administrators

toward those situations that were bothersome in the performance of their job. The questionnaire was developed as follows:

approximately 40 school administrators kept a week-long log which identified the week's job-related stressful events. They were also asked to list other sources of stress that might occur during the school year, but did not occur that particular week. In addition, current school administrative literature was examined to identify other situations which have posed problems to school superintendents, principals, and other administrative staff. These situations were identified as job-related stressors.

The stressors were then categorized into five factors with seven items in each factor to ensure that each factor was similarly weighted. The five factors were: a) constraints intrinsic to administration, b) administrative responsibility, c) interpersonal relations, d) intrapersonal conflict, and e) role expectations. After categorization, the stressors were written in the form of questions capable of summation on a 5-point Likert-type scale. These questions were evaluated by school administrators for their validity and clarity. The questions were placed in a pilot questionnaire and field-tested on a group of 25 practicing administrators. After the initial testing, the questionnaire was revised and tested on a second group of 20 administrators.

The key term in these items--"bothered by"--was chosen by Swent (1978) after a search for an expression representing a mild

degree of annoyance or anxiety but was less value-laden than the word "stress." The term "stress" has a negative connotation to most people. There was fear that that term would fail to discriminate effectively among the majority of respondents.

The term "not applicable" was included in Swent's study as a possible response because the questionnaire included items relating to all areas of administration of the school. Some items were appropriate for certain administrative positions, e.g., many superintendents are not directly involved in handling student discipline. Allowing respondents to choose "not applicable" allowed them the opportunity to respond more accurately to their job responsibilities, thereby eliminating forced choices.

The second portion of the questionnaire included 16 items designed to collect personal and situational information about the respondent. These items were identified as possible variables related to the stress that an administrator might experience. They included level of administrative position, age, sex, school size, district size, length of time in position, length of time in administration, hours worked per week, hours exercised per week and current health status.

The final item was an open-ended question that asked the administrator to identify methods he/she had found useful in handling the tensions and pressures of the job.

Swent employed an analysis of variance to test for significant differences between individual categories and stressors on the questionnaire when compared by administrative position, age, school size, district size, sex, length of time in position, length of time in administration, hours worked per week, hours exercised per week and current health status. Post hoc analysis using the Scheff's test for multiple comparisons was performed on those groups having significant differences.

In addition, multiple correlations were used to determine the relationship of each stressor to the other stressors with each of the five factors as well as those existing outside the factor.

Green (1987) in his study of stress among Public School Administrators has modified the Swent survey as follows:

The five major factors in the Oregon study were used as were the questions within each factor. All subjective statements, however, were re-written in an objective form to better fit this study on Public School

Administrators. Each question was then followed by (a) How frequently does this occur? and (b) How much does it bother you when it does occur?

On this modified Likert-type scale, odd items were given headings of "Not Applicable", "Rarely or Never",

"Occasionally" and "Frequently". Even items were given the headings of "Not Applicable", "Not At All", "Somewhat" and "Very Much". A copy of the final questionnaire may be found in Appendix B.

2. Constructive Thinking Inventory (CTI). The Constructive Thinking Inventory contains statements on feelings, beliefs and behavior. Respondents score "1" if the statement is definitely false and "5" if it is definitely true. A rating of "2" indicates that the statement is mainly false, while a rating of "4" indicates that it is mainly true. A score of "3" is used only if the respondent cannot decide if the item is mainly true or false. The Constructive Thinking Inventory has been correlated with itself, the Primary Emotions and Traits Scale and the Mother-Father-Peer Scale. The Constructive Thinking Inventory has calculated means, standard deviations and reliabilities. It contains 64 statements and, for the purposes of this study, will be used to measure coping ability. A copy of the Inventory can be found in Appendix C.

3. Primary Emotions and Traits Scale (PETS). The Primary Emotions and Traits Scale is an adjective check list that has several distinctive features. First, in addition to the usual emotions, it contains scales of broad traits. All scales are derived from factor analysis. Included are broad traits of extraversion, neuroticism and ego-strength, as well as narrower traits of self-esteem and integration which are components of ego-strength. Also included is

a scale of "positive state", based on the first unrotated factor, which consists of the 20 highest loading positive and negative items. This scale measures the degree to which a subject reports the presence of positive feelings and denies the presence of negative feelings. It is the most general predictor among all the scales. Not only is "positivity" of interest in its own right, but it is used to correct the other scales in a manner that makes them more differentiating. Before the scales were corrected for positivity, it was found that they were highly intercorrelated and produced similar correlations with other personality inventories. A first approach to improving the diagnostic contribution of the individual scales was based on partialing out the effect of magnitude of endorsement. This accomplished very little, probably because the bi-polarity of the scales achieved the same purpose. The next step was to partial out positivity (favorableness of responding as measured by the scale of positive versus negative state). It was concluded that a correction of 50% for positivity produced the most desirable combination of discriminability and coherence of results, and this is the correction that is currently employed.

PETS also provides a scale of internal consistency which consists of the correlation of an individual across 11 pairs of near synonyms, such as "cheerful and happy." To obtain a high

correlation, the individual must endorse similar items in the same way and, at the same time, respond differently to different pairs of items.

Means for PETS are based on 180 female and 107 male undergraduate students at the University of Massachusetts. Reliability coefficients (internal consistency) for all scales are above .80 and, for most of the longer scales, above .90. Validity was established by correlations with other inventories. It was found, for example, that ego-strength correlates impressively with a rationally constructed scale of ego-strength; the scale of neuroticism correlates impressively with Eysenck's scale of neuroticism and with the Guilford-Zimmerman scale of emotional instability, but is not correlated with Eysenck's scale of extroversion. And, the scale of extroversion correlates impressively with Eysenck's scale of extroversion, but is not correlated with his scale of neuroticism. A copy of the final questionnaire can be found in Appendix D.

4. Medical History Checklist (MHC). This checklist contains 59 questions pertaining to physical health. Respondents enter "1" to "5" on opscan sheets in response to the number of days in the past 12 months they estimate they had the listed symptoms, problems or reactions. The final list of variables (that appears in tables) are composed of groupings of items and make up the following composite variables: Drug/Food Problems is composed of items 17, 18 and 52. Psychological Symptoms is composed of items 20,21,22, and 46.

Accidents is composed of items 54 and 55. Physical Symptoms is composed of items 16-19, 24-39, 41-45, 48-51 and 53. Major Illnesses is composed of items 3-15. A copy of the final questionnaire can be found in Appendix E.

5. Measurement of Success. Found on the Demographic Data Sheet are three items which were used for our criterion for Success. Respondents enter "1" to "5" on opscan sheets using ratings of not successful at all to somewhat successful to very successful. Respondents were asked to rate how successful they consider themselves at their job, how successful other administrators would consider them at their job, and how successful teachers would consider them at their job.

Success on the job was divided into Objective Success which contains the items referring to Type of Public School Administrator, education highest degree earned, and current salary. Subjective Success contains the items referring to job success whereby the subject rates his job success himself, rates as he feels other administrators would consider him at his job, and rates how he feels teachers would consider him at his job.

Data Collection Procedures

The instruments were sent to 150 Public School Administrators who were randomly chosen from Southeast Massachusetts. The first

mailing went out in January, 1988 and was accompanied by a letter from the researcher. The letter indicated the importance of the participants' responses and how they would contribute significantly to the knowledge of the major sources of stress among Public School Administrators and, therefore, would aid in useful information for administrative preparation and inservice programs as well as suggest coping strategies and tactics which could be employed for increased health of administrators. A follow-up mailing went out early in February, 1988, thanking those administrators who did respond and requesting the questionnaires' completion and return if it had not already been done. The importance of their input was restated in this second letter. Both mailings included a return-addressed stamped envelope.

Data Treatment and Analysis

HYPOTHESIS 1

This hypothesis was tested by a Pearson Product Moment correlation between the various areas of stress, on the one hand, with the various scales of constructive thinking on the other.

HYPOTHESES 2a

This hypothesis was tested by a Pearson Product Moment correlation between the various areas of stress, on the one hand, and success on the job, as indicated by respondent, on the other.

HYPOTHESIS 2b

This hypothesis was tested by a Pearson Product Moment correlation between the various scales of constructive thinking, and success on the job, as indicated by respondent.

HYPOTHESIS 2c

This hypothesis was tested by a regression analysis of the interaction between stress and constructive thinking and their effect on success on the job as indicated by respondent.

HYPOTHESIS 3a

This hypothesis was tested by a Pearson Product Moment correlation between the various areas of stress, on the one hand, and emotional health on the other.

HYPOTHESIS 3b

This hypothesis was tested by a Pearson Product Moment correlation between the various scales of constructive thinking and emotional health.

HYPOTHESIS 3c

This hypothesis was tested by a regression analysis of the interaction between stress and constructive thinking and their effect on emotional health.

HYPOTHESIS 4a

This hypothesis was tested by a Pearson Product Moment correlation between the various areas of stress, on the one hand, and physical health on the other.

HYPOTHESIS 4b

This hypothesis was tested by a Pearson Product Moment correlation between the various scales of constructive thinking and physical health.

HYPOTHESIS 4c

This hypothesis was tested by a regression analysis of the interaction between stress and constructive thinking and their effect on physical health.

CHAPTER IV

RESULTS

Introduction

This chapter sets forth the descriptive analysis, comparative analysis, and basic correlational analysis of data representative of this study. The primary basis for the analysis of data presented herein was to look at the kind of stressors that different administrators face and to test the research hypotheses which operationally defined the purposes of the study.

Description and Analysis of Data

This study required a sample of full time Public School Administrators. Administrators were chosen from four categories: Superintendent, High School Principal, Junior High or Middle School Principal, and Elementary School Principal.

The Oregon School Administrators Stress Survey, Constructive Thinking Inventory, Primary Emotions and Traits Scale, Medical Checklist and Demographic Data Questionnaire were distributed by mail to Public School Administrators in Southeast Massachusetts during January, 1988. Of the 150 packets distributed among administrators, 105 out of 150 were returned. Ninety-two administrators provided complete responses to the instruments while thirteen subjects were eliminated due to incomplete data.

The Statistical Package for the Social Sciences (SPSS) was used for statistical analysis. Results of the analyses, such as means and correlational coefficients, have been rounded to two decimal places according to standard convention to facilitate presentation of the data and efficient construction of tables.

Pearson product-moment correlations, regression analyses, and factor analyses were calculated to measure the strength of relationship. An alpha of .05 was used as the significance criterion for correlations and .01 for interactions. The results of the analyses are presented in the following sections. Tables are presented where appropriate to display the findings.

Demographic Data

Sex. Of the 92 subjects who reported demographic data (Table 1), 72 (78%) were male and 20 (22%) were female.

Age. The subjects reported their ages by selecting one of four age groups. One (1%) was between 21 and 30 years old, 42 (45%) were between 31 and 45 years old, 37 (40%) were between 46 and 55 years old, and 12 (13%) were over the age of 55.

Number of years in field of education. The subjects reported their total years of experience in the field of education. One (1%) of the subjects reported one to five years experience, 6 (7%) reported six to 12 years, and 85 (92%) reported 13 years or more experience.

Table 1
Frequencies of the
Demographic Data

Variable	Frequency
<u>Sex</u>	
Male	72
Female	20
<u>Age</u>	
21-30	1
31-45	42
46-55	37
55 +	12
<u>Number of years in field of education</u>	
1-5 years	1
6-12 years	6
13 + years	85
<u>Number of years of service as Public School Administrator</u>	
1-5 years	31
6-12 years	27
13 + years	34

(continued)

Table 1 (continued)

Frequencies of the
Demographic Data

Variable	Frequency
<u>Type of Public School Administrator</u>	
Superintendent	17
High School Principal	18
Junior High or Middle School Principal	17
Elementary School Principal	40
<u>Education - highest degree earned</u>	
Masters	26
CAGS	54
Doctorate	12
<u>Current Salary</u>	
\$20,000. - \$30,000.	2
\$31,000. - \$40,000.	32
\$41,000. - \$50,000.	45
\$50,000. +	13

Number of years of service as Public School Administrator.

The subjects were asked to report the number of years of service they had as a Public School Administrator. In response to this item, 31 (34%) had one to five years of service, 27 (30%) had six to 12 years of service, and 34 (36%) had 13 or more years of service.

Type of Public School Administrator. The subjects reported the type of Public School Administrator they were by selecting one of four groups. Accordingly, 17 (19%) were Superintendents, 18 (20%) were High School Principals, 17 (17%) were Junior High or Middle School Principals, and 40 (44%) were Elementary School Principals.

Education - highest degree earned. According to the subjects' responses, 26 (29%) have a Masters, 54 (58%) have a Certificate of Advanced Graduate Study, and 12 (13%) have a Doctorate.

Current Salary. The subjects reported their salary by selecting one of four salary ranges. Accordingly, two (3%) reported their salary to be between \$20,000 and \$30,000, 32 (35%) reported their salary to be between \$31,000 and \$40,000, 45 (48%) reported their salary to be between \$41,000 and \$50,000, and 13 (14%) reported their salary to be over \$50,000.

Descriptive Data

The means and standard deviations for Frequency and Sensitivity rankings for items on the stress questionnaire according to job classification are presented in Appendix G together with a combined ranking by multiplying the Frequency and Sensitivity rankings for each item. The combined multiplicative ranking gives some indication of how stressful a particular activity is for a Public School Administrator when Frequency and Sensitivity are considered simultaneously.

Looking at Appendix G it can be seen that there are several most frequent and bothersome sources of stress. Of these, there are some that are common among all areas of job classification.

Elementary principals reported the following items to be most stressful in descending order and, with the mean stress indicated in parentheses: "having to comply with state, federal, and other bureaucratic rules and regulations" (10.15), "having a workload that I cannot finish during the normal workday" (8.75), "imposing high expectations on myself" (8.68), having to make decisions that affect the lives of individual people that I know" (7.88), "having time consuming meetings" (7.86) and "having my work interrupted by telephone calls (7.52).

Indicated below in parentheses, are the mean frequency of occurrence and disturbance values of reported stress items. "Having to comply with state, federal, and other bureaucratic rules and regulations" frequently occurred (3.18) and was somewhat disturbing (3.00). "Having a workload that I cannot finish during the normal workday" occasionally occurred (3.00) and was somewhat disturbing (2.88). "Imposing high expectations of myself" frequently occurred (3.33) and was somewhat disturbing (2.56). "Having to make decisions that affect the lives of individual people I know" was reported to sometimes occur (2.83) and was quite disturbing when it did occur (2.70). "Having time consuming meetings" rarely took place in the work day of the elementary principals (2.80) and was not very disturbing when they did take place (2.50). "Having my work interrupted by telephone calls" rarely occurred (2.80) and was not very disturbing when it did occur (2.50).

Junior High School principals reported the following items to be most stressful in descending order and, with the mean stress indicated in parentheses: "having a workload that I cannot finish during the normal workday" (11.18), "evaluating staff members' performance" (10.12), "having time-consuming meetings" (9.82), "having my work interrupted by telephone calls" (9.65), "imposing high expectations on myself" (9.53) and "having to supervise and coordinate the tasks of many people" (9.35).

Indicated below in parentheses are the mean frequency of occurrence and disturbance values of reported stress items. "Having a workload that I cannot finish during the normal workday" frequently occurred (3.53) and was most disturbing (3.12). "Evaluating staff members' performance" frequently occurred (3.65) and was disturbing (2.71). "Having time consuming meetings occurred occasionally (3.06) and was somewhat disturbing (3.06). "Having my work interrupted by telephone calls" (3.53) frequently occurred (3.14) and was somewhat disturbing (2.71). "Imposing high expectations on myself" frequently occurred (3.24) and was somewhat disturbing (2.71). "Having to supervise and coordinate the tasks of many people" frequently occurred (3.24) and was disturbing (2.71) to Junior High School principals.

High School Principals reported the following items to be most stressful in descending order and, with the mean stress indicated in parentheses: "having a workload that I cannot finish during the normal workday" (10.72), "having to comply with state, federal, and other bureaucratic rules and regulations" (10.67), "having time-consuming meetings" (9.89), "having my work interrupted by telephone calls" (9.50) and "having to make decisions that affect the lives of individual people that I know" (8.78).

Indicated below in parentheses, are the mean frequency of occurrence and disturbance values of reported stress items. "Having a workload that I cannot finish during the normal workday"

frequently occurred (3.33) and was quite disturbing (3.00). "Having to comply with state, federal, and other bureaucratic rules and regulations" frequently occurred (3.22) and was most disturbing (3.11). "Having time-consuming meetings" frequently occurred (3.28) and was quite disturbing (3.00). "Having my work interrupted by telephone calls" frequently occurred (3.44) and was somewhat disturbing (2.67), "Having to make decisions that affect the lives of individual people I know" frequently occurred (3.17) and was mildly disturbing (2.01).

Superintendents reported the following items to be most stressful in descending order and, with the mean stress indicated in parentheses: "imposing high expectations on myself" (9.71), "having to comply with state, federal, and other bureaucratic rules and regulations" (9.59), "having a workload that I cannot finish during the normal workday" (8.12), "having time-consuming meetings" (8.12), "writing memos, letters and other communications" (7.94) and "having to complete reports and other paperwork by a deadline" (7.65).

Indicated below in parentheses, are the mean frequency of occurrence and disturbance values of reported stress items. "Imposing high expectations on myself" frequently occurred (3.53) and was disturbing (2.71). "Having to comply with state, federal, and other bureaucratic rules and regulations" frequently occurred (3.29) and was somewhat disturbing (2.59). "Having a workload that I

cannot finish during the normal workday" occasionally occurred (2.94) and was somewhat disturbing (2.46). "Having time-consuming meetings" occasionally occurred (2.88) and was somewhat disturbing (2.65). "Writing memo's, letters and other communications" frequently occurred (3.18) and was mildly disturbing (2.18). "Having to complete reports and other paperwork by a deadline" frequently occurred (3.00) and was somewhat disturbing (2.41).

The data suggests that the Superintendents' job classification presents less perceived stress than that of the Public School Principal at all three levels.

As stated, one of the major purposes of this study was to investigate the structure of stress by examining the kinds of events that produce stress. It was to look at the five "factors" of the Oregon School Administrators Stress Survey to determine if in fact, five factors exist and to determine the actual factor structure of the potential stressors, termed load.

First, a five factor confirmatory factor analysis, with varimax rotation, was done for load and sensitivity to determine whether the five divisions from the Oregon Administrative Stress Survey would appear as factors. Inspection of Tables 2a and 2b indicate that it was not. Only two interpretable factors were evident, corresponding to administrative and interpersonal stress. This was true for both the analyses of load which pertains to the potential stressors and how frequently they occur, and stress which pertains to any action or

situation that places physical or psychological demands on an individual. Sensitivity pertains to the potential stressors and how bothersome they are when they do occur. A two factor analysis with varimax rotation was next done (see Tables 3a and 3b). Scales for measuring administrative stress and interpersonal stress were constructed by selecting items that had loadings of greater than .30 on the same factor for both load and stress. The items that comprise the scales are presented in Table 4, along with the means, standard deviations, and alpha reliability coefficients for the scales for load sensitivity, and overall stress.

Table 2-a
Confirmatory Factor Analysis of Stress for Five Factors

Load

	Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Admin. Constraints	1		.33	.52		.38
	3		.34			
	5		.65			
	7		.65	.38		
	9	.44	.43			
	11		.34	.73		
	13	.30	.41			
Admin. Responsibility	15		.49			.62
	17		.43			
	19		.53			
	21					
	23		.45		.52	
	25		.31			
	27		.36			
Inter-personal Relations	29	.35		.47		.40
	31	.49		.55		
	33				.85	
	35	.40			.37	
	37				.80	
	39			.49	.55	
	41			.61		
Intra-personal Conflicts	43	.61		.31		.32
	45	.79				
	47		.37			
	49	.48				
	51		.38		.37	
	53	.55		.45		
Role Expectations	57	.47		.45		
	59	.55		.41		
	61	.56				

Note: Only loadings of at least .30 are entered.

Table 2-b
Confirmatory Factor Analysis of Stress for Five Factors
Sensitivity

	Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Admin. Constraints	2		.53			
	4	.36	.33	.31		.36
	6	.42	.42			
	8	.39				
	10	.51				.31
	12		.60			
	14	.52				
Admin. Responsibility	16	.47				.44
	18	.44			.35	
	20	.62				.65
	22					.58
	24	.36			.43	.78
	26					
	28	.49				
Inter-personal Relations	30		.37	.48		
	32		.64	.56		
	34			.41	.57	.34
	36		.42	.31	.45	
	38				.83	
	40				.64	
	42		.61			
Intra-personal Conflicts	44	.60		.30		
	46			.74		
	48	.51				
	50	.61				
	52	.39			.52	
	54		.32	.64		
Role Expectations	58		.53	.58		
	60		.48			
	62		.52			

Note: Only loadings of at least .30 are entered.

Table 3 a
Confirmatory Factor Analysis of Stress for Two Factors

Load

	Items	Factor 1	Factor 2
Administrative Constraints	1	.52	.39
	3	.54	
	5	.42	
	7	.51	.30
	9	.30	.36
	11	.51	.46
	13	.30	
Administrative Responsibility	15	.52	
	17	.48	
	19	.57	
	21	.51	
	23	.55	
	25	.70	
	27	.36	
Interpersonal Relations	29	.30	.56
	31		.67
	33	.51	
	35	.42	.39
	37	.44	
	39	.61	.43
	41		.45
Intrapersonal Conflicts	43		.67
	45		.73
	47		.35
	49		.40
	51	.72	
	53		.71
Role Expectations	57		.67
	59		.68
	61		.50

Note: Only loadings of at least .30 are entered.

Table 3 b
Confirmatory Factor Analysis of Stress for Two Factors

Sensitivity

	Items	Factor 1	Factor 2
Administrative Constraints	2	.34	.51
	4	.49	.48
	6	.47	.37
	8	.41	.31
	10	.49	
	12		.45
	14	.47	.37
Administrative Responsibility	16	.65	
	18	.54	.42
	20	.56	
	22	.49	
	24	.77	
	26	.40	
	28	.48	
Interpersonal Relations	30		.60
	32		.84
	34	.58	.38
	36	.35	.50
	38	.65	
	40	.53	
	42		.54
Intrapersonal Conflicts	44	.39	.42
	46		.65
	48	.39	
	50	.61	.30
	52	.54	
	54		.69
Role Expectations	58		.81
	60	.31	.55
	62		.39

Note: Only loadings of at least .30 are entered.

Table 4
Means, Standard Deviations and Internal Consistency Reliability
Coefficients (Coefficient Alpha) for all Scales

Variable	Mean	Standard Deviation	Reliability Coefficient
<u>Constructive Thinking Scale</u>			
Constructive Thinking	102.82	9.14	.77
Emotional Coping	29.54	5.51	.72
Behavioral Coping	49.96	4.63	.73
Categorical Thinking	23.26	4.21	.45
Superstitious Thinking	16.52	3.96	.46
Naive Optimism	24.20	4.49	.74
Negative Thinking	22.73	4.78	.28
<u>Total Stress</u>			
Load	78.63	17.18	.92
Sensitivity	68.75	21.00	.89
Stress	200.59	78.72	.94
<u>Administrative Stress</u>			
Load	39.02	9.37	.86
Sensitivity	31.04	10.23	.80
Stress	93.69	39.33	.88
<u>Interpersonal Stress</u>			
Load	18.91	6.57	.87
Sensitivity	19.99	8.21	.88
Stress	50.78	27.14	.88

(continued)

Table 4 (Continued)
Means, Standard Deviations and Internal Consistency Reliability
Coefficients (Coefficient Alpha) for all Scales

Variable	Mean	Standard Deviation	Reliability Coefficient
<u>Demographic Data</u>			
Sex	1.22	.42	---
Age	2.66	.72	---
Years Experience in Field of Education	2.91	.32	---
Years Service as Public School Administrator	2.02	.84	---
Type of Public School Administrator	2.13	1.18	---
Education - Highest Degree Earned	2.85	.63	---
Current Salary	2.75	.72	---
<u>Success</u>			
Subjective Success	13.07	1.72	.78
Objective Success	7.73	1.97	.61
<u>Medical</u>			
Drug/Food Problems	3.49	.92	.17
Psychological Symptoms	7.23	2.67	.79
Accidents	3.27	2.08	.81
Physical Symptoms	39.39	8.03	.84
Major Illnesses	14.40	1.76	.70
Missed Work due to Illness	1.37	.61	---
Visit Physician for Physical Ailment	2.07	1.14	---
Satisfaction with Health	3.98	1.07	---

(continued)

Table 4 (Continued)
Means, Standard Deviations and Internal Consistency Reliability
Coefficients (Coefficient Alpha) for all Scales

Variable	Mean	Standard Deviation	Reliability Coefficient
<u>PETS</u>			
Consistency of Response	.77	.15	---
<u>Positive</u> vs. Neg. State	82.04	8.73	.95
<u>Extroverted</u> vs. Introverted	48.29	6.46	.92
<u>Vigorous</u> vs. Fatigued	25.45	4.22	.93
Non-Neuroticism	44.36	5.71	.93
<u>Ego-Strength</u> vs. Ego-Weakness	51.60	5.78	.93
<u>Happy</u> vs. Depressed	46.48	5.74	.92
<u>Calm</u> vs. Anxious	22.25	4.50	.91
<u>Agreeable</u> vs. Angry	25.12	3.66	.89
<u>Caring</u> vs. Uncaring	34.22	3.66	.88
Self Esteem	23.47	3.51	.92
<u>Integrated</u> vs. Disorganized	23.87	3.50	.92
Emotional Arousal	86.30	7.54	.95

In addition to the descriptive data, a one-way analysis of variance based on subgroup means was computed to determine if the differences of perceived levels of stress according to job classification were statistically significant. Analyses are presented in Tables 5 through 13. Significant differences were found (.01 level) under Administrative Load, shown in Table 8 and under Total Administrative Stress (.05 level) shown in Table 12.

Table 5A

Means and Standard Deviations of Ratings for Total Load as a Function of Job Classification

Type of Administrator	Mean Load	Standard Deviation	N
Elementary Principal	76.55	17.28	40
Junior High Principal	82.65	16.27	17
High School Principal	85.72	12.37	18
Superintendent	72.00	19.83	17
Total	78.63	17.18	92

Table 5B Analysis of Variance

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	3	2100.04	700.01	2.49 (N.S.)
Within Groups	88	24773.39	281.51	
Total	91	26873.43		

Table 6A

Means and Standard Deviations of Ratings for Total Sensitivity as a Function of Job Classification

Type of Administrator	Mean Sensitivity	Standard Deviation	N
Elementary Principal	66.70	21.46	40
Junior High Principal	72.75	24.93	17
High School Principal	74.02	15.66	18
Superintendent	63.99	20.54	17
Total	68.75	21.00	92

Table 6B Analysis of Variance

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	3	1325.04	441.68	1.0012 (N.S.)
Within Groups	88	38822.43	441.16	
Total	91	40147.47		

Table 7 A

Means and Standard Deviations of Ratings for Total Stress as a Function of Job Classification

Type of Administrator	Mean Stress	Standard Deviation	
Elementary Principal	190.20	80.36	40
Junior High Principal	222.2353	89.12	17
High School Principal	227.22	57.43	18
Superintendent	175.18	76.22	17
Total	200.59	78.73	92

Table 7B Analysis of Variance

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	3	36029.26	12009.75	2.00 (N.S.)
Within Groups	88	.5280	5999.76	
Total	91	.5640		

Table 8 A

Means and Standard Deviations of Ratings for Total Administrative Load as a Function of Job Classification

Type of Administrator	Mean Admin. Load	Standard Deviation	N
Elementary Principal	38.10	8.59	40
Junior High Principal	42.76	6.43	17
High School Principal	42.78	6.16	18
Superintendent	33.47	13.11	17
Total	39.02	9.37	92

Table 8B Analysis of Variance

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	3	1049.95	349.98	4.44*
Within Groups	88	6934.01	78.80	
Total	91	7983.96		

*p < .01

Table 9 A

Means and Standard Deviations of Ratings for Total Administrative Sensitivity as a Function of Job Classification

Type of Administrator	Mean Adm. Sensitivity	Standard Deviation	N
Elementary Principal	30.64	9.78	40
Junior High Principal	34.53	11.48	17
High School Principal	31.95	8.82	18
Superintendent	27.55	11.00	17
Total	31.04	10.24	92

Table 9B Analysis of Variance

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	3	434.60	144.87	1.40 (N.S.)
Within Groups	88	99099.07	103.40	
Total	91	9533.67		

Table 10 A

Means and Standard Deviations of Ratings for Total Interpersonal Load as a Function of Job Classification

Type of Administrator	Mean Interpersonal Load	Standard Deviation	N
Elementary Principal	18.08	7.09	40
Junior High Principal	19.00	8.07	17
High School Principal	21.11	4.28	18
Superintendent	18.47	5.56	17
Total Population	18.91	6.57	92

Table 10B Analysis of Variance

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	3	118.52	39.51	.91 (N.S.)
Within Groups	88	3808.79	43.28	
Total	91	39227.30		

Table 11A

**Means and Standard Deviations of Ratings for Total Interpersonal
Stress as a Function of Job Classification**

Type of Administrator	Mean Interpers. Stress	Standard Deviation	N
Elementary Principal	46.83	30.32	40
Junior High Principal	50.76	28.46	17
High School Principal	63.00	19.87	18
Superintendent	47.18	22.35	17
Total	50.78	27.14	92

Table 11B Analysis of Variance

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	3	3534.35	1178.12	1.63 (N.S.)
Within Groups	88	63499.30	721.58	
Total	91	67033.65		

Table 12 A

Means and Standard Deviations of Ratings for Total Administrative Stress as a Function of Job Classification

Type of Administrator	Mean Admin. Stress	Standard Deviation	N
Elementary Principal	89.33	36.47	40
Junior High Principal	112.29	45.69	17
High School Principal	103.67	29.07	18
Superintendent	74.76	40.81	17
Total	50.78	27.14	92

Table 12B Analysis of Variance

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	3	14526.50	4842.17	3.37*
Within Groups	88	1236	1435.01	
Total	91	1408		

* $p < .05$

Table 13 A

Means and Standard Deviations of Ratings for Total Interpersonal Sensitivity as a Function of Job Classification

Type of Administrator	Mean Interpersonal Sensitivity	Standard Deviation	N
Elementary Principal	18.64	9.18	40
Junior High Principal	19..87	8.89	17
High School Principal	23.91	5.12	18
Superintendent	19.14	6.94	17
Total	19.99	8.21	92

Table 13B Analysis of Variance

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	3	362..05	120.68	1.84 (N.S.)
Within Groups	88	5769.71	65.56	
Total	91	6131.76		

Test of Hypotheses

H₁:

There is a significant negative relation between stress and constructive thinking.

Results of the correlations between Stress and Constructive Thinking are shown in Tables 14, 15, and 16. The Emotional Coping Scale is significantly correlated with Total Stress ($r = -.25^*$).

Administrators with higher scores on Emotional Coping report experiencing less stress than those who obtain lower scores on Emotional Coping. The results are weaker ($r=-.14$) and nonsignificant for Administrative Stress and stronger ($r=-.31^{**}$) and highly significant for Interpersonal Stress. There are no significant correlations of the CTI scales with Administrative Stress.

Interpersonal Stress, on the other hand, is not only significantly correlated with Emotional Coping but also with Global Constructive Thinking ($r=-.22^*$). Thus the results for Total Stress can be accounted for by the items that refer to interpersonal stress. In conclusion, the hypothesis is supported for Total Stress and Interpersonal Stress, but not for Administrative Stress.

It is of interest to examine the relative contribution of the two components of stress, load and sensitivity, to the findings for total stress. It can be seen in Tables 14 and 15 that none of the CTI scales

Table 14
**Correlation Matrix for Total Stress Variables x Constructive
Thinking Variables (N = 92)**

TOTAL			
	Load	Sensitivity	Stress
Global Constructive Thinking	-.08	-.29**	-.19
Emotional Coping	-.13	-.31**	-.25*
Behavioral Coping	.05	-.22*	-.09
Categorical Thinking	-.10	.05	-.05
Superstitious Thinking	.07	.23*	-.17
Naive Optimism	.00	.12	.03
Negative Thinking	.08	.24*	.15

* p < .05
** p < .01
*** p < .001

Table 15

**Correlation Matrix for Administrative Stress Variables x
Constructive Thinking Variables (N=92)**

	Administrative:		
	Load	Sensitivity	Stress
Global Constructive Thinking	.08	- .27**	-.15
Emotional Coping	.04	- .24*	-.14
Behavioral Coping	.17	- .25*	- .09
Categorical Thinking	-.18	.08	- .05
Superstitious Thinking	-.06	.23*	.14
Naive Optimism	-.04	.13	.04
Negative Thinking	-.03	.24*	.12

* p < .05

** p < .01

*** p < .001

Table 16
Correlation Matrix for Interpersonal Stress Variables x
Constructive Thinking Variables (N=92)

	Interpersonal:		
	Load	Sensitivity	Stress
Global Constructive Thinking	-.24*	-.26*	-.22*
Emotional Coping	-.26*	-.32**	-.31**
Behavioral Coping	.12	-.15	-.09
Categorical Thinking	.01	.04	-.03
Superstitious Thinking	.17	.16	.14
Naive Optimism	.01	.05	-.04
Negative Thinking	.17	.21	.16

* p < .05
 ** p < .01
 *** p < .001

are related to Administrative Load, but several are related to Administrative Sensitivity. Thus the frequency of occurrence of the potentially stressful administrative tasks appears to be unrelated to Constructive Thinking. Not surprisingly, however, sensitivity to the tasks is inversely associated with Constructive Thinking. The situation is different for the interpersonal items, the degree to which an administrator is exposed to these potential stressors is associated with an Administrator's Constructive Thinking. The better the administrator's Constructive Thinking, the less he or she is exposed to potentially stressful interpersonal events.

H_{2a}

There is a significant negative relation between stress and success on the job.

Results of the correlations comparing Stress and Success on the Job are shown in the Tables 17, 18, and 19.

Success on the Job was looked at by dividing it into two parts. Objective Success, which contains the items referring to type of Public School Administrator, Education, (highest degree earned), and Current Salary. Subjective Success contains the items referring to job success whereby the subject rates his job success, how he feels other administrators would consider him at his job, and how he feels teachers would consider him at his job.

Table 17
Correlation Matrix for Total Stress Variables x Demographic
Variables and Success on the Job (N = 92)

	Total:		
	Load	Sensitivity	Stress
Sex	-.09	-.09	-.09
Age	-.13	.01	-.03
Years Exp. in Field of Education	-.02	-.00	.03
Years Service as Public School Administrator	.03	.10	.10
Type of Public School Administrator	-.01	.01	.00
Education - highest degree earned	-.20*	-.20*	-.21*
Current Salary	-.03	-.10	-.06
Success on the Job Subject Rates Self	-.05	-.19	-.14
Success on the Job Subject Rates Other Admin. Views	.04	-.12	-.07
Success on the Job Subject Rates Teacher's Views	.18	-.05	.04
Subjective Success	.07	-.14	-.06
Objective Success	-.08	-.10	-.09

* p < .05
 ** p < .01
 *** p < .001

Table 18
Correlation Matrix for Administrative Stress Variables x
Demographic Variables and Success on the Job (N = 92)

	Administrative		
	Load	Sensitivity	Stress
Sex	-.06	-.07	-.09
Age	-.16	.08	.01
Years Exp. in Field of Education	.02	.05	.09
Years Service as Public School Administrator	.11	.15	.16
Type of Public School Administrator	-.08	-.08	-.07
Education - highest degree earned	-.19	-.26*	-.26*
Current Salary	.02	-.11	-.06
Success on the Job Subject Rates Self	.05	-.12	-.04
Success on the Job Subject Rates Other Admin. Views	.20*	-.07	.01
Success on the Job Subject Rates Teacher's Views	.27**	.03	.13
Subjective Success	.21*	-.06	.05
Objective Success	-.10	-.17	-.15

* p < .05
 ** p < .01
 *** p < .001

Table 19
Correlation Matrix for Interpersonal Stress Variables x
Demographic Variables and Success on the Job (N = 92)

	Load	Interpersonal: Sensitivity	Stress
Sex	-.15	-.16	-.14
Age	-.10	-.11	-.10
Years Exp. in Field of Education	-.06	-.05	-.04
Years Service as Public School Administrator	-.06	.03	-.00
Type of Public School Administrator	.08	.11	.09
Education - highest degree earned	-.20	-.15	-.15
Current Salary	-.10	-.11	-.11
Success on the Job Subject Rates Self	-.20*	-.22*	-.23*
Success on the Job Subject Rates Other Admin. Views	-.18	-.19	-.18
Success on the Job Subject Rates Teacher's Views	-.03	-.15	-.12
Subjective Success	-.16	-.22*	-.21*
Objective Success	-.05	-.02	-.04

* p < .05

** p < .01

*** p < .001

There are no significant correlations of Total Stress or Administrative Stress with Subjective Success on Objective Success.

Administrative Load is correlated $r = .20$ at the .05 level with Success on the Job (when another administrator rates the subject) and correlated $r = .27$ at the .01 level when a (teacher rates) the subject.

Interpersonal Stress is correlated $r = -.23$ at the .05 level of significance with Success on the Job when the subject rates himself. Interpersonal Load ($r = -.20$) at the .05 level of significance and Interpersonal Sensitivity ($r = -.22$) are also marginally correlated ($r = -.22$) with Success on the Job when the subject rates himself. In conclusion, the hypothesis is supported for Interpersonal Stress on two measures of self-rated success, but is not supported for Total Stress nor Administrative Stress.

H2b:

There is a significant positive relation between constructive thinking and success on the job.

As can be seen from the correlation between Global Constructive Thinking and Success on the Job in Tables 20 A and 20 B, a significant relationship exists ($r = .20^*$, $.21^*$) between Constructive Thinking and Success on the Job when the subject rates himself and when subject rates other administrator's views.

Table 20 A - Correlation Matrix for Constructive Thinking Variables x Demographic Variables

Demographic Variables	Constructive Thinking (N=92)						
	Global Constructive Thinking	Emotional Coping	Behavioral Coping	Categorical Thinking	Superstitious Thinking	Naive Optimism	Negative Thinking
Sex	.12	-.04	.07	-.16	-.08	.01	.04
Age	-.11	-.03	-.12	.23*	.04	.00	.10
Years Experience in Field of Education	.04	-.04	.03	.00	-.09	.12	.03
Years Service as Public School Administrator	-.02	-.03	.06	.10	.02	.01	.00
Type of Public School Administrator	.01	.08	-.01	.14	-.00	-.06	-.13
Education - Highest Degree Earned	.21*	.14	.10	-.11	-.11	-.01	-.16
Current Salary	.01	.03	.09	.16	-.10	.11	-.08

Table 20 B - Correlation Matrix for Constructive Thinking Variables x Success on the Job Variables (N = 92)

Demographic Variables	Constructive Thinking						
	Global Constructive Thinking	Emotional Coping	Behavioral Coping	Categorical Thinking	Superstitious Thinking	Naive Optimism	Negative Thinking
Success on the Job - (Subject Rates Self)	.20*	.24*	.19	.04	-.12	.10	-.07
Success on the Job -(Other Admin. Rates Subject)	.21*	.18	.19	-.07	-.24*	-.07	-.10
Success on the Job -(Teacher Rates Subject)	.08	.10	.18	.14	-.05	.09	.02
Subjective Success	.19	.20*	.22*	.05	-.16	.05	-.06
Objective Success	.07	.10	.06	.11	-.07	.00	-.16

* p < .05
 ** p < .01
 *** p < .001

Note: Subjective Success contains items 6,7 and 8 from the Demographic Data. Objective Success contains items 9, 10, and 11 from the Demographic Data.

Marginal relationships also exist between Success on the Job and the CTI scales of Emotional Coping, Behavioral Coping, and Superstitious Thinking.

Subjective Success is significantly correlated with the CTI scales of Emotional Coping and Behavioral Coping. Objective Success presents no significant correlations. In conclusion, the hypothesis is supported for the measures of self-rated success, but not for the more objective index of success.

H_{2c}:

There is a significant interaction between stress and constructive thinking as it relates to success on the job.

The Regression Analysis found no significant interaction.

Thus, the hypothesis is not supported.

H_{3a}:

There is a significant negative relation between stress and emotional health.

Results of the correlations between Stress and PETS variables are shown in Tables 21, 22, and 23.

Non-Neuroticism is significantly negatively correlated with Total Stress: the greater the stress, the greater the neuroticism.

Table 21
Correlation Matrix for Total Stress Variables x Emotional Adjustment as Measured by PETS (N = 92)

	Total:		
	Load	Sensitivity	Stress
Consistency of Response	.14	-.05	.0
<u>Positive</u> vs. neg. state	.04	-.22*	-.11
<u>Extroverted</u> vs. Intro- verted	.12	-.14	-.01
<u>Vigorous</u> vs. Fatigued	.25*	.03	.16
Non-neuroticism	-.21*	-.33**	-.30**
<u>Ego-strength</u> vs. Ego-weakness	.17	-.08	-.03
<u>Happy</u> vs. Depressed	.21*	-.07	.07
<u>Calm</u> vs. Anxious	.07	-.12	-.03
<u>Agreeable</u> vs. Angry	.00	-.16	-.10
<u>Caring</u> vs. Uncaring	.10	.09	.01
Self-Esteem	.02	-.16	-.09
<u>Integrated</u> vs. Dis- organized	.20*	.01	.11
Emotional Arousal	.25*	.21*	.27**

* p < .05
 ** p < .01
 *** p < .001

Table 22
Correlation Matrix for Administrative Stress Variables x Emotional Adjustment as measured by PETS (N = 92)

	Administrative:		
	Load	Sensitivity	Stress
Consistency of Response	.21*	-.07	.04
<u>Positive vs. neg. state</u>	.16	-.23*	-.07
<u>Extroverted vs. Introverted</u>	.26*	-.15	-.05
<u>Vigorous vs. Fatigued</u>	.30**	-.01	.17
Non-neuroticism	-.06	-.26*	-.21*
<u>Ego-strength vs. Ego-weakness</u>	.30**	-.12	-.07
<u>Happy vs. Depressed</u>	.33**	-.08	.11
<u>Calm vs. Anxious</u>	.14	-.11	.01
<u>Agreeable vs. Angry</u>	.08	-.13	-.02
<u>Caring vs. Uncaring</u>	.21*	-.11	.05
Self-Esteem	.09	-.17	-.06
<u>Integrated vs. Disorganized</u>	.29**	.06	.12
Emotional Arousal	.22*	.19	.28**

* p < .05
 ** p < .01
 *** p < .001

Table 23
 Correlation Matrix for Interpersonal Stress Variables x Emotional
 Adjustment as measured by PETS (N = 92)

Interpersonal:			
	Load	Sensitivity	Stress
Consistency of Response	-.00	-.03	.01
<u>Positive</u> vs. neg. state	-.13	-.14	-.11
<u>Extroverted</u> vs. Intro- verted	-.07	-.09	-.06
<u>Vigorous</u> vs. Fatigued	.10	.06	.10
Non-neuroticism	-.30**	-.34**	-.33**
<u>Ego-strength</u> vs. Ego-weakness	-.01	-.03	.00
<u>Happy</u> vs. Depressed	-.01	-.04	.00
<u>Calm</u> vs. Anxious	-.05	-.10	-.06
<u>Agreeable</u> vs. Angry	-.10	-.19	-.18
<u>Caring</u> vs. Uncaring	-.08	-.11	-.09
Self-Esteem	-.09	-.11	-.10
<u>Integrated</u> vs. Dis- organized	.05	.08	.10
Emotional Arousal	.19	.17	.18

* p < .05
 ** p < .01
 *** p < .001

Non-Neuroticism is also negatively correlated with Total Load and Total Sensitivity.

Also of interest are significant correlations of PETS Scales with Total Load and Administrative Load. Non-neuroticism, Happy vs. Depressed, Vigorous vs. Fatigued, Integrated vs. Disorganized and Emotional Arousal are all weakly correlated ($r = .20, -.21$) with Total Load. The greater the total load, the more the administrators report that they feel happy, integrated, vigorous and aroused. On the other hand, they also obtain more neurotic scores. This anomaly is clarified by inspection of the results on Administrative and Interpersonal Load in Tables 22 and 23. A high Administrative Load is uniformly associated with favorable adjustment, whereas a high Interpersonal Load is associated with neuroticism. Not surprisingly, sensitivity and stress are always positively associated with maladjustment.

H_{3b}

There is a significant positive relation between Constructive Thinking and Emotional Health.

Results of the correlations between Global Constructive Thinking and PETS variables are shown in Table 24A.

Table 24 A - Correlation Matrix for Constructive Thinking Variables x Primary Emotions and Traits Variables (N = 92)

	Constructive Thinking						
	Global Thinking	Emotional Coping	Behavioral Coping	Categorical Thinking	Superstitious Thinking	Naive Optimism	Negative Thinking
PETS							
Consistency of Response	.24*	.13	.31**	-.31**	-.24*	-.03	-.34**
Positive vs. Negative State	.48***	.36***	.43***	-.41***	-.41***	-.18	-.57***
Extroverted vs. Introverted	.35***	.34***	.42***	-.31**	-.18	-.08	-.40***
Non Neuroticism	.39***	.31**	.18	-.28**	-.45***	-.13	-.38***
Ego-Strength vs. Ego-Weakness	.41***	.32**	.36***	-.38***	-.42***	-.23*	-.44***
Happy vs. Depressed	.36***	.24*	.42***	-.29**	-.32**	-.12	-.51***
Calm vs. Anxious	.40***	.39***	.19	-.38***	-.47***	-.16	-.33**

(Continued)

Table 24 A - (Continued) - Correlation Matrix for Constructive Thinking Variables x Primary Emotions and Traits Variables (N =92)

	Constructive Thinking							
	Global Thinking	Constructive Coping	Emotional Coping	Behavioral Coping	Categorical Thinking	Superstitious Thinking	Naive Optimism	Negative Thinking
PETS								
<u>Agreeable vs. Angry</u>	.34***	.23*	.23*	.23*	-.32**	-.35***	.04	-.33**
<u>Caring vs. Uncaring</u>	.31**	.18	.38***	.38***	-.39***	-.10	.02	-.30**
<u>Vigorous vs. Fatigued</u>	.23*	.13	.29**	.29**	-.20	-.15	-.06	-.38***
<u>Self-Esteem</u>	.24*	.20	.27**	.27**	-.20	-.24*	-.07	-.25*
<u>Integrated vs. Disorganized</u>	.31**	.30**	.34***	.34***	-.24*	-.36	-.27	-.35***
<u>Emotional Arousal</u>	-.08	-.04	.15	.15	.02	-.29**	.15	.08

* p < .05
 ** p < .01
 *** p < .001

Constructive Thinking is correlated broadly with Emotional Health. There is an even stronger relationship found here than the relationship between Constructive Thinking and Stress.

All scales of the Constructive Thinking Inventory, excluding Naive Optimism are significantly correlated with at least eight out of thirteen PETS variables and, in some cases, twelve out of thirteen variables.

The critical variables for the Primary Emotions and Traits Scale in testing our hypothesis are: Positive vs. Negative State, Non-neuroticism, and the three negative emotions, Depression, Anxiety and Anger. All of these variables are highly significantly correlated (.001 level) in the expected direction with several of the Constructive Thinking Scales. In conclusion, the hypothesis is supported.

In addition to the Pets variables, the variable of Psychological Symptoms (from the Medical History Form) are of interest.

Significant correlations can be seen in Tables 25 - 27.

H_{3c}:

There is a significant interaction between stress and constructive thinking as it relates to emotional health.

A significant interaction was found (.01 level) between Interpersonal Stress and Superstitious Thinking with Happy vs. Depressed as the dependent variable. In order to examine the form of this interaction, Happy - Depressed was regressed separately on Inter-personal Stress for subjects in the upper and lower thirds of the distribution on Superstitious Thinking. The significant interactions can be seen in Table 24 B. Not surprisingly, subjects who are low in Superstitious Thinking are less depressed, overall, than subjects who are high on Superstitious Thinking. However, whereas the former exhibits an increase in depression as a function of increasing interpersonal stress, the latter, exhibits a decrease.

Table 24 B

Exploration of Significant Interactions of Happy vs. Depressed as a function of Interpersonal Stress x Superstitious Thinking

	N	Cut-off Score	r	Level of Signif.	b	c
Interpersonal Stress x Superstitious Thinking = Happy - Depressed						
Low Superstitious Thinking	32	< 15	-.28	.12	-13	54.15
High Superstitious Thinking	32	≥ 18	.27	.14	.05	43.34

Note: b = slope, c = y intercept

H_{4a}:

There is a significant negative relation between stress and physical health.

Results of the correlation between stress and physical health are shown in Tables 25, 26 and 27.

The only correlations of Stress with Physical Health that are of interest are: Drug/Food Problems x Total Stress ($r = -.18$), and Drug/Food Problems x Administrative Stress ($r = .17$) which all fall slightly short of significance at the .05 level. In conclusion, this hypothesis is not supported for either Total Stress, Administrative Stress, or Interpersonal Stress on physical health.

Table 25

Correlation Matrix for Total Stress Variables x Medical History Items (N = 92)

Medical History Items	Load	Total: Sensitivity	Stress
Drug/Food Problems	-.18	.14	.18
Psychological Symptoms	.22*	.25*	.25*
Accidents	.22*	.04	.05
Physical Symptoms	.04	.11	.07
Major Illnesses	.03	.09	.09
Missed Work due to Illness	-.02	.02	-.02
Visit Physician for Physical Ailment	-.00	-.03	-.01
Satisfaction with Health	.12	-.07	.02

- * p < .05
 ** p < .01
 *** p < .001

Table 26

**Correlation Matrix for Administrative Stress Variables x Medical
History Items (N = 92)**

	Administrative:		
	Load	Sensitivity	Stress
Drug/Food Problems	.18	.12	.17
Psychological Symptoms	.10	.17	.14
Accidents	- .00	- .01	.00
Physical Health	- .03	.06	.01
Major Illnesses	.04	.08	.06
Missed Work due to Illness	.03	.06	.01
Visit Physician for Physical Ailment	.08	- .06	- .02
Satisfaction with Health	.18	- .08	.05

- * p < .05
 ** p < .01
 *** p < .001

Table 27
Correlation Matrix for Interpersonal Stress Variables x Medical History Items (N = 92)

Medical History Items	Interpersonal: Load	Sensitivity	Stress
Drug/Food Problems	.10	.13	.13
Psychological Symptoms	.26*	.28**	.29**
Accidents	.01	.09	.08
Physical Health	.06	.16	.12
Major Illnesses	- .00	.08	.09
Missed Work due to Illness	- .06	- .02	- .03
Visit Physician for Physical Ailment	- .11	- .01	- .02
Satisfaction with	.02	- .03	- .02

* p < .05
 ** p < .01
 *** p < .001

H4b:

There is a significant positive relation between constructive thinking and physical health.

Results of the correlation between Global Constructive Thinking and Physical Symptoms are shown in Table 28A.

Physical Symptoms is significantly correlated at the .01 level ($r = -.29$) with the Constructive Thinking Scales of Emotional Coping and Negative Thinking ($r = .28$).

Satisfaction with Health is directly correlated at the .05 level with Global Constructive Thinking ($r = .21$) and inversely with the Constructive Thinking Scales of Categorical Thinking, ($r = -.28$) Superstitious Thinking, ($r = -.26$) and Negative Thinking ($r = -.28$). In conclusion, this hypothesis is supported for Emotional Coping and Negative Thinking on physical health.

Table 28 A- Correlation Matrix for Constructive Thinking Variables x Medical History Items (N=92)

Medical History Form	Constructive Thinking						
	Constructive Thinking	Emotional Coping	Behavioral Coping	Categorical Thinking	Superstitious	Naive Optimism	Negative Thinking
Psychological Symptoms	-.27*	-.43***	-.06	.14	.38***	.13	.35***
Accidents	-.03	-.18	.07	-.03	.08	.10	.16
Physical Symptoms	-.15	-.29**	-.08	.06	.18	.04	.28**
Major Illnesses	-.13	-.11	-.05	.12	.23*	.11	.19
Satisfaction With Health	.21*	.12	.13	-.28**	-.26*	-.14	-.28**
Mean	102.82	29.54	49.96	23.26	16.52	24.20	22.73
Standard Deviation	9.14	5.51	4.63	4.21	3.96	4.49	4.78

* p < .05
 ** p < .01
 *** p < .001

H_{4c}:

There is a significant interaction of stress and constructive thinking on physical health.

A significant interaction (.01 level) was found between Total Stress and Superstitious Thinking on Satisfaction with Health. The interaction was explored by examining the regression of Satisfaction with Health on Total Stress in the upper and lower third of the subjects on Superstitious Thinking. It can be seen in Table 28B and Figure 4 that subjects low in Superstitious Thinking exhibit a decrease in Satisfaction with Health as a function of increasing stress, whereas the reverse is true for subjects high in Superstitious Thinking. Similar interactions significant at the .01 level were also found for Administrative and Interpersonal Stress.

A significant interaction (.01 level) was also found for Total Stress and Emotional Coping on Physical Symptoms. The interaction was explored by examining the regression of Physical Symptoms on Total Stress in the upper and lower third of the subjects on Emotional Coping. It can be seen in Table 28C and Figure 5 that subjects low in Emotional Coping exhibit a decrease in Physical Symptoms as a function of increasing stress, whereas the reverse is true for subjects high in Emotional Coping. A similar interaction significant at the .01 level was also found for Administrative Stress. The interaction of Interpersonal Stress was not significant at the .01 level.

Table 28 B

Exploration of Significant Interactions with Total Stress

Interaction	N	Cut-off Score	r	Level of Signif.	b	c
Stress x Superstitious Thinking = Med. 59 (Satisfaction with Health)						
Low Superstitious Thinking	34	≤ 27	-.29	.30	-.004	5.07
High Superstitious Thinking	36	≥ 32	.45	.01	.006	2.14

Note: b = slope, c = y intercept

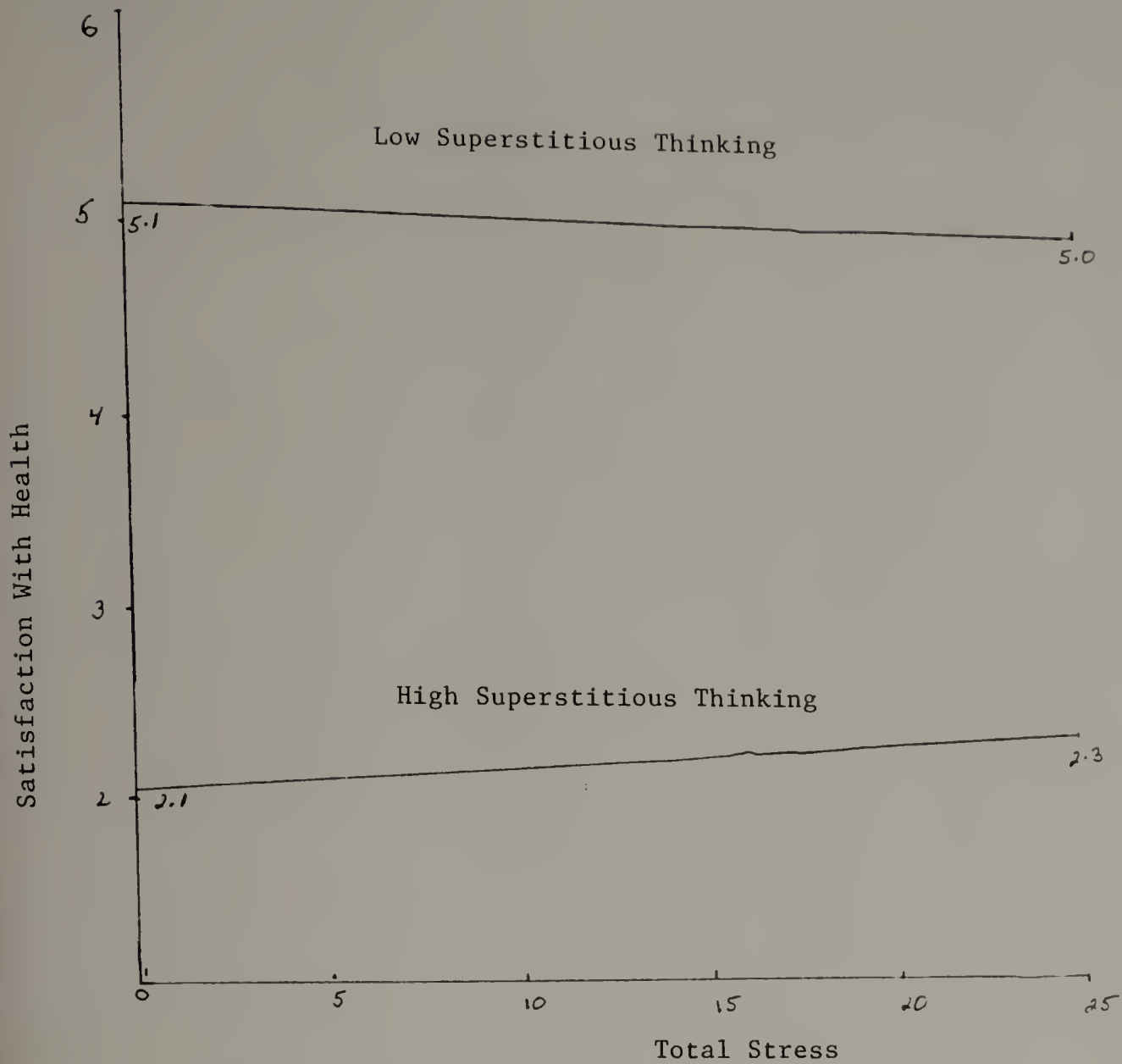


Figure 4

Total Stress x Superstitious Thinking = Med 59 (Satisfaction with Health)

Low Superstitious Thinking, $r = -.29$, sig. $.30$, $b = -.004$, $C_0 = 5.07$,
 $C_{25} = 4.97$

High Superstitious Thinking, $r = .45$, sig. $.01$, $b = .006$, $C_0 = 2.14$,
 $C_{25} = 2.29$

Table 28 C

Exploration of Significant Interactions with Total Stress

Interaction	N	Cut-off Score	r	Level of Signif.	b	c
Total Stress + Emotional Coping = Physical Symptoms						
Low Emotional Coping	34	≤ 27	-.22	.22	-.02	47.41
High Emotional Coping	36	≥ 32	.42	.01	.03	30.99

Note: b = slope, c = y intercept

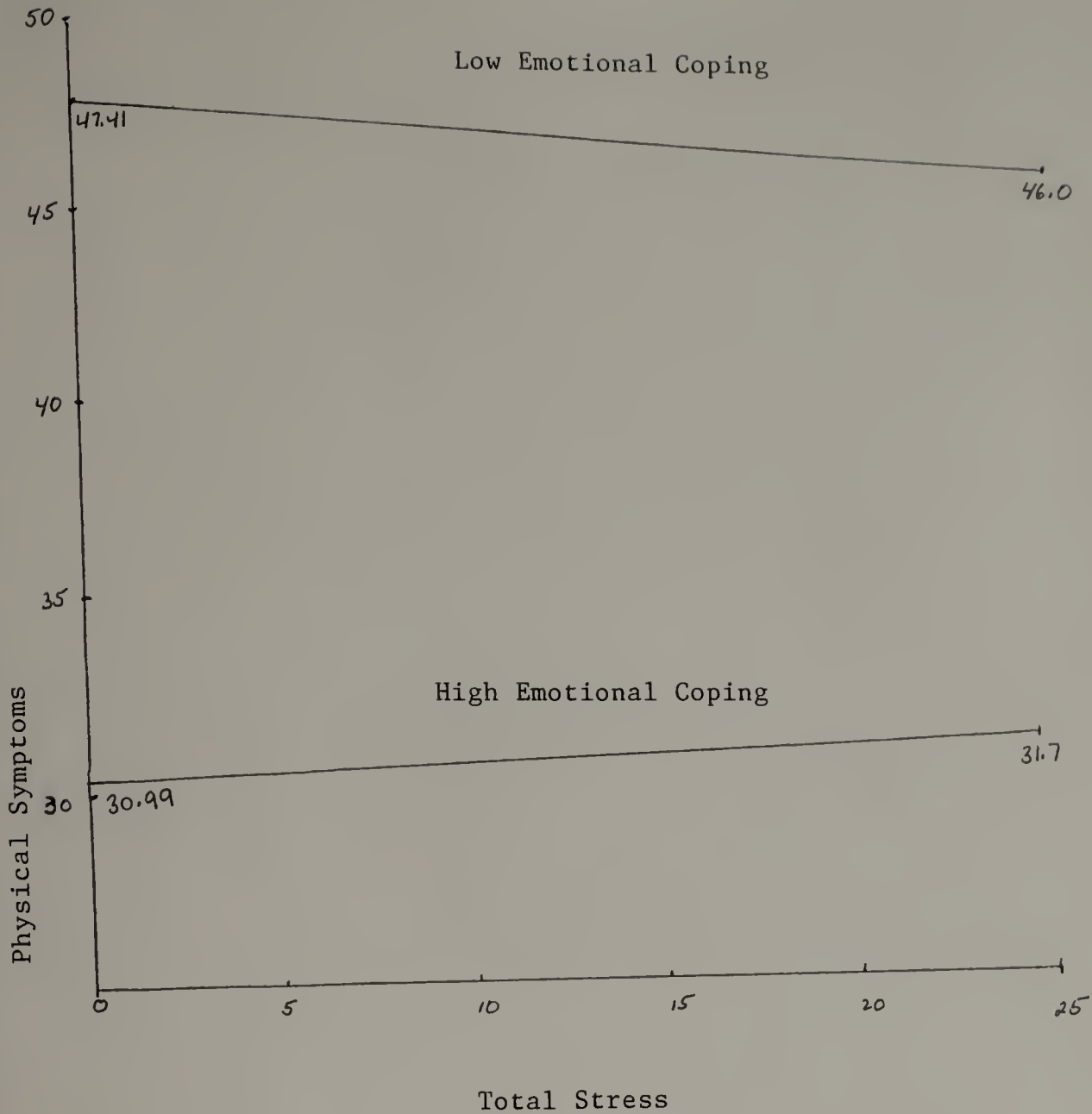


Figure 5

Total Stress x Emotional Coping = Total Physical Health

Low Emotional Coping (N = 34, ≤ 27), $r = .22$, sig. $.22$, $b = -.02$,

$C_0 = 47.41$, $C_{25} = 46.91$

High Emotional Coping (N = 36, ≥ 32), $r = .42$, sig. $.01$, $b = .03$,

$C_0 = 30.99$, $C_{25} = 31.74$

CHAPTER FIVE

SUMMARY, DISCUSSION AND CONCLUSIONS

There continues to be a concerted effort by researchers to discover more precisely how stress affects people's health. This search will undoubtedly continue for years ahead as it has in the past. This research centered on the occupational stimuli of the Public School Administrator's world, how these stimuli contributed to his/her perceptions of stress and what relationship existed, if any, among stress factors and coping ability.

Summary

The purpose of this study was to identify the perceptions Public School Administrators have concerning the sources of their occupational stress. More specifically, it investigated the structure of stress by examining the kinds of events that were reported to produce stress. It looked at the five "factors" of the Oregon School Administrators Stress Survey to determine if in fact, five factors exist and determine the actual factor structure of the potential stressors, termed load.

It was the purpose of this study to examine the effect of load, sensitivity, and stress on success on the job, emotional health, and physical health.

It was also the purpose to examine the effect of constructive thinking on success on the job, emotional health, and physical health and to examine the combined effects of constructive thinking and load or sensitivity or stress or success on the job, emotional health, and physical health.

The results can serve to help the Public School Administrator in coping more effectively with sources of occupational stress.

The study was conducted during the fall of 1987 and spring of 1988.

The sample population consisted of 150 Public School Administrators in Southeast Massachusetts. Each Public School Administrator was sent a packet that included a cover letter, the Oregon School Administrators Stress Survey, the Constructive Thinking Inventory, the Primary Emotions and Traits Scale, a medical checklist and a demographic data sheet.

One hundred five Public School Administrators responded with completed forms.

Of the 92 subjects who reported demographic data, 72 (78%) were male and 20 (22%) were female. One (1%) of the subjects reported one to five years experience in the field of education, 6 (7%) reported six to 12 years experience. In response to being asked to

report the number of years of service as a Public School Administrator, 31 (34%) had one to five years of service, 27 (30%) had six to 12 years of service, and 34 (36%) had 13 or more years of service. Seventeen (19%) of the subjects were Superintendents, 18 (20%) were High School Principals, 17 (17%) were Junior High or Middle School Principals, and 40 (44%) were Elementary School Principals.

Elementary School Principals reported the following items to be most stressful in descending order and, with the mean stress indicated in parentheses: "having to comply with state, federal, and other bureaucratic rules and regulations" (10.15), "having a workload that I cannot finish during the normal workday" (8.75), "imposing high expectations on myself" (8.68), "having to make decisions that affect the lives of individual people that I know" (7.88), "having time consuming meetings" (7.86) and "having my work interrupted by telephone calls (7.52).

Junior High School Principals reported the following items to be most stressful in descending order and, with the mean stress indicated in parentheses: "having a workload that I cannot finish during the normal workday" (11.18), "evaluating staff members' performance" (10.12), "having time-consuming meetings" (9.82), "having my work interrupted by telephone calls" (9.65), "imposing high expectations on myself" (9.53) and "having to supervise and coordinate the tasks of many people" (9.35).

High School Principals reported the following items to be most stressful in descending order and, with the mean stress indicated in parentheses: "having a workload that I cannot finish during the normal workday" (10.72), "having to comply with state, federal, and other bureaucratic rules and regulations" (10.67), "having time-consuming meetings" (9.89), "having my work interrupted by telephone calls" (9.50), and "having to make decisions that affect the lives of individual people that I know" (8.78).

Superintendents reported the following items to be most stressful, in descending order and with the mean stress indicated in parentheses: "imposing high expectations on myself" (9.71), "having to comply with state, federal, and other bureaucratic rules and regulations" (9.59), "having a workload that I cannot finish during the normal workday" (8.12), "having time consuming meetings" (8.12), "writing memos, letters and other communications" (7.94), and "having to complete reports and other paperwork by a deadline" (7.65).

The data suggests that the Superintendents' job classification presents less perceived stress than that of the Public School Principal at all three levels.

As stated, one of the major purposes of this study was to investigate the structure of stress by examining the kinds of events that produce stress. It was to look at the five "factors" of the Oregon School Administrators Stress Survey to determine if in fact, five

factors exist and to determine the actual factor structure of the potential stressors, termed load.

First, a five factor confirmatory factor analysis, with rotation, was done for load and sensitivity to determine whether the five divisions from the Oregon Administrative Survey would appear as factors. Only two interpretable factors were evident, corresponding to administrative and interpersonal stress. This was true for both the analyses of load and stress. A two factor analysis with varimax rotation was next done. Scales for measuring administrative stress and interpersonal stress were constructed by selecting items that had loadings of greater than .30 on the same factor for both load and stress.

In addition to the descriptive data, a one-way analysis of variance based on subgroup means was computed to determine if the differences of perceived levels of stress according to job classification were statistically different. Significant differences were found under Administrative Load and under Administrative Stress.

The results of testing the hypotheses of this study were presented in Chapter IV. The following is a summary of the major findings.

H₁:

There is a significant negative relation between stress and constructive thinking.

The Emotional Coping Scale is significantly correlated with Total Stress ($r = -.25^*$). Administrators with higher scores on Emotional Coping report experiencing less stress than those who obtain lower scores on Emotional Coping. The results are weaker ($r = -.14$) and nonsignificant for Administrative Stress and stronger ($r = -.31^{**}$) and highly significant for Interpersonal Stress. There are no significant correlations of the CTI scales with Administrative Stress. Interpersonal Stress, on the other hand, is not only significantly correlated with Emotional Coping but also with Global Constructive Thinking ($r = -.22^*$). Thus the results for Total Stress can be accounted for by the items that refer to interpersonal stress. In conclusion, the hypothesis is supported for Interpersonal Stress, but not for Administrative Stress. None of the CTI scales are related to Administrative Load, but several are to Administrative Sensitivity. Thus the frequency of occurrence of the potentially stressful administrative tasks appears to be unrelated to Constructive Thinking. Not surprisingly, however, sensitivity to the tasks is inversely associated with Constructive Thinking. The situation is different for the interpersonal items. The degree to which an administrator is exposed to these potential stressors is associated with an Administrator's Constructive Thinking. The better the Administrator's Constructive Thinking, the less he or she is exposed to potentially stressful interpersonal events.

H 2a:

There is a significant negative relation between stress and success on the job.

Success on the Job was looked at by dividing it into two parts. Objective Success, which contains the items referring to Type of Public School Administrator, Education (highest degree earned), and Current Salary. Subjective Success contains the items referring to job success whereby the subject rates his job success, how he feels other administrators would consider him at his job, and how he feels teachers would consider him at his job.

There are no significant correlations of Total Stress or Administrative Stress with Subjective Success on Objective Success.

Administrative Load is correlated, $r = .20^*$, at the .05 level with Success on the Job (when another administrator rates the subject) and correlated $r = .27^{**}$ at the .01 level when a (teacher rates) the subject.

Interpersonal Stress is correlated, $r = -.23^*$, at the .05 level of significance with Success on the Job when the subject rates himself. Interpersonal Load and Interpersonal Sensitivity ($r = -.22$) are also marginally correlated ($r = -.22$) with Success on the Job when the subject rates himself. In conclusion, the hypothesis is supported for Interpersonal Stress on two measures of self rated success, but is not supported for Total Stress nor Administrative Stress.

H2b:

There is a significant positive relation between constructive thinking and success on the job.

A significant relationship exists between ($r = .20^*, .21^*$) between Constructive Thinking and Success on the Job when the subject rates himself and when subject rates another administrator's views.

Marginal relationships also exist between Success on the Job and the CTI scales of Emotional Coping, Behavioral Coping, and Superstitious Thinking.

Subjective Success is significantly correlated with the CTI scales of Emotional Coping and Behavioral Coping. Objective Success presents no significant correlations. In conclusion, the hypothesis is supported for the measures of self-rated success, but not for the more objective index of success.

H2c:

There is a significant interaction between stress and constructive thinking as it relates to success on the job.

The Regression Analysis found no significant interactions. Thus, the hypothesis is not supported.

H3a:

There is a significant negative relation between stress and emotional health.

Non-Neuroticism is significantly negatively correlated with Total Stress: the greater the stress, the greater the neuroticism.

Non-Neuroticism is also negatively correlated with Total Load and Total Sensitivity.

Also of interest are significant correlations of Pets Scales with Total Load and Administrative Load. Non-neuroticism, Happy vs. Depressed, Vigorous vs. Fatigued, Integrated vs. Disorganized and Emotional Arousal are all weakly correlated ($r = .20, -.21$) with Total Load. The greater the total load, the more the administrators report that they feel happy, integrated, vigorous and aroused. On the other hand, they also obtain more neurotic scores. A high Administrative Load is uniformly associated with favorable adjustment, whereas high Interpersonal Load is associated with neuroticism. Not surprisingly, sensitivity and stress are always positively associated with maladjustment.

H3b:

There is a significant positive relation between constructive thinking and emotional health.

Constructive Thinking is correlated broadly with Emotional Health. There is an even stronger relationship found here than the relationship between Constructive Thinking and Stress.

All scales of the Constructive Thinking Inventory, excluding Naive Optimism are significantly correlated with at least eight out of thirteen PETS variables and, in some cases, twelve out of thirteen variables.

The critical variables for the Primary Emotions and Traits Scale in testing our hypothesis are: Positive vs. Negative State, Non-neuroticism, and the three negative emotions, Depression, Anxiety and Anger. All of these variables are highly significantly correlated (.001 level) in the expected direction with several of the Constructive Thinking Scales. In conclusion, the hypothesis is supported.

H3c:

There is a significant interaction between stress and constructive thinking as it relates to emotional health.

A significant interaction was found (.01 level) between Interpersonal Stress and Superstitious Thinking with Happy vs. Depressed as the dependent variable. In order to examine the form of this interaction, Happy - Depressed was regressed separately on

Interpersonal Stress for subjects in the upper and lower thirds of the distribution on Superstitious Thinking. Not surprisingly, subjects who are low in Superstitious Thinking are less depressed, overall, than subjects who are high on Superstitious Thinking. However, whereas the former exhibits an increase in depression as a function of increasing interpersonal stress, the latter exhibits a decrease.

H4a:

There is a significant negative relation between stress and physical health.

The only correlations of Stress with Physical Health that are of interest are: Drug/Food Problems x Total Stress ($r = -.18$), and Drug/Food Problems x Administrative Stress ($r = .17$) which all fall slightly short of significance at the .05 level. In conclusion, this hypothesis is not supported for either Total Stress, Administrative Stress, or Interpersonal Stress on physical health.

H4b:

There is a significant positive relation between constructive thinking and physical health.

Physical Symptoms is significantly correlated at the .01 level ($r = -.29$) with the Constructive Thinking Scales of Emotional Coping and Negative Thinking. ($r = .28$)

Satisfaction with Health is directly correlated at the .05 level with Global Constructive Thinking ($r=.21$) and inversely with the Constructive Thinking Scales of Categorical Thinking ($r=-.28$) Superstitious Thinking ($r=-.26$), and Negative Thinking ($r=-.28$). In conclusion, this hypothesis is supported for Emotional Coping and Negative Thinking on physical health.

H_{4c}:

There is a significant interaction of stress and constructive thinking on physical health.

A significant interaction (.01 level) was found between Total Stress and Superstitious Thinking on Satisfaction with Health. The interaction was explored by examining the regression of Satisfaction with Health on Total Stress in the upper and lower third of the subjects on Superstitious Thinking. Subjects low in Superstitious Thinking exhibit a decrease in Satisfaction with Health as a function of increasing stress, whereas the reverse is true for subjects high in Superstitious Thinking. Similar interactions significant at the .01 level were also found for Administrative and Interpersonal Stress.

A significant interaction (.01 level) was also found for Total Stress and Emotional Coping on Physical Symptoms. The interaction was explored by examining the regression of Physical Symptoms on Total Stress in the upper and lower third of the subjects on Emotional

Coping. Subjects low in Emotional Coping exhibit a decrease in Physical Symptoms as a function of increasing stress, whereas the reverse is true for subjects high in Emotional Coping. A similar interaction significant at the .01 level was also found for Administrative Stress. The interaction of Interpersonal Stress was not significant at the .01 level.

Discussion

The results revealed new insights related to four areas of interest. They are:

- a. Sources of Stress
- b. Interpersonal Stress
- c. Intrapersonal Conflict
- d. Implications for the Hiring of Administrators

Sources of Stress

The study shows problems and potential stressors that school administrators face today are in sharp contrast to those confronted by school administrators just a decade ago. Demands are thrust upon the administrator from many sectors, public as well as private, each of whom consider their demands more significant than any others; all of them a potential stress factor.

Respondents noted that more recently we have witnessed changes brought about by the competency testing movement, the back-to-basics movement, the energy crisis, federal programs, and a number of other unexpected changes. Declining enrollment and reduction of central office staff (mainly supervisors and curriculum specialists) have placed greater emphasis on the administrator's role as instructional and curriculum leader, but at the same time, both educational and fiscal pressures are pushing the administrator's role more in the direction of educational leader. The increasing daily constraints, including parental complaints, association demands, and all sorts of bandwagons, are growing and becoming more crucial, both legally and fiscally.

As we look at implications, these demands present for administrators' role changes in the coming years, it becomes evident that administrators will have more qualifications, have greater responsibility in teacher supervision, be less diverse, become more sophisticated in collective bargaining, and work more effectively with such pressures as managing student behavior and dismissing incompetent staff, all of which tend to generate a condition of stress.

Interpersonal Stress

Interpersonal relations were reported far more often (Confirmatory Analysis of Stress Factors Chapter IV) than were Administrative factors as a source of stress.

Instructional improvement, curriculum design, student personnel administration, collective bargaining, community relations, and meeting legal problems are but a few of the school administrator's responsibilities and challenges. Solving problems in these and other areas requires both knowledge of principles and knowledge of how to work with people, because essentially, most of the problems facing today's administrators are people problems.

Stress from interpersonal relations primarily results from conflict with people both inside and outside the organization. For school administrators these people include parents, staff, students, community members and superiors.

One of the administrator's main roles is that of disturbance handler. This role deals many times with involuntary situations and changes that are beyond the manager's control. An unforeseen event may generate a crisis. The administrator must act out of necessity because the pressures brought to bear upon him/her are too great to ignore. Many of the school administrators interpersonal relations result from his/her role as a disturbance handler.

The nature of education and the type of relationships that result represent other sources of stress in the school administrator's life. Education provides a service which deals directly and intimately with people. Since many of the intimate relationships are with students, and these same students are their parents most important possessions, parents are naturally concerned with how the school

treats them. This leads to an emotional situation as most parent/student/administrator relationships are created out of negative situations.

Other sources of reported stress in interpersonal relations result from a variety of barriers that may exist between two or more people. Cultural barriers, generation gaps, differences in frames of reference can generate barriers that lead to interpersonal conflict.

Intrapersonal Conflict

Superintendents and High School Principals reported intrapersonal conflict as a source of stress at higher levels than did other administrators.

Intrapersonal Conflicts represent sources of stress resulting from the conflicting demands between job tasks and individual beliefs or goals. For example, if a person is a perfectionist, he/she believes his/her work must be without error. If he/she does not have the skill to perform the task without error, conflict is created.

According to Lazarus, (1966), intrapersonal conflict results from two incompatible motives whose indicated behaviors are contradictory. He further states that once this conflict is recognized, appraisal of threat is inevitable since one or both of the goals or motives is endangered because it is incompatible with the other. The only other alternatives are to give up one of the incompatible goals or reduce the threat by self-deception or defense, thus changing the

individual's cognition of the situation. The stronger the motives or beliefs, the greater the threat or stress will be on the individual. For example, the administrator who wishes to be liked by everyone but must dismiss an employee is a perfect example of an individual with two incompatible goals that can create significant amounts of stress.

Implications for the Hiring of Administrators

Many administrators are not trained to deal with the demands they face today. Administration includes both a task dimension and a human dimension; that is, there is the work of the organization which must be done if the organization is to be successful; and there are the human beings for whom the organization provides varying degrees of satisfaction and upon whom it must rely in order that the work will be done. An effective administrator needs to understand both dimensions and develop the necessary competence in both. Many are competent in the task dimension, but that alone is not sufficient. If administrators are to function responsibly in providing educational programs which are effective in relation to needs, if they are to help appreciably in strengthening the staff, if they are to exercise strong leadership, they need to develop an understanding of human behavior together with the requisite competence in interpersonal relationships.

The research presented in Chapter II suggests that a relationship exists between reported stress factors and coping ability

scores (French and Caplan, 1970; Alschuler, 1980). The impact of an external stressor is not the direct consequence of the external event or events that are experienced, but of how a person perceives and copes with the events. An event that is bothersome or stressful to one person is to another an engaging challenge that makes life interesting. According to Epstein, (1987) Constructive Thinking is a general way of interpreting and coping with life events in a manner that minimizes stress.

Bad Constructive Thinking can increase the stressful reaction to a situation. In this case, the individual focuses on the negative aspects of a situation and fails to see the situation as an interesting challenge. With this type of thinking, often times the worst will come out of the situation, increasing stress.

On the other hand, good Constructive Thinking can decrease the stressful reaction to a situation. In this case, the individual perceives a difficult task as a challenge and uses this way of thinking to minimize stress. The results of this study corroborates prior research by indicating that a negative relationship exists between the amount of Interpersonal Stress a person experiences in everyday life and Constructive Thinking. More specifically, people with poor Constructive Thinking scores reported experiencing more stress in life than people with good Constructive Thinking scores because they cope less effectively with stress.

Previous studies indicate that the primary symptoms of stress associated with job performance are feelings of tension, frustration, and isolation; feelings of depression in the form of restlessness, boredom, or burnout, and doubts about one's adequacy and ability to perform (Cardinell & Maples, 1980; Ivancevich & Matteson, 1980).

According to Gmelch and Swent (1981) the administrator accepts too many responsibilities that evolve into overdemanding roles; i.e. controller, motivator, persuader, disciplinarian, firefighter, preserver of the culture, specialist, and parent surrogate. The administrator becomes the role prisoner, increasing stress and often times causing the administrator to be less effective at his/her job.

School administrators, whether they are superintendents of large districts or principals of small schools, all face stress at one time or another in their jobs. Their ability or failure to cope with stress may reverberate throughout an entire school system, affecting teachers as well as students. Yet, administrators often consider stress as chronic, a fact of life, an occupational hazard to be endured with no chance of identifying or changing its causes and effects. The result is personal suffering and job ineffectiveness.

According to Reed, (1975) stress produces emotional changes when it exceeds the individual's tolerance range. Stress causes people to look for solutions to their problems, and if one alternative is blocked, they may seek another. The outcome may then be very

productive (Tanner, 1976). However, if the anxiety increases until the individual is faced with excessive stress, solutions may be destructive rather than productive.

The results of this study indicate that although significant negative relations do exist between stress and many of the various scales of emotional health, stress on the job didn't account for much of the emotional problems. The reason for this may be due to the fact that stress can come from many places, job stress is only one source.

Research conducted over the years has produced a growing body of evidence that stress is a causal factor in the poor health of many individuals. The body's response to stress has been claimed as a major factor in the etiology of several diseases (Benson, 1974). According to Cardinell & Maples (1980), minor symptoms such as constant fatigue, frequent headaches, unexplained weight loss, gastrointestinal problems, and skin rashes are common in individuals reacting to stress. More serious complications such as high blood pressure, cardiovascular difficulties, ulcers, shortness of breath, and colitis may require immediate and, often, prolonged medical attention.

The results of this study do not support the hypothesis relating stress with physical health for either Total Stress, Administrative Stress, or Interpersonal Stress.

According to Epstein (1987), Constructive Thinking is closely related to success in work, love, social relations, mental health and physical health.

According to Epstein's cognitive experiential Self-theory, it is the experiential conceptual system, not the rational conceptual system, that is mainly responsible for success in everyday living. According to Freud, success in living means being able to work and love. To this, Adler added success in social relationships. Given modern knowledge about the relationship between cognition, emotions, stress and the immune system, Epstein (1987), believes two other "achievements" can be added, namely maintaining mental and physical health. Epstein makes it clear that he does not imply that mental and physical health are completely a consequence of one's cognitions. He goes on to say that noncognitive factors, such as a person's genetic endowment and exposure to certain environmental stressors and pathogenic agents can play a critical role in a person's physical and mental health. According to Epstein (1987), there is good evidence that suggests that how one leads one's life, which means to a large extent how one interprets and copes with events, is a significant influence on the amount of stress one experiences, which has an effect on mental and physical health.

Coleman (1987) states that optimism or constructive type thinking can pay great dividends as wide ranging as health,

longevity and job success. According to Scheier, optimists handle stress better than do pessimists.

Seligman (1986) found that pessimists tend to construe bad events such as flunking an exam or giving a party that flops as resulting from a personal deficit that will plague them forever in everything they do. Others see the same setbacks more optimistically, as being due to mistakes that can be remedied. They feel they can make the necessary changes.

Seligman maintains that Explanatory Style plays an important role in physical health. He goes on to say that when people don't accept bad events uncritically but ask why, the answer or explanation for the event affects what they expect about the future and determines the extent to which they will be helpless or depressed.

The results of this study showed that a relationship exists between Constructive Thinking and success on the job as determined by the the subject's rating of himself and of how he or she believes other administrators would judge him or her. When success on the job is divided into Subjective Success and Objective Success, Subjective Success shows very low significant correlations while Objective Success presents no significant findings.

Constructive Thinking is correlated strongly with Emotional Health. There is an even stronger relationship found here than the relationship between Constructive Thinking and Stress.

This study found that Physical Health is significantly correlated with the Constructive Thinking Scales of Emotional Coping and Negative Thinking.

Further results of this study found no significant interactions between stress and Constructive Thinking as it relates to success on the job. A significant interaction was found between stress and Constructive Thinking as it relates to emotional health. The interaction was found between Interpersonal Stress and Superstitious Thinking with Happy vs. Depressed as the dependent Variable. Not surprisingly, subjects who are low in Superstitious Thinking are much less depressed, overall, than subjects who are high on Superstitious Thinking. However, whereas the former exhibits an increase in depression as a function of increasing Interpersonal Stress, the latter, strongly exhibit a decrease.

Results of this study also found a significant interaction between stress and Constructive Thinking as it relates to physical health. A significant interaction was found for Total Stress and Emotional Coping on physical symptoms. Subjects low in Emotional Coping exhibit a decrease in physical symptoms as a function of increasing stress, whereas the reverse is true for subjects high in Emotional Coping.

Conclusions

The subject of stress and its relationship to Public School Administration is an area of growing concern.

Administrators must learn to accept the fact that administration has its limitations. Changes cannot be made overnight and some changes can never be made. Knowing what can be done within a given amount of time reduces the uncertainty of tasks and stressfulness of the job.

Programs emphasizing realistic self-expectations and personal goal setting, life planning and the better understanding of how personal beliefs and Constructive Thinking influence behavior performance are necessary and appropriate, as are programs to help the administrator cope with perceived stress.

The need for the aforementioned programs can be categorized into two time periods in the professional development of the administrator. The first is continuous personal and professional development. This area includes techniques for instructions which assist the administrator after he/she is involved in his/her position. Administrators need continuous updating or renewal of management skills and on occasion, skills that help to effectively cope with new situations.

The second time period is during "administrative preparation". Present educational administrative programs need to be examined to determine voids in program requirements which fail to prepare prospective administrators to handle typical everyday stressful situations.

It seems only natural that if we are concerned with the health of our school administrators and the well-being of our schools, both training institutions and school districts must accept the responsibility of better preparing administrators to manage the pressures of their job. The suggested strategies for handling the occupational stressors more effectively need not result in additional courses of study in administration. Rather, these administrative competencies should be incorporated or re-emphasized within existing curricula or professional development inservice programs.

Recommendations for Further Study

Based upon the review of the literature related to this study, the responses to the questionnaires, and the analysis of the data, the following recommendations are suggested:

1. It is recommended that a longitudinal study be conducted to investigate the long-term effects of occupational stress upon the

Public School Administrator to determine if felt stress adversely affects the administrator's health or ability to function in his role.

2. It is recommended that the effects of occupational stress in Private School Administrative positions relative to health and job efficiency be investigated. The purpose is to determine if similar responses occur for Private School Administrators as presented in this study.

3. Future research, including physiological and psychological studies, needs to be done. It is suggested the investigators consider field observations and ethnographic studies to more accurately and objectively view the factors involved in the determination of administrative stress. Continued efforts must be made to search beyond the correlation studies to causal relationships.

Appendix A Data Sheet

Please complete the following requested information. Anonymity is guaranteed and only group data will be used in the interpretation of the findings of this study. Place a check mark () next to each item that best describes you.

1. Sex: Male _____ Female _____
2. Age: 21-30 ___ 31-45 ___ 46-55 ___ 55+ ___
3. Marital Status: Single _____ Married _____
Separated/Divorced _____ Widowed _____
4. Number of years experience in field of education:
1-5 years _____ 6-12 years _____ 13+ years _____
5. Number of years of service as a Public School Administrator:
1-5 years _____ 6-12 years _____ 13+ years _____
6. Type of Public School Administrator:
Superintendent _____ Assistant Superintendent _____
High School Principal _____ Elementary School Principal _____
Junior High or Middle School Principal _____
7. Education - highest degree earned:
Bachelor's _____ Master's _____
CAGS _____ Doctorate _____
8. Current Salary:
\$20,000 - \$30,000 _____ \$31,000 - \$40,000 _____
\$41,000 - \$50,000 _____ \$50,000 + _____
9. Using the scale below, please rate how successful you consider yourself at your job.

1	2	3	4	5
not successful at all		somewhat successful	very successful	
10. Using the code below, please rate how successful other administrators would consider you at your job.

1	2	3	4	5
not successful at all		somewhat successful	very successful	
11. Using the code below, please rate how successful teachers would consider you at your job.

1	2	3	4	5
not successful at all		somewhat successful	very successful	

Appendix B
Oregon School Administrators Stress Survey

School Administrators have identified the following 35 work-related situations as sources of concern. It's possible that some of these situations bother you more than others. How frequently does each situation occur and how much does it bother you? Please enter your responses on the opscan sheet provided. If your response is NA please place a () mark to the left of the appropriate number on the opscan sheet. Odd items are for frequency. Even numbers are for intensity.

Administrative Constraints

	Odd Items	Not Applicable	1 Rarely or Never	2	3	4	5
				Occasionally		Frequently	
	Even Items	Not Applicable	Not at All	Somewhat		Very Much	

Having my work interrupted by telephone calls.

1. How frequently does that occur?	NA	1	2	3	4	5
2. How much does that bother you?	NA	1	2	3	4	5

Having my work interrupted by staff members who want to talk?

3. How frequently does that occur?	NA	1	2	3	4	5
4. How much it bother you?	NA	1	2	3	4	5

Writing memos, letters and other communications.

5. How frequently?	NA	1	2	3	4	5
6. How bothersome?	NA	1	2	3	4	5

Having a workload that I cannot finish during the normal workday.

7. How frequently?	NA	1	2	3	4	5
8. How bothersome?	NA	1	2	3	4	5

Having to comply with state, federal, and other bureaucratic rules and regulations.

9. How frequently?	NA	1	2	3	4	5
10. How bothersome?	NA	1	2	3	4	5

Having time-consuming meetings?

11. How frequently?	NA	1	2	3	4	5
12. How bothersome?	NA	1	2	3	4	5

Having to complete reports and other paperwork by a deadline?

13. How frequently?	NA	1	2	3	4	5
14. How bothersome?	NA	1	2	3	4	5

Administrative Responsibility

	1	2	3	4	5
Odd Items	Rarely or Never	Occasionally		Frequently	
Even Items	Not at All	Somewhat		Very Much	

Having to supervise and coordinate the tasks of many people.

15. How frequently?	NA	1	2	3	4	5
16. How bothersome?	NA	1	2	3	4	5

Having to speak in front of groups.

17. How frequently?	NA	1	2	3	4	5
18. How bothersome?	NA	1	2	3	4	5

Preparing and allocating budget resources.

19. How frequently?	NA	1	2	3	4	5
20. How bothersome?	NA	1	2	3	4	5

Being involved in the collective bargaining process.

21. How frequently?	NA	1	2	3	4	5
22. How bothersome?	NA	1	2	3	4	5

Evaluating staff members' performance.

23. How frequently?	NA	1	2	3	4	5
24. How bothersome?	NA	1	2	3	4	5

Administering the negotiated contract (grievances, interpretations, etc.).

25. How frequently?	NA	1	2	3	4	5
26. How bothersome?	NA	1	2	3	4	5

Trying to gain public approval and/or financial support for school programs.

27. How frequently?	NA	1	2	3	4	5
28. How bothersome?	NA	1	2	3	4	5

Interpersonal Relations

		1	2	3	4	5
Odd Items	Not Applicable	Rarely or Never	Occasionally		Frequently	
Even Items	Not Applicable	Not at All	Somewhat		Very Much	

Staff members not understanding my goals and expectations.

29. How frequently?	NA	1	2	3	4	5
30. How bothersome?	NA	1	2	3	4	5

Trying to resolve differences with superiors.

31. How frequently?	NA	1	2	3	4	5
32. How bothersome?	NA	1	2	3	4	5

Trying to resolve differences between or among students.

33. How frequently?	NA	1	2	3	4	5
34. How bothersome?	NA	1	2	3	4	5

Trying to resolve differences between or among staff members.

35. How frequently?	NA	1	2	3	4	5
36. How bothersome?	NA	1	2	3	4	5

Handling student discipline problems.

37. How frequently?	NA	1	2	3	4	5
38. How bothersome?	NA	1	2	3	4	5

Trying to resolve conflict between parents and teachers in the school system.

39. How frequently?	NA	1	2	3	4	5
40. How bothersome?	NA	1	2	3	4	5

Trying to influence my immediate supervisor's actions and decisions that affect me.

41. How frequently?	NA	1	2	3	4	5
42. How bothersome?	NA	1	2	3	4	5

Intrapersonal Conflicts

	1	2	3	4	5
Odd Items	Rarely or Never	Occasionally	Frequently		
Even Items	Not at All	Somewhat		Very Much	
	Not Applicable				

Having demands placed on me that exceed my training.

43. How frequently?	NA	1	2	3	4	5
44. How bothersome?	NA	1	2	3	4	5

Not having information needed to carry out my job properly.

45. How frequently?	NA	1	2	3	4	5
46. How bothersome?	NA	1	2	3	4	5

Imposing high expectations on myself.

47. How frequently?	NA	1	2	3	4	5
48. How bothersome?	NA	1	2	3	4	5

Attempting to meet social expectations (housing, flubs, friends, etc.).

49. How frequently?	NA	1	2	3	4	5
50. How bothersome?	NA	1	2	3	4	5

Having to make decisions that affect the lives of individual people that I know (colleagues, staff members, students, etc.).

51. How frequently?	NA	1	2	3	4	5
52. How bothersome?	NA	1	2	3	4	5

Having too little authority to carry out responsibilities assigned to me.

53. How frequently?	NA	1	2	3	4	5
54. How bothersome?	NA	1	2	3	4	5

Trying to influence my immediate superior's actions and decisions that affect me.

55. How frequently?	NA	1	2	3	4	5
56. How bothersome?	NA	1	2	3	4	5

Role Expectations

	Odd Items	Not Applicable	1 Rarely or Never	2	3	4	5
				Occasionally		Frequently	
	Even Items	Not Applicable	Not at All	Somewhat		Very Much	

Being asked to satisfy the conflicting demands of those who have authority over me.

57. How frequently?	NA	1	2	3	4	5
58. How bothersome?	NA	1	2	3	4	5

Being prepared for better job performance over and above what I think is reasonable.

59. How frequently?	NA	1	2	3	4	5
60. How bothersome?	NA	1	2	3	4	5

Not knowing what my supervisor thinks of me, or how he/she evaluates my performance.

61. How frequently?	NA	1	2	3	4	5
62. How bothersome?	NA	1	2	3	4	5

Appendix C Constructive Thinking Inventory

The following are some statements on feelings, beliefs, and behavior. Score "1" if the statement is definitely false; "5" if it is definitely true. A rating of "2" will indicate the statement is mainly false; a rating of "4" that it is mainly true. Use "3" only if you cannot decide if the item is mainly true or false.

Be honest, but do not spend too much time over any one statement. First impressions are as accurate as any. Please do not mark this questionnaire. Write all your responses on the answer sheet provided, using a #2 pencil.

	1	2	3	4	5
	Definitely False	Mostly False	Undecided or Neither False nor True	Mostly True	Definitely True
<hr/>					
1. I worry a great deal about what other people think of me.					
2. I am the kind of person who takes action rather than just thinks or complains about a situation.					
3. Most people regard me as a tolerant and forgiving person.					
4. I have found that talking about successes that I am looking forward to can keep them from happening.					
5. When I have learned that someone I love loves me, it has made me feel like a wonderful person and that I can accomplish whatever I want.					
6. I have learned from bitter experience that most people are not trustworthy.					
7. When I am faced with a difficult task, I think encouraging thoughts that help me to do my best.					
8. I have washed my hands before eating at least once in the past month.					
9. If I said something foolish when I spoke up in a group, I would chalk it up to experience and not worry about it.					
10. I often avoid facing problems.					
<hr/>					
11. I usually feel that it is acceptable for me to do well in some things and not so well in others.					
12. When something bad happens to me, I feel that more bad things are likely to follow.					
13. I think everyone should love their parents.					
14. If I do poorly on an important test, I feel like a total failure and that I will not go very far in life.					
15. I get so distressed when I notice that I am doing poorly in something that it makes me do worse.					
16. The slightest indication of disapproval gets me upset.					
17. If I have something unpleasant to do, I try to make the best of it by thinking in positive terms.					

18. When someone I know is rejected by a person they love, I feel they are inadequate and will never be able to accomplish anything.
 19. I have never seen anyone with blue eyes.
 20. I believe that some people can make me aware of them just by thinking about me.
-
21. I don't get very distressed over the mistakes of others, but try to deal with them in a constructive way.
 22. If I do well on an important test, I feel like a total success and that I will go very far in life.
 23. When I have to be in an unpleasant or boring situation for a while, I keep watching the clock and wishing I were somewhere else.
 24. I think about how I will deal with threatening events ahead of time, but I don't worry needlessly.
 25. I avoid challenges because it hurts too much when I fail.
 26. There are basically two kinds of people in this world, good and bad.
 27. I believe if I think terrible thoughts about someone, it can affect that person's well-being.
 28. When people judge me unfavorably, I tend to think they are right.
 29. When someone I know is loved by a person they love, I feel that they are a wonderful person and can accomplish whatever they want to.
 30. When something unfortunate happens to me, it reminds me of all the other things wrong in my life, which adds to my unhappiness.
-
31. It bothers me when anyone doesn't like me.
 32. I look at challenges not as something to fear, but as an opportunity to test myself and learn.
 33. I think there are many wrong ways, but only one right way, to do almost anything.
 34. I do not believe in any superstitions.
 35. I spend much more time mentally rehearsing my failures than remembering my successes.
 36. I believe that most birds can run faster than they can fly.
 37. If someone I know were accepted at an important job interview, I would think that he or she would always be able to get a good job.
 38. I believe that most people are only interested in themselves.
 39. I don't let little things bother me.
 40. If I were rejected at an important job interview, I would feel very low and think that I would never be able to get a good job.
-

41. I believe that in order to have a good relationship, you have to work on it.
 42. When I am faced with a new situation, I tend to think the worst possible outcome will happen.
 43. I believe in not taking any chances on Friday the 13th.
 44. I believe that people can accomplish anything they want to if they have enough willpower.
 45. I feel that people who wear glasses usually can see better without their glasses.
 46. I tend to dwell more on pleasant than unpleasant incidents from the past.
 47. When unpleasant things happen to me, I don't let them prey on my mind.
 48. When faced with upcoming unpleasant events, I usually carefully think through how I will deal with them.
 49. If I do very poorly on a test, I realize it is only a single test, and it doesn't make me feel generally incompetent.
 50. I tend to classify people as either for me or against me.
-
51. It would not bother me in the least if a black cat crossed my path and I walked under a ladder on the same day.
 52. If I were accepted at an important job interview, I would feel very good and think that I would always be able to get a good job.
 53. My mind sometimes drifts to unpleasant events from the past.
 54. I tend to take things personally.
 55. Although women sometimes wear pants, they do not wear them, on the average, as often as men.
 56. When doing unpleasant chores, I make the best of it by thinking pleasant or interesting thoughts.
 57. When faced with a large amount of work to complete, I tell myself I can never get it done, and feel like giving up.
 58. I try to accept people as they are without judging them.
 59. I sometimes think that if I want something to happen too badly, it will keep it from happening.
 60. I have very definite ideas about how things should be done, and I get distressed when they are not done that way.
-
61. It is so distressing to me to try hard and fail, that I rarely make an all-out effort to do my best.
 62. When someone I love has rejected me, it has made me feel inadequate and that I will never be able to accomplish anything.
 63. I am very sensitive to being made fun of.
 64. When something good happens to me, I believe it is likely to be balanced by something bad.

Appendix D
Primary Emotions and Traits Scale

Instructions: How frequently do you have each of the following feelings? Work rapidly, first impressions are as good as any. The same item is never repeated, so there's no need to check for consistency. Please do not mark this form. Enter your answers on the opscan sheet provided, using the following scale:

1	2	3	4	5
Almost Never	Occasionally	Sometimes	Often	Nearly Always

- | | | |
|-------------------------------------|---|--------------------------|
| 1. sad | 30. disgusted-w-self | 57. jittery |
| 2. hopeless | 31. wide-awake | 58. relaxed |
| 3. alert | 32. confused | 59. uninhibited |
| 4. worthy | 33. energetic | 60. proud |
| 5. restless | 34. gloomy | 61. disorganized |
| 6. hopeful | 35. strong | 62. spontaneous |
| 7. caring | 36. suppressed | 63. all-together |
| 8. charged-up | 37. unconcerned | 64. anxious |
| 9. unreactive | 38. angry-at-self | 65. in-control-of-events |
| 10. angry-w-someone
or-something | 39. annoyed-w-someone-
or-something | 66. blue |
| 11. happy | 40. ashamed | 67. friendly |
| 12. at-ease | 41. organized | 68. furious |
| 13. shaky | 42. serene | 69. clear-minded |
| 14. calm | 43. capable | 70. withdrawn |
| 15. pleased-w-self | 44. pessimistic | 71. enthusiastic |
| 16. weak | 45. displeased-w-
self | 72. weary |
| 17. inhibited | 46. disgusted-w-someone
or-something | 73. cooperative |
| 18. loving | 47. tired | 74. irritable |
| 19. agitated | 48. frightened | 75. fatigued |
| 20. helpless | 49. unenthusiastic | 76. helpful |
| 21. exhausted | 50. guilty | 77. unexcitable |
| 22. conflicted | 51. unhappy | 78. vigorous |
| 23. unspontaneous | 52. powerful | 79. resentful |
| 24. lonely | 53. warm-hearted | 80. disinterested |
| 25. cheerful | 54. bored | 81. understanding |
| 26. worried | 55. tense | 82. uncaring |
| 27. peaceful | 56. depressed | 83. efficient |
| 28. joyous | | 84. good-natured |
| 29. optimistic | | 85. shy |

Appendix E Medical History

Do not write on this form. Record all responses, using a No. 2 pencil, on the opscan sheet provided.

Answer the following items by entering "1" for "no" and "2" for "yes".
NO = 1 YES = 2

1. Are you under medical treatment for a physical ailment?
2. Are you receiving counselling or psychotherapy for an emotional or mental problem?

Do you have or have you had:

3. surgery?
4. a heart ailment?
5. high blood pressure?
6. asthma or other respiratory disease?
7. diabetes?
8. rheumatism or arthritis?
9. tumors, cancer, or any significant growths?
10. any blood disease?
11. any liver disease?
12. any kidney disease?
13. any stomach or intestinal disease?
14. hepatitis?
15. epilepsy or seizures?

On how many days, in the past 12 months, would you estimate you had the following symptoms, problems or reactions?

Use the scale below to rate each item. Be sure to rate all items.

1 = None 2 = 1-7 days 3 = 8-30 days 4 = 31-180 days 5 = 181-365 days

16. acne
17. problems associated with alcohol
18. recreational drug problems, other than alcohol
19. asthma, hay fever, or other allergic reactions
20. high levels of anxiety
21. feelings of depression
22. insomnia or disturbed sleep
23. pelvic inflammatory disease or inflammation of the Fallopian tubes, uterus, cervix, or ovaries
24. eye infection (e.g., pink eye)
25. rashes
26. problem with teeth, including bleeding gums
27. fractures, sprains, or dislocated joints
28. problems with eczema
29. nausea or vomiting
30. diarrhea ("the runs")
31. constipation
32. stomach problems, including stomach aches, ulcers, abdominal bloating, belching, or cramps
33. headaches
34. cold sores (herpes infection on the lips)
35. dizziness

On how many days, in the past 12 months, would you estimate you had the following symptoms, problems or reactions? Be sure to rate all items.

1 = None 2 = 1-7 days 3 = 8-30 days 4 = 31-180 days 5 = 181-365 days

36. the "flu" (influenza)
37. pain or stiffness in your neck or shoulders
38. back pain (does not include stiffness in shoulders)
39. mononucleosis
40. abnormality in your menstrual period (either missing a period, a heavy menstrual period, or bleeding in between periods)
41. ear infection
42. ringing in ear
43. sinus infection, having your sinuses act up
44. strep throat
45. urinary tract infection (bladder or kidney)
46. feelings of irritability
47. vaginal infection, including vaginal discharge
48. non-specific virus infection with symptoms such as a low-grade fever or aching muscles
49. nose bleeds
50. ankle or knee pains
51. loss of appetite
52. binging on food
53. respiratory infections ("common cold")

How often, in the past 5 years, would you estimate you have had the following kinds of accidents?

1 = Not at all 2 = Once 3 = Twice 4 = Three time 5 = Four or more times

54. burns that were due to carelessness or inattention
55. accidents, other than burns, that were due to carelessness or inattention
56. During how many days in the most recent full semester would you estimate you missed a class because of illness?

1 = None 2 = 1-3 days 3 = 4-10 days 4 = 11-15 days 5 = more than 15 days

57. Estimate how many times, during the past 12 months, you visited a physician or medical facility for advice about, or treatment of, a physical ailment.

1 = None 2 = 1 time 3 = 2-3 times 4 = 4-6 times 5 = more than 6 times

58. Estimate how many times, during the past 3 years, you have met with a counselor or psychotherapist.

1 = None 2 = 1-5 times 3 = 6-20 times 4 = 21-100 times 5 = more than 6 times

59. Overall, how satisfied are you with you physical health?

1 = very dissatisfied 2 = mainly dissatisfied 3 = neither dissatisfied nor
4 = mainly satisfied 5 = very satisfied satisfied

Appendix F
Letters to Public School Administrators

January 30, 1988

Dear Public School Administrator:

The study to identify causes of stress in Public School Administrators is nearing completion. Your cooperation in completing the surveys and questionnaires has been greatly appreciated. Thank you very much for your assistance.

If you have not yet completed the surveys and questionnaires and/or returned them, please assist me in getting this information now. I am still interested in hearing from you.

Sincerely,

Michael A. Green

MAG:dh

Appendix F (continued)
Letters to Public School Administrators

January 2, 1988

Dear Administrator:

A study is being conducted to identify causes of stress in Public School Administrators. Your cooperation in completing the enclosed surveys and questionnaires will be appreciated. A self-addressed stamped envelope is included for your convenience. Please return it as soon as possible, but within two weeks.

To date, little information has been collected concerning stress among Public School Administrators. I hope the study will provide useful information for administrative preparation and inservice programs as well as suggest techniques for increased health of administrators.

In order to protect respondents in the study, data will be used only in statistical form. No names are requested nor will be used. In accordance with the Protection of Human Subjects policy, your participation in this study is voluntary. Return of these instruments will serve as your consent to participate in this study.

Thank you very much for your time.

Sincerely yours,

Michael A. Green

MAG/dh
Enc.

If you wish information on the results of this study, please mark the box and return this sheet with your address.

Appendix G
Means and Standard Deviations for Items on Stress Questionnaire
According to Job Classification

Items	Elementary School Principal			Junior High School Principal		
	Frequency Total: Median Standard Deviation	Sensitivity Total: Median Standard Deviation	Total: Median Standard Deviation	Frequency Total: Median Standard Deviation	Sensitivity Total: Median Standard Deviation	Total: Median Standard Deviation
1 - 2	2.83 (.96)	2.50 (0.88)	7.52 (4.03)	3.53 (.72)	2.71 (1.05)	9.65 (4.62)
3 - 4	2.95 (.82)	1.93 (1.02)	5.92 (4.05)	3.53 (.61)	2.24 (1.09)	7.53 (3.86)
5 - 6	3.13 (.94)	2.00 (1.11)	6.55 (4.21)	3.53 (.72)	2.35 (1.00)	8.59 (4.15)
7 - 8	3.00 (1.13)	2.75 (1.10)	8.75 (4.97)	3.53 (.72)	3.12 (1.05)	11.18 (4.64)
9 - 10	3.18 (.96)	3.00 (1.11)	10.15 (4.92)	3.18 (.81)	2.47 (1.07)	8.41 (4.71)
11-12	2.80 (.91)	2.63 (1.03)	7.86 (4.58)	3.06 (.75)	3.06 (.90)	9.82 (4.53)
13-14	3.15 (.89)	2.25 (1.26)	7.43 (4.76)	3.41 (.80)	2.82 (.95)	9.71 (4.46)
15-16	3.25 (.90)	1.95 (.75)	6.45 (3.41)	3.71 (.59)	2.53 (1.07)	9.35 (4.39)
17-18	2.83 (.81)	1.90 (1.24)	5.48 (3.87)	3.12 (.60)	2.18 (1.29)	7.12 (4.43)

Continued

Appendix G (Continued)
Means and Standard Deviations for Items on Stress Questionnaire
According to Job Classification

Items	Elementary School Principal				Junior High School Principal			
	Frequency	Median	Total : Standard Deviation	Total : Standard Deviation	Frequency	Median	Total : Standard Deviation	Total : Standard Deviation
19-20	2.83	2.23	(1.21)	6.68	2.88	2.59	(1.06)	7.82
21-22	1.98	1.86	(1.21)	4.73	1.82	2.01	(1.08)	4.0
23-24	3.33	2.05	(1.11)	6.90	3.65	2.71	(1.40)	10.12
25-26	2.03	2.07	(1.12)	4.85	2.29	2.29	(1.11)	5.88
27-28	2.50	2.21	(1.35)	6.18	2.59	1.94	(1.20)	5.82
29-30	2.18	2.38	(1.30)	6.18	2.47	2.77	(1.30)	7.88
31-32	2.00	1.98	(1.49)	5.40	2.12	2.24	(1.09)	5.18
33-34	2.48	2.13	(1.27)	5.83	3.12	2.35	(1.41)	8.47
35-36	2.38	2.40	(1.15)	5.95	2.24	2.88	(1.45)	7.35

Continued

Appendix G (Continued)
Means and Standard Deviations for Items on Stress Questionnaire
According to Job Classification

Items	Elementary School Principal			Junior High School Principal		
	Frequency Total: Median Standard Deviation	Sensitivity Total: Median Standard Deviation	Total: Median Standard Deviation	Frequency Total: Median Standard Deviation	Sensitivity Total: Median Standard Deviation	Total: Median Standard Deviation
37-38	2.75 (1.08)	2.25 (1.13)	6.85 (4.54)	3.24 (1.20)	2.47 (1.33)	9.24 (5.74)
39-40	2.25 (1.21)	2.63 (1.13)	6.30 (4.20)	2.77 (.83)	3.12 (.86)	8.77 (3.29)
41-42	2.43 (.98)	2.18 (1.32)	6.20 (4.46)	2.41 (1.06)	2.18 (.95)	5.94 (3.91)
43-44	1.75 (1.08)	1.75 (1.22)	3.90 (4.06)	2.06 (1.09)	2.24 (1.30)	5.71 (4.51)
45-46	2.08 (.86)	2.35 (1.29)	5.53 (4.06)	2.12 (1.05)	2.29 (1.21)	5.82 (3.96)
47-48	3.33 (.97)	2.56 (.99)	8.68 (4.50)	3.24 (1.10)	2.71 (1.16)	9.53 (5.01)
49-50	2.73 (1.06)	2.10 (1.08)	6.48 (4.61)	2.24 (1.20)	1.71 (1.11)	4.71 (4.12)
51-52	2.83 (.78)	2.70 (.97)	7.88 (3.84)	3.18 (.64)	2.65 (.93)	8.41 (3.41)

Continued

Appendix G (Continued)
Means and Standard Deviations for Items on Stress Questionnaire
According to Job Classification

Items	Elementary School Principal			Junior High School Principal		
	Frequency	Sensitivity	Total	Frequency	Sensitivity	Total
	Total : Median Standard Deviation	Total : Median Standard Deviation	Total : Median Standard Deviation	Total : Median Standard Deviation	Total : Median Standard Deviation	Total : Median Standard Deviation
53-54	2.15 (1.19)	2.20 (1.24)	5.93 (5.33)	2.29 (1.16)	2.35 (1.17)	6.53 (4.63)
57-58	2.10 (1.08)	2.18 (1.39)	5.45 (4.72)	2.12 (1.32)	2.18 (1.33)	6.06 (4.92)
59-60	1.78 (1.14)	1.84 (1.20)	4.20 (3.76)	1.71 (.92)	1.77 (.97)	3.65 (2.29)
61-62	1.63 (1.17)	1.80 (1.27)	4.05 (4.23)	1.71 (1.05)	1.87 (1.10)	4.00 (3.37)

Continued

Appendix G (Continued)
Means and Standard Deviations for Items on Stress Questionnaire
According to Job Classification

Items	High School Principal			Superintendent		
	Frequency	Sensitivity	Total	Frequency	Sensitivity	Total
	Median Standard Deviation	Median Standard Deviation	Total: Median Standard Deviation	Median Standard Deviation	Median Standard Deviation	Total: Median Standard Deviation
1 - 2	3.44 (.62)	2.67 (.84)	9.50 (3.81)	2.94 (1.03)	2.29 (.92)	7.00 (3.84)
3 - 4	3.22 (.65)	2.44 (1.10)	8.22 (4.25)	2.59 (1.18)	2.29 (1.16)	6.77 (4.34)
5 - 6	3.56 (.62)	2.33 (.97)	8.17 (3.47)	3.18 (1.47)	2.18 (1.24)	7.94 (5.20)
7 - 8	3.33 (1.03)	3.00 (1.14)	10.72 (4.86)	2.94 (1.56)	2.46 (1.19)	8.12 (5.84)
9 - 10	3.22 (1.06)	3.11 (1.08)	10.67 (4.38)	3.29 (1.16)	2.59 (1.37)	9.59 (5.91)
11-12	3.28 (.67)	3.00 (.84)	9.89 (3.71)	2.88 (.99)	2.65 (1.00)	8.12 (4.62)
13-14	3.44 (.86)	2.39 (1.15)	8.50 (4.73)	3.00 (.94)	2.41 (.80)	7.65 (3.92)
15-16	3.78 (.55)	1.94 (.94)	7.39 (3.93)	3.18 (1.13)	1.82 (1.02)	6.18 (3.88)
17-18	3.00 (1.03)	1.83 (1.04)	5.61 (3.11)	2.53 (1.23)	1.65 (1.17)	4.35 (3.92)
19-20	2.83 (1.10)	1.78 (.88)	5.61 (3.29)	2.82 (1.38)	2.12 (1.36)	6.77 (5.39)

Continued

Appendix G (Continued)
Means and Standard Deviations for Items on Stress Questionnaire
According to Job Classification

Items	High School Principal			Superintendent		
	Frequency Total: Median Standard Deviation	Sensitivity Total: Median Standard Deviation	Total Total: Median Standard Deviation	Frequency Total: Median Standard Deviation	Sensitivity Total: Median Standard Deviation	Total Total: Median Standard Deviation
21-22	1.94 (1.11)	1.92 (1.06)	4.50 (3.54)	1.88 (1.32)	2.04 (1.12)	4.06 (4.18)
23-24	3.83 (.38)	2.22 (.81)	8.56 (2.90)	2.47 (1.33)	1.46 (.99)	3.71 (3.22)
25-26	2.28 (1.45)	2.22 (1.14)	5.83 (4.42)	2.12 (1.76)	2.33 (1.21)	5.94 (5.88)
27-28	2.83 (.99)	2.42 (.94)	7.22 (4.49)	2.77 (1.39)	2.05 (1.30)	6.47 (5.05)
29-30	2.39 (.85)	2.89 (1.08)	7.56 (4.02)	2.41 (.80)	2.59 (1.06)	6.71 (4.00)
31-32	2.67 (.84)	3.11 (.76)	8.56 (4.15)	1.94 (1.03)	1.82 (.88)	4.29 (3.06)
33-34	3.33 (.84)	2.33 (.84)	8.00 (3.61)	1.35 (1.26)	1.37 (.91)	1.94 (2.97)
35-36	2.33 (1.03)	2.50 (1.20)	6.72 (4.07)	2.00 (1.06)	2.41 (.77)	5.18 (3.94)
37-38	3.17 (1.10)	2.28 (1.02)	7.94 (4.19)	1.47 (1.33)	1.49 (.92)	2.18 (2.46)

Continued

Appendix G (Continued)
 Means and Standard Deviations for Items on Stress Questionnaire
 According to Job Classification

Items	High School Principal			Superintendent		
	Frequency Total: Median Standard Deviation	Sensitivity Total: Median Standard Deviation	Total: Median Standard Deviation	Frequency Total: Median Standard Deviation	Sensitivity Total: Median Standard Deviation	Total: Median Standard Deviation
39-40	2.50 (.92)	2.61 (1.10)	7.11 (3.53)	1.88 (1.54)	1.96 (1.24)	4.71 (4.74)
41-42	2.78 (.94)	2.69 (.61)	7.44 (3.43)	2.53 (.80)	2.18 (1.19)	5.88 (4.00)
43-44	1.94 (.94)	2.06 (1.21)	4.94 (3.86)	1.88 (1.05)	2.12 (1.17)	4.94 (3.98)
45-46	2.33 (.91)	3.00 (1.24)	7.67 (4.39)	2.00 (1.12)	2.18 (1.29)	5.59 (4.68)
47-48	3.61 (.61)	2.39 (.92)	8.72 (3.95)	3.53 (.72)	2.71 (.97)	9.71 (4.51)
49-50	2.50 (1.38)	2.11 (1.13)	6.56 (4.53)	2.41 (.87)	2.24 (1.10)	6.00 (3.48)
51-52	3.17 (1.10)	2.01 (.98)	8.78 (3.80)	2.30 (1.50)	2.34 (1.22)	5.65 (3.72)
53-54	2.39 (1.04)	2.78 (1.26)	7.61 (5.11)	2.00 (1.06)	2.12 (1.45)	5.41 (4.86)
57-58	2.56 (.78)	2.83 (.99)	7.78 (3.89)	2.24 (1.10)	2.24 (.90)	5.53 (4.02)
59-60	2.22 (.73)	2.67 (.91)	6.22 (3.62)	1.82 (1.13)	1.93 (.97)	4.35 (3.44)
61-62	1.83 (1.43)	1.89 (1.87)	5.22 (5.24)	1.65 (1.27)	1.98 (1.31)	4.47 (4.40)

Continued

Appendix G (Continued)
Means and Standard Deviations for Items on Stress Questionnaire
According to Job Classification

Items	Elementary School Principal		Junior High Principal		High School Principal		Superintendent	
	Means	Total: Standard Deviation	Means	Total: Standard Deviation	Means	Total: Standard Deviation	Means	Total: Standard Deviation
Total Load	76.55	(17.28)	82.65	(16.28)	85.72	(12.37)	72.00	(19.83)
Total Sensitivity	66.71	(21.46)	72.75	(24.93)	74.02	(15.66)	63.99	(20.54)
Total Stress	190.20	(80.37)	222.24	(89.12)	227.22	(57.43)	175.18	(76.22)
Adminis. Load	38.10	(8.59)	42.77	(6.43)	42.78	(6.16)	33.47	(13.11)
Adminis. Sensitivity	30.64	(9.78)	34.53	(11.48)	31.95	(8.82)	27.55	(11.00)
Adminis. Stress	89.33	(36.47)	112.29	(45.69)	103.67	(29.07)	74.77	(40.81)
Int. Load	18.08	(7.04)	19.00	(8.07)	21.11	(4.28)	18.47	(5.56)
Int. Sensitivity	18.64	(9.18)	19.87	(8.89)	23.91	(5.12)	19.14	(6.94)
Int. Stress	46.83	(30.32)	50.77	(28.46)	63.00	(19.87)	47.18	(22.35)

Appendix H
Correlation Matrix for Primary Emotions and Traits Variables x Medical History Items

PETS	Drug/Food	Psycho- logical Health	Accidents	Physical Health	Major Illnesses	Missed Work due to illness	Visit P. for p.a.	Met w/ psycho- therapist	Satisfaction with health
Consistency of Response	.04	-.31***	-.33***	-.26**	-.22*	-.04	-.22*	-.05	.23*
Positive vs. Negative State	-.08	-.49***	-.23*	-.29**	-.22*	.05	-.04	-.17	.29**
Extroverted vs. Introverted	.21	-.20	-.04	-.07	-.05	.08	.09	-.25**	.26**
Vigorous vs. Fatigued	.06	-.15	-.15	-.21*	-.12	.03	-.04	-.12	.34***
Non-neuroticism	-.20	-.43***	-.20	-.21*	-.23*	.10	-.06	-.18	.20
Ego-Strength vs. Ego-weakness	.06	-.23*	-.04	-.04	-.14	-.00	.04	-.18	.27**
Happy vs. Depressed	.01	-.27**	-.21*	-.22*	-.20	.02	-.10	-.11	.29**
Calm vs. Anxious	-.13	-.51***	-.25**	-.28**	-.15	.01	-.06	-.15	.25**
Agreeable vs. Angry	-.09	-.34***	-.06	-.18	-.08	.14	-.06	.09	.12
Caring vs. Uncaring	.25**	-.02	.13	.04	.06	.12	.19	.01	.16

Continued

Appendix H (continued)
 Correlation Matrix for Primary Emotions and Traits Variables x Medical History Items

PETS	Drug/Food	Psycho-logical Health	Accidents	Physical Health	Major Illnesses	Missed Work due to illness	Visit P. for p.a.	Met w/ psycho-therapist	Satisfaction with health
Self-Esteem	-.08	-.11	-.06	-.01	-.16	-.08	-.01	.16	.16
Integrated vs. Disorganized	-.05	-.22*	-.00	-.07	-.16	-.12	.11	-.23*	.20
Emotional Arousal	.24*	.23*	.18	.12	.08	-.07	.11	.20	.02

* p < .05

** p < .01

*** p < .001

Appendix I
Correlation Matrix for Primary Emotions and Traits Variables x Demographic Variables

	Sex	Age	Years exper. in field of education	Years serv. as Public S. admin.	Type of Pub. S. admin.	Education Highest Degree	Current Salary
Consistency of Response	-.25*	-.04	.10	.12	.09	.21*	.15
Positive vs. Negative State	-.22*	-.08	.05	.13	.04	.16	.10
Extroverted vs. Introverted	-.02	-.03	.15	.24*	.02	.14	.14
Vigorous vs. Fatigued	-.11	-.03	.22	.27**	.04	.09	.15
Non-neuroticism	-.01	.00	.10	.13	.16	.23*	.31**
Ego-Strength vs. Ego-weakness	-.07	-.11	.19	.19	.09	.16	.21
Happy vs. Depressed	-.19	-.06	.24*	.25*	.01	.07	.16
Calm vs. Anxious	-.20	.05	.20	.07	.09	.14	.08
Agreeable vs. Angry	.00	-.04	.03	-.10	-.09	-.11	.03
Caring vs. Uncaring	.10	-.05	-.07	.07	.15	.04	-.03

Continued

Appendix I (Continued)
 Correlation Matrix for Primary Emotions and Traits Variables x Demographic Variables

	Sex	Age	Years exper. in field of education	Years serv. as Public S. admin.	Type of Pub. S. admin.	Education Highest Degree	Current Salary
Self-Esteem	.03	.04	.11	.11	.14	.20	.25*
Integrated vs. Disorganized	-.02	-.01	.05	.05	.11	.07	.22*
Emotional Arousal	.04	.12	.11	.11	-.12	-.09	-.12

* p < .05

** p < .01

*** p < .001

Appendix J
Correlation Matrix for Constructive Thinking Variables x Constructive Thinking Variables

	Constructive Thinking	Emotional Coping	Behavioral Coping	Categorical Thinking	Superstitious Thinking	Naive Optimism	Negative Thinking	Validity Items
Constructive Thinking	1.0	.69	.77	-.67	-.61	.09	-.68	.08
Emotional Coping	.69	1.0	.41	-.32	-.36	-.09	-.52	-.05
Behavioral Coping	.77	.41	1.0	-.46	-.37	.08	-.58	-.05
Categorical Thinking	-.67	-.32	-.46	1.0	.46	.12	.52	-.05
Superstitious Thinking	-.61	-.36	-.37	.46	1.0	.11	.41	-.12
Naive Optimism	.09	-.09	.08	.12	.11	1.0	.13	.11
Negative Thinking	-.68	-.52	-.58	.52	.41	.13	1.0	.02
Validity Items	.08	-.05	-.05	-.05	-.12	.11	.02	1.0

* p < .05

** p < .01

*** p < .001

Appendix K
Correlation Matrix for Medical History Items x Demographic Variables

Demographic Variables	Drug/Food Health	Psychological Accidents Health	Physical Illnesses due to Ill.	Major Missed Work for ail.	Visit Phys. psycho-therapist	Met w/ health therapist	Satisfaction		
Sex	.21*	.33***	.49***	.35***	.06	.18	.29**	.06	-.06
Age	-.17	-.07	-.13	-.11	.03	-.04	-.00	-.09	.00
Years Exp. in field of Education	.03	-.04	-.03	-.08	-.02	-.06	.04	-.05	.06
Type of Public S. Administrator	-.07	-.02	-.10	-.06	.17	-.13	-.06	.01	-.02
Education - Highest Degree Earned	.01	-.19	-.11	-.08	-.23*	-.14	-.08	-.00	.26**
Current Salary	-.15	-.11	-.21*	-.22*	.07	-.16	-.06	-.02	.08

* p < .05

** p < .01

*** p < .001

Appendix L
Correlation Matrix for Medical History Items x Medical History Items

	Drug/Food	Psychological Health	Accidents	Physical Health	Major Illnesses	Missed Work due to illness	Visit Phy. for physical ailment	Met with Psycho-therapist	Satisfaction with health
Drug/Food	1.0	.32	.41	.49	.09	.22	.25	.04	-.03
Psychological Health	.32	1.0	.44	.62	.26	.21	.29	.24	-.17
Accidents	.41	.44	1.0	.62	.14	.22	.51	-.06	-.08
Physical Health	.49	.62	.62	1.0	.22	.28	.41	.02	-.27
Major Illnesses	.09	.26	.14	.22	1.0	.08	.31	.07	-.31
Missed Work due to Illness	.22	.21	.22	.28	.08	1.0	.33	-.01	-.06
Visit Physician for physical ail.	.25	.29	.51	.41	.31	.33	1.0	.02	-.16
Met with Psychotherapist	.04	.24	-.06	.02	.07	-.01	.02	1.0	-.12
Satisfaction with Health	-.03	-.17	-.08	-.27	-.31	-.06	-.16	-.12	1.0

* p < .05
 ** p < .01
 *** p < .001

Appendix M
Correlation Matrix for Demographic Variables x Demographic Variables

	Sex	Age	Years Exper. in field of Education	Years Service as Public S. Administrator	Type of Public S. Admin.	Education Highest Degree Earned	Current Salary
Sex	1.0	.12	-.02	-.26	-.19	-.06	-.10
Age	.12	1.0	.30	.36	.08	.10	.22
Years Exper. in field of Ed.	-.02	.30	1.0	.17	.09	-.01	.33
Years Service as Pub. School Admin.	-.26	.36	.17	1.0	.02	.09	.19
Type of Public School Admin.	-.19	.08	.09	.02	1.0	.27	.51
Education - Highest Degree Earned	.05	.10	-.01	.09	.27	1.0	.38
Current Salary	-.10	.22	.33	.19	.51	.38	1.0

* p < .05

** p < .01

*** p < .001

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