LEBANESE AMERICAN UNIVERSITY

STRESS IN THE WORKPLACE AND JOB PERFORMANCE

by

AMAL MAHMOUD ABDALLAH

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Approval of Research Topic

Candidate AMAL MAHMOUD ABDALLAH
Date June 20, 1995.
Degree Master of Science in Business Management.
Advisor Dr. Nouri Beyrouti
Title of Research Topic Stress in the workplace and job performance.

The following professors nominated to serve as the advisors of the above candidate have approved her research work.

Fist Reader Dr. Nouri Beyrouti
Signature

Second Reader Dr. Abdallah Dah
Signature

Third Reader Miss Manal Younis
Signature
LEBANESE AMERICAN UNIVERSITY

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I, Amal Abdallah authorize the Lebanese American University to supply copies of my projects to libraries or individuals on request.

Signature

June 20, 1995
Date
To the memory of my Father,

To my beloved Family.
ABSTRACT

Stress is an integral part of everyone's life.

Stress at work is receiving increased attention in all organizations. Most managers understand stress intuitively. It is usually an emotional discomfort accompanied by feelings of not being able to cope, that one is not in control, or it may be an unease that all is not well. At the physical level, it includes loss of appetite, sleeplessness, ulcers ...

On individual level, as a consequence of stress, the body's system is thrown out of balance. Excess acid is secreted in the stomach. Adrenaline appears in the blood and heart rates increase. Stress, then, is a psychophysiological phenomenon. Intense feelings and emotions are often the result of experiences we encounter within organizations. Some experiences are more stressful than others, and the same type of experience can be more stressful to one person than to another. Thus the stress potential of a situation can be defined as a function of two elements: the situation and the individuals.

Stress at work results from time pressures, work over/underload, conflict, lack of information, role ambiguity, change, priorities in work when they are not defined and many other causes.

Organizationally, stress can produce declines in productivity, in motivation, in work quality, in alertness and effectiveness; and increases in mistakes, in interpersonal conflicts and turnover. Stress has proven to be a major cause for low job performance levels.

The first step to combating stress is awareness. The individual should be aware of stress susceptibility in a variety of situations. With an understanding of the sources of his discomfort, the individual may examine his behavior for signs
of the effects of stress (i.e. understand the causes and symptoms of stress, when they have a controlling role in their stress levels, they become able to work with that stress). There is no one made-to-order method to manage stress. If one knows that a situation will be stressful, it would be best to avoid it if possible. If the stressors must be faced, then the best way to cope is to be prepared mentally and then to take effective action. Possible coping efforts include exercising, learning to relax, developing non-work interests, finding social support, doing something nice for oneself and for others, or developing a positive attitude. One should try to see the bright side of things and to convert anger to joy. If a person finds that he cannot handle it alone, then he should seek personal or professional help.

Although eliminating the causes of workplace stress is impossible, managers can take action to reduce stress, to manage it. Only the managers who know how to shape their behavior adroitly to fit the organizational demands which create stress can flourish and be effective.

Several management strategies to prevent and reduce stressors in the workplace are available: Carefully planned change processes, role clarification, performance standards, supportive environment, training programs, promotion policies, time management, open communication channels, decentralization in decision making, development of cohesive work groups etc.

Defining, identifying, understanding, adapting and accepting are key words in stress management¹. Do what you can, the best that you can and accept the consequences. This is all that you should expect from yourself in coping with stress.

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CHAPTER ONE
INTRODUCTION

Does your workday seem like an unrelenting attack of deadlines, meetings, paperwork, phone calls, rules and regulations?

Are you so tired and frustrated when you get home from work that you just want to collapse?

Do you suffer from frequent headaches, stomach upsets, fatigue and other symptoms you suspect may be linked to job pressures?

If so, you may suffer from the leading health problem for adult: JOB STRESS.

Job stress is epidemic in the 1990s. In recent years, physicians and corporate managers have realized the significance of stress and its effects on individuals and organizations. Physicians attribute unusual behavior or illness in people to burn out from stress; and corporate managers realized very recently that "The hidden enemy of productivity is stress".

The modern organization creates the most demanding roles in our society because of the difficult challenges, the countless contacts and interactions, the breadth and diversity of relationships (with subordinates, other managers, superior, and staff groups) representing a conflicting variety of interest and goals. Moreover a changing world of work, human relationships, and accelerating technology generate problems for many individuals and organizations. Stress, tensions, frustration, conflict, pressure, overwork are common words in an age of technology and social change. Few executives and other workers escape emotional demands in their work.

Stress in one's personal and private life might come from financial or family problems, death of a parent or relative, divorce, marriage, legal problems, relationships and illness; while stress at work might result from time pressures, lack of challenge, excessive workload, conflict, competition, lack of information, physical conditions, frequent job changes, lack of understanding of one's role (ambiguity), irregular work hours, mismanagement and rapid introduction of new technology. Moreover, when changes are made in organizational relationships and members are denied vital information, stress and conflict come.

Organizational stress comes also when perceptions of company goals differ between superiors and subordinates. It arises when responsibilities are not clear, priorities in work are not defined, and performance requirements are used to control professionals.

Exposure to stress can lead to painful emotions such as anxiety, anger, discouragement, or depression. It can lead also to physical, psychological and behavioral problems. On a personal level, being over stressed can cause high blood pressure, ulcers, heart disease, headaches, sleeplessness and cancer. Organizationally, stress can produce declines in productivity, motivation, work quality and morale, and increases in mistakes, accidents, absenteeism, interpersonal conflicts, and turnover.

But people's reaction to stressful events differ widely: some people faced with a stressful event develop serious problems, whereas other people faced with the same stressful event develop no problems and may even find the event

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challenging and interesting. This depends on the people's ways of thinking about and coping with stressful events: negative thinking increases stress because the negative thinker tends to interpret events in such a way to produce anxiety, while positive thinking minimizes or eliminates stress because positive thinkers rarely perceive events as stressful, in the contrary they have the ability and willingness to deal with stress in constructive ways.

Susceptibility to stress varies also with one's personal characteristics and his personality style i.e. those patterns of behavior by which individual relate themselves to external reality.

Each manager must therefore accept and manage the complex and stressful conditions in his organization. He must develop his own strategy for handling stress, frustrations, and conflicts in his working relationships. The manager's function is to limit and relieve stressful conditions within the organization, and to create a kind of working relations with other people which lessen frustration.

Successful stress management programs are composed of a combination of individual coping strategies and organizational prevention strategies. When used together, they can reduce the effects of stress in the workplace.

In order to develop these ideas in a systematic fashion, the paper has been organized in five chapters. In the first chapter, we introduce the research topic, its purpose and limitations. The second chapter reviews part of the literature pertinent to emergence and nature of stress, to some vulnerable occupations and to methods to cope with the stress experienced. Moreover the causes and effects of stress on both individuals and organizations are examined. In the third chapter a discussion of the methodology of the research is shown. The statistical analysis of data are presented in chapter four. The final chapter presents the recommendations and conclusions.
Research Topic

The topic of job stress is receiving increased attention in all organizations all over the world. Many books, surveys and articles suggest that the "Hidden enemy of productivity is stress". The study of occupational stress could have a great importance since every person encounters stress in all professions. As people's roles become increasingly more demanding, as they face new challenges, more complex situations and increasing sophistication in their organizations, the job itself becomes a source of stress. Both employees and managers must be concerned with the degree of stress to which they are prone. If a company ignores the situation, the job itself becomes joyless and difficult to accomplish, and the net result is a demotivated and dissatisfied individual. Consequently the productivity and the corporate advantage can be affected negatively.

High stress levels can affect every one in the company and thus the performance of the business as a whole. Job stress is costly to the individual and the organization. At the individual level, research has provided evidence that stress is a leading cause of high pressure, mental illness and heart disease, while at the corporate level, organizations are faced with problems of high turnover, absenteeism, poor morale, declining employee performance, and communication breakdowns.

If people are not satisfied with their job, if they are stressed, both they and their organizations shall suffer.

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5 M.R. Friedman, R. Rosenman and V. Carrol, "Change in the serum cholesterol and blood clotting time in men subjected to cyclic variation of occupational stress", Circulation, (1958), p. 34.

6 Karen Collins and Larry N. Killough.
Need of the Study

Our research perspectives from stress management in the workplace are examined in an effort to establish a relationship between job performance and job stress. That is, in other words, to examine and evaluate job stress as a causal factor for decreased performance and productivity. We endeavor to increase the understanding of managers and employees of the causes and effects of stress in the workplace on the personal and organizational level as well, and of how to cope with unusual pressure in order to be healthy and productive.

Stress has strong personal consequences for all individuals, and it is impossible for these consequences not to affect people's job outcomes. For that, becoming aware of day-to-day stress levels and gaining insight into the main stressors can do much to take of the problem.

So, identifying the true nature of the stress, its causes and symptoms, and learning ways of dealing with it are good remedies for the manager, his department and ultimately his organization.

Limitations

An important issue that ought to be taken into consideration is that the Lebanese people are not frank and open about their feelings. They might not respond to this research truthfully. Managers and employees are usually afraid of answering questions related to their jobs or to their feelings about their jobs because they fear that they might lose their jobs especially when working for big companies. While answering the questions, the Lebanese people might sway the real response negatively, thus affecting the results of the research by given bias answers.
Methodology

It was felt essential to adopt both a qualitative and quantitative data collection approach in this study. Secondary and primary sources of data were used.

The Secondary Sources were based on a large scale of articles, books and magazines. These sources provided us with informations about the literature of stress; its causes, effects and consequences; some major coping strategies; and then supplement these informations by examining the relationship between stressors and stress outcomes developed by previous researches.

The Primary Sources were the core of this study. The quantitative data were obtained in the form of a survey questionnaires. The sample included 120 respondents of whom 78 respondents were included in the analysis of data. In addition to the different levels of management (professional, supervisory, middle and strategic), the main sample aimed to reflect responses from a wide range of industries and of functional areas (Accounting, finance, marketing, management, personnel, research & development, production, engineering and sales).
CHAPTER TWO
LITERATURE REVIEW

This chapter reviews part of the literature concerned with stress. Its first emergence, its nature, and its effects on the human mind and body; in order to study and understand stress in the organizational environment.

I will be focusing on some vulnerable occupations (yielding high stress levels), and on the nature and characteristics of these jobs that create stress and strain. I will be exploring the stressors involved in the following occupations: Aviation, car driving, nursing, accounting/auditing, data processing and management information systems, purchasing, and secretarial profession.

Also the literature pertinent to understanding how managers cope with the demands of organizational life is also examined. This literature on coping is diverse, deriving from the fields of personality (such as individual differences), clinical psychology (such as social support), and organizational psychology (such as person - environment fit).

Definitions of Stress in The Professional Literature

What is Stress?

Ask that question to a dozen people and you are apt to hear as many answers. Because each of us experiences stress differently, it is difficult to define. When asking individuals what stress means to them, they tend to complete the sentence "Stress is...":

- Having too much to do and too little time to do it.
- Fighting the traffic to and from work.
- Not being sure what is expected on the job or at home.
- Not getting promoted.
- Never being able to catch up financially.
- Being responsible for others.
- Wondering if career goals are realistic.
- Not being kept informed about what one needs to know to do the job.\(^1\)

The word stress means many different things to many different people. There are hundreds of definitions for stress to be found in the research and professional literature.

For Hans Selye, the "father" of stress, "Stress is the body's reaction and can be positive as well as negative"\(^2\). He considered three types of stress. If the stress response is necessary for the day-to-day adaptability of man to his environment and results in the maintenance of an internal steady state, it is designated Neustress (prefix neu = neutral). If the stress response is unfavorable and disease-producing, it is labeled distress (prefix dis = bad). If the stress response is favorable and results in improvement in physical and / or mental functioning, it is called eustress (prefix eu = good or healthy).

\(\checkmark\) Another definition for stress is "a (perceived) substantial imbalance between demand and response capacity, under conditions where failure to meet demand has important (perceived) consequences" (McGrath, 1970).

\(\checkmark\) Gowler and Legge in 1975 said that "a situation becomes stressful when an individual feels unable to deal with the demands it makes upon him, while at the same time he also feels that he must. In other words, an individual is likely to


be made anxious by his inability to achieve, whether it be in terms of his own or others' definition of achievement".

According to stress expert Dr. Paul Greenfield, stress is simply the physiological reaction to any demand, actual or perceived.

Psychologist Dr. Joan Borysenko said "stress is an interaction between a life situation requiring readjustment and the person's ability to cope".

In his article entitled "Stress", D. Warrick defined stress as "the mental, emotional, physical and behavioral response to anxiety-producing events".

Hingley and Cooper refer to stress as an "elusive" concept, which is "too well know and too little understood". They indicate that stress has been viewed as a dependent variable (a person's response) and as an independent variable (an environmental stimulus). They view stress as a function of a lack of fit between the person and the environment.

In 1992, Jean Wallace did speak about stress. "It is a physiological response. It's the way your body responds to a challenge or a threat. When you are confronted with a stressful event- say a deadline for a major project, your body starts to churn out adrenaline and other stress hormones. The chemical substances pump you up to face the challenge".

For George Everly, a director of psychological services and behavioral medicine, "Stress is the body's nonspecific response to any demand placed on it, the daily "wear and tear" and the psychological or emotional response to it.".

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4 Jean Wallace, p. 41.

Emergence, Nature and Effects of Stress

The Garden of Eden began as a tranquil, stressless environment. But when Adam was given the tormenting chance to eat of the forbidden fruit, he was pushed into mankind's first stressful situation. Adam was offered a choice, and as we know, decision making is the leading ground for conflict, frustration, and distress. Adam's choice left him with potential stress.

Turning from the biblical interpretation of mankind to the anthropological description of ancient man, it appears that the cavemen were faced with choices concerning the ongoing of their lives. Those ancient men lived in a relatively simple environment: no traffic congestion, no unreasonable bosses, no paperwork, and none of the challenges associated with the twentieth century. Their major concerns were finding food and protecting themselves from wild animals. They led active lives in which they had to cope effectively or die. In their quest for food, shelter and survival, they had to fight against or run away from enemies. Their response is called the "fight or flight response".

As part of the response to stress, various biochemical alterations took place. These alterations assisted the cave ancestors either to fight or to flee, depending on which course of action seemed to be the most appropriate. Ancient men did not have the time for worry or anxiety, as a result, they were not prone to stress-related diseases such as ulcers and coronaries.

While the human nervous system is still responding the same way to environmental stressors, the stressors are not the same. People are faced with stressors different than those of olddays, so the "fight or flight response" is no more suitable for contemporary stressors. For example, when a supervisor turns

down an employee's request, the employee can neither physically attack the supervisor nor run away, instead he is supposed to respond in a calm and acceptable manner according to the laws and regulations.

The number of stressors to which we are exposed today is many times greater than the number with which our ancestors were forced to deal. With today's rapidly changing environment, along with the great scientific advances (communication satellites, moon landings, organ transplants, laser technology, artificial hearts, nuclear power plants ...), individuals have come to face stress-induced disorders and diseases.

In order to see why heart disease should be linked to certain occupations in our times, and why the list of coronary-prone individuals is changing, it is necessary to look at some of the medical evidence that emotional stress can damage the heart.

At times the meaning of stress was elusive due to the confusion with its meaning drawn from the discipline of physics. One definition of stress in physics was "an applied force or system of forces that tends to strain or deform a body". The seeds of the theory that emotional stress might be a major cause of heart disease were sown by Claude Bernard in the 1860s, but took more than a century to germinate.

It is in the 193- that Hans Selye, the "father" of stress wrote his first article on the subject. When Selye first used the term stress biologically, he applied it to the reaction of the body. Since then there had been thousands of scientific publications related to stress.

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7 D. R. Morse and M. L. Furst, p. 5.

In 1897, Osler described the heart disease as "a rare disease" while in 1968 a British Medical Journal called it "a modern epidemic comparable to the large-scale outbreaks of the contagious diseases in the nineteenth century"\textsuperscript{9}.

As early as 1868, Von Dusch, a German physician noted that excessive work involvement seemed to be a major cause for people who develop coronary heart disease. And Osler (1892) described the coronary-prone individual as a "keen and ambitious man, the indicator of whose engines are set at full speed ahead"\textsuperscript{10}.

Due to the failure to cure heart disease, and to the reports of the association with emotional (Osler, 1910; Menninger, 1936; Arlow, 1945; Stewart, 1950; White, 1951; Jacobson, 1955; and Jarvinem, 1955) and occupational (Lewis, 1934; Yater, 1951; Morris, 1952; Keys and Brock, 1955) factors, Friedman and Rosenman in 1957 remarked the relation between emotional stress and heart disease. They did interview by questionnaire executives in a wide range of companies, and a group of physicians treating patients suffering from coronary disease, and asking them what they thought was the cause of this condition. 70\% of the interviewed sample attributed the cause to the excessive drive, competition, meeting deadlines, and economic frustrations. Less than 5\% considered anxiety, worry or fear to be a causal factor, and 5\% attributed the condition to dietary fat. At the end of their experiment, Friedman and Rosenman came to a conclusion concerned with the coronary-provoking Type A behavior pattern. This behavior pattern was characterized by\textsuperscript{11}.

\textsuperscript{9} F.M Mai, p 12.

\textsuperscript{10} D. R. Morse and M. L. Furst, p. 8.

\textsuperscript{11} M. Friedman and R. H. Rosenman, "The Relationship of Behavior Pattern A to the State of the Coronary Vasculature", \textit{Amer Journal Med.}, (1968), p. 51
- An intense drive to achieve goals.
- Inclination and eagerness to compete.
- Persistent desire for recognition and advancement.
- Continuous involvement in multiple functions subject to time restrictions.
- Extraordinary mental and physical alertness.

Individuals showing the above mentioned characteristics were contrasted with another group referred as Type B behavior pattern. Those belonging to the group B are individuals who were relaxed, moved slowly and calmly, exhibited no impatience, denied even moderate drive or ambition, avoided involvement in deadlines, and felt no sense of urgency, as a result they show reduction in coronary risk factors including high level of cholesterol and high blood pressure.

Mardhoff and Parsons (1967) in their review of the literature concluded that the search for coronary personality had been unproductive, but admitted the evidence that psychological stress is implicated in coronary disease.

Also Mai, in his article on "personality and Stress in coronary Heart Disease" concluded that a driving, ambitious, aggressive personality type has an increased risk of developing angina pectoris (i.e. a disease marked by attacks of chest pain precipitated by deficient oxygenation of heart muscles).

At the turn of the century, clinical coronary heart disease was rare. Now, this disease alone is responsible for one third of all deaths in industrialized societies. The fact that the rise in coronary heart disease parallels the period of rapid change in the societies suggests that factors related to 20th century like modern patterns of life and work may be a relevant cause.

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12 Jean Wallace, p. 40
Literature Review of Some Vulnerable Occupations

Recent research into worker's perceptions of occupational stress, and the relationship between performance and their health is a major concern for modern organizations. Hundreds of books, thousands of articles in major journals, and several new journals have appeared since 1980s as the new literature on occupational stress grows.

A literature review of some vulnerable occupations yielding high stress levels, the stressors involved in these occupations, their effects on both employers and employees, and the coping strategies that were used, is best revealed in reviewing a variety of surveys showing that stress is a major complaint for most adults, and that job stress is a serious growing problem.

Comparisons of stress levels among people in a variety of occupations have resulted in the identification of several high stress occupations such as: Aviation; racing driving; nursing; accounting /auditing; data processing/management information systems; purchasing; human resources; and secretarial work.

The first three occupations will be reviewed briefly (they are included because at times extensive researches were occupied to study stress in these occupations in an attempt to help avoiding the emotional and physical pitfalls). But all the other above mentioned occupations will be reviewed extensively.

Aviation

Aviation is an occupation which is hazardous to the heart. Considerable efforts were done in the field relating to the effect of this occupation on the heart.
The anxiety experienced by the majority of air passenger as well as by the air crew is caused by many factors:\(^{13}\):

- The risk to the lives of up to 360 passengers.
- Disasters that might happen on ground and on air (crash of a plane).
- Time-zone shift causing disturbances in the body.
- Effects of sleep deprivation and prolonged exposure to noise, vibration and reduced atmospheric pressure.

Because of the above mentioned causes and many others, stress in air crew has been extensively investigated (Von Euler, 1954; Lage, 1967; British Ministry of Defense, 1969).

Fifteen passengers and crew of a plane flying from Buenos Aires to London have been studied during and after the 20-hour flight. There were increases in blood pressure and glucose during the flight. Electrocardiographic recordings during the flight showed the expected heart-rate peaks during landing and takeoff. The heart-rate reaches a high 30 beats per minute during landing and takeoff compared to the 90 beats per minute along the route\(^{14}\). Because conditions can pre-stress an air crew, we see that the crew is always off duty for at least 24 hours before the flight.

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Racing Driving

Driving is another form of transport-related hazardous occupation. For several hours a day, the car places individuals in situation which puts a variety of stresses on the heart.

In 1967 Dr. Peter Taggart reported the results of the studies made on the drivers\textsuperscript{15}. Three healthy racing drivers showed during the race an increase in the heart rate to 205 beats per minute. Dr. Taggart also observed the drivers' plasma samples, clear before the race, became milky with fat after it. It appeared that the extra fat resulted from increased synthesis of neutral fat induced by the emotional stress of racing driving.

Nursing

Many researches were done to study the occupational stress in nursing. In 1952, Morris said that this occupation is "rich and unique" in the number of stressors it encounters\textsuperscript{16}. Nurses have responsibility for people rather than things, they are surrounded by pain, grief, and death; and they are reminded on a daily basis of their own mortality. Their work environment offers additional stressors such as loneliness and boredom of night shifts, lack of privacy, exposure to artificial lighting, unpleasure odors and high temperature. All these factors cause nurses to become anxious and stressed if they don't make use of some coping behaviors.


Role issues and interpersonal relations were viewed as problematic by Miles. He concluded that nurses must balance their professional values which place a premium on the patient, with bureaucratic values, which require routine. Nurses interact with a wide variety of people that make conflicting demands upon them\(^{17}\).

A survey on stress among 515 British nursing managers emphasized the causes of stress already mentioned and it concentrated on an additional problem which is balancing home and work demands, since nursing is a female-dominated profession.

Society is also placing an idealized image of a nurse as a self-sacrificing angel. This fact puts an additional burden on nurses who try to attain a set of high expectations. So feelings guilt, self-reproach, and stress are inevitable in nursing.

While popular attention has been placed on the hazardous occupations such as aviation, car driver and nursing, only a limited number of studies have focused on the stresses that auditors, accountants, data processing, MIS managers, purchasing managers, human resources professionals and secretaries face.

Accountants and Auditors

Accounting has traditionally been considered a very stressful profession. This stress produced by work pressure has became number one on the list of executive health concerns\(^{18}\).

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Research by Meyer Friedman (1958) found that the cholesterol levels of accountants increased significantly during the busy season and tended to decrease afterwards. By controlling the diets of the accountants in his field experiment, Friedman was able to demonstrate that working long hours under deadline pressure was the cause of the increased cholesterol level\(^{19}\). It is well known that these cholesterol levels have been linked to heart disease. Another study included an examination of stress in the public accounting profession from the standpoint of work satisfaction. The researches found that auditors responsible for the day-to-day operation experience the greatest levels of "work load dissatisfaction", a primary cause of stress\(^{20}\). They also found that partners and managers tend to be more satisfied with their workload than did seniors, and that partners and managers tended to be more aggressive and time conscious.

In this study, seniors reported that 27% of time-budgets they faced were "very tight, practically unattainable" whereas managers reported only 8% of their budgets.

In 1988, a study on auditor stress and time-budgets were done and compared with that of 1982 (above cited research).

By contrast, in the current study, seniors reported that 38% of their time budgets were "very tight, practically unattainable", and 34% is reported by partners and managers.

Moreover, in the 1982 study, 30% of the partners and managers, and 78% of the seniors and staff believed that time budget pressures were a significant problem. This compares with 42% of the partners and managers, and

\(^{19}\) M. R. Friedman, R. Rosenman and V. Carrol, p. 852-861.

60% of the seniors and staff in the 1988 study who believe that these pressures are a significant problem\textsuperscript{21}.

A recent research conducted in May 1989 studied stress and its consequences in public accounting. The sample consisted of 1593 CPAs employed in public accounting and 340 who had been employed by CPA firms but left for other jobs. Of the 1933 CPAs approximately 1200 responded. The study suggested that several work-related sources of stress do exist in the accounting profession. These sources of stress included constant time pressure, heavy workload and conflicting management demands. Other sources of stress are home-related, especially the conflict resulting between work and family responsibilities.

The result of the study concluded that stress in public accounting stems from two major sources:

- An environment that requires employees to work long hours, particularly during certain periods of the year, and to face demanding deadlines. Time pressures and very demanding workloads are the main causes of the stress felt by many CPAs. Those CPAs included in the study worked an average of 59 hours per week during the busy season which lasts about 16 weeks.

- Conflict between work and family resulting from lack of sufficient time for leisure and family activities\textsuperscript{22}.

The resulting stress had negative outcomes for both the CPAs and the firms that employed them. The stressful environment contributed to job-related tension, job dissatisfaction and high turnover rate. That is why a management


\textsuperscript{22} K. Collins and L. N. Killough, p. 92-98.
commitment to reduce stress is essential to solving the problem. In addition, individual accountants must take an active role in combating the stress associated with a demanding profession.

**Data Processing and Management Information Systems Managers**

Each job has its stresses. And experts say management information systems (MIS) managers are subject to more than their share. The pressures that a programmer, a manager of computer operations, or a data administrator experiences are highly stressful. Special demands in these jobs can create stress stress and interfere with job performance and satisfaction.

Berardo attributes the high rate of stress in the workplace to the character makeup of information processing professionals\(^{23}\). People who enter data processing (DP) field are creative and rigid and like to work alone, enjoying the freedom their jobs offer. They prefer to relate to co-workers on an intellectual level and don't like to reveal much about their personal lives.

When asked "Is DP stressful?", Kate M. Kaiser, an authority on management information science at the University of Wisconsin, answers to this survey question. She said: "We create stress because we like it. We want to solve problem, find the bug, get the job done. 'Workaholic' is the badge of DP"\(^{24}\). The Workaholic is an ambitious, driving individual who allows tensions and frustrations to mount, and like to work under deadlines and high levels of stress assuming that they are immune to such stresses.


Specialists in work-related stress agree that the nature of the MIS position makes it a stressful one. In a survey of 241 MIS managers, Dr. Madeline Weiss found several factors that contribute to MIS stress. Among the prime stressors are work overload, role ambiguity, lack of feedback and rapid technological change. Long hours, a lack of peer group with the organization, and the problems of dealing with people having difficult behavior are adding the stressful difficulties facing MIS managers.\(^{25}\)

What is so tough about being an MIS manager? Many things add up to stress for programmers. There is the difficulty of the job, it is hard mental work to accomplish a complex task and to get it done on schedule. A DP manager is always on call, has ambiguous performance criteria, and moving target dates. He might be called at home since customers rely on him to solve their problems regarding computer operations, applications maintenance, or systems development. For example whenever an on-line system fails at midnight and the operator hasn't enough information to restart, the operator calls the DP manager and try to correct the situation through phone, the manager may even have to leave home and to go in to fix the problem. DP people are scapegoats for every thing that goes wrong in the company.

Moreover, while doing his job, it is rare that anyone respects him. If he does good, he just did what he is supposed to do; if he doesn't, they beat up on him. He services people and they don't acknowledge him. If a DP manager makes a mistake, he impacts a lot of people, and costs the company a lot of money.

There is also the stress resulting from dealing with people who don't know that the MIS manager's job will depend on system constraints. It is less stressful if the users understand what is going to happen.

As for errors, sometimes, DP people while trying to fix a problem in the system, an old one would come back. Feeling responsible for a problem they have no control over can create additional stress for them.

A study reported at the Twentieth Annual Computer Personnel Research sponsored by the University of Virginia concluded that even for those who are most adaptable to DP stress, there is anxiety when management structures and attitudes deny support and recognition to the workers.

Another study at the University of Houston compiled responses from 580 MIS professionals in 18 large corporations. The cause of stress ranked first was poor communication. Next to it came inequities in rewards and promotion; too much work and too little time to do it properly; personal conflict among professionals and between MIS personnel and users; poor definition of one's job in terms of goals, responsibilities and authority; too much changes in day-to-day activities and in the state of technology, and lack of opportunities and career development.

**Purchasing Managers**

The role of a purchasing manager generates some amount of stress.

Since 1962, G. Strauss identified some sources of stress which are particularly important to purchasing managers. He found that the necessity of interacting with other departments and suppliers results in conflicts, and the complexity of purchasing function also causes stress. Strauss noted that conflicts,

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26 S. Marks, p. 100.
negotiating pressures, interpersonal confrontations, incompatible goals, and environmental uncertainty represent potential sources of stress for the purchasing manager.

A more extensive study on the sources of stress and the ways to overcome it among purchasing managers was done in 1982 by Trinkaus and Vredenburg. The study examines three sources of stress among purchasing managers. They are:

- Sources inherent in the job.
- Factors in the environment.
- Sources inherent in the individual.

1 - Sources Inherent in The Job:

Due to the nature of the job, a purchasing manager is exposed to conflict and uncertainty which induce stress. Purchasing managers are vulnerable to role conflict, since they must deal with other departments who may hold objectives that are incompatible with their own. In addition to its own conflicts with other units, the purchasing department may be forced to become involved in disputes between other departments. For example, if the marketing department wishes to modify a product for the purpose of increasing sales, and if the production department opposes such a move due to costly disruptions in the manufacturing process, then the purchasing parties may come under pressure from both parties to decide in their favor.

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Moreover the role of the purchasing manager involves interpersonal relationships with suppliers. Continual attempts to get advantages and to gain favorable conditions with someone seeking to accomplish similar results for his company can be stressful.

In addition to these factors, the complex goals of a purchasing manager produce stress. Many decisions must be made concerning the quality, cost, quantity, transportation, supplier services and future commitments; all these decisions create stress for the purchasing managers.

2 - Environmental Sources:

Purchasing managers face external sources of stress on which they have no control. Technological advances and product innovations are difficult to forecast, and so purchasing managers may not be able to avoid stress from this source.

Another source of stress is the shortage of essential raw materials that can hinder operations, so production lines are slowed and sales orders are unfilled.

Also government regulation and economic conditions can pose problems for the purchasing managers.

Because the purchasing function links an organization to its external environments, conditions in those environments are critical to the performance and well-being of both the organization and its purchasing personnel.

3 - Individual Differences:

The primary individual attribute that reduces stress experienced by purchasing managers is the ability to conduct effective interpersonal relationships. If an individual has the self-assurance to conduct his negotiation in
an analytical and rational manner, he will be less inclined to experience job stress.

The ability to understand problems from another's point of view can lessen the stress resulting from interpersonal relationships.

Another individual attribute that help moderate levels of stress among purchasing managers is the inclination to identify with one's organization.

Flexibility is a third characteristic which moderates and helps a purchasing manager interact with diverse individuals and respond to problems as they arise.

At the end of their study, Trinkaus and Vredenburg suggested that the purchasing manager and the organization should work together to ensure that stress levels remain controllable.

**Human Resources Managers**

The conflict and stress inherent in the occupation of human resources manager has been a matter of concern for some time. Much of the literature in the area of managing work stresses directed toward helping HR managers help others cope with stress since HR professionals are responsible for health and well-being of the members in the organization at work. Although HR managers have been overlooked in the study of work stress, characteristics of this occupation suggest that they do have a stressful career. Such sources of stress as managerial work, responsibility for people, and performance appraisals are HR management tasks. In addition, during unfavorable economic periods, HR managers are the first to be dismissed. Thus job security may be another source of stress. Also HR managers represent the interest of different and conflicting parties, a role which causes stress. Moreover the role of HR manager is full with conflict and ambiguity.
Several studies that were conducted by Carry Cooper have demonstrated that HR managers can be expected to experience considerable stress.

A research done by Nelson and Hitt in 1990 was designed to measure some sources of stress and measures of strain among HR professionals. Among the sources of stress studied are the organizational politics, the performance rewards links, the work overload, the role conflict, the role ambiguity and time pressure\(^{29}\). The findings related to the strains included anxiety, social dysfunction, somatic, psychological and physiological symptoms.

The implications of this research study was: first, HR professionals should effectively monitor their personal stress levels and should make sure to get good health care. Second, HR managers should emphasize the importance of stress-education programs at work. Such programs teach employees about the risks and benefits of their activities and behaviors\(^{30}\).

According to a recent survey, the stress levels for HR professionals are on the increase\(^{31}\). Almost 90% of 300 personnel managers said they felt the profession stressful. 72% said they were more stressed than a year ago, over 20% said personnel staff had been off work in the last 12 months because of stress-related illnesses. When these 300 HR managers were asked to rank the factors contributing to stress, they did choose "making staff redundant" as a major cause, with workload coming second. Other stressful causes were incorrect personnel staffing, deadlines, superiors, the recession, paperwork, and insufficient administrative back-up.


\(^{30}\) Ibid, p. 39.

Secretaries

Today's secretaries are under utilized and isolated. Many believe that their abilities are not being employed to their fullest potential. As a result they tend to experience stress, which is contributing to absenteeism, diminished productivity, and poor health\(^{32}\).

Adding to the secretarial stress is the fact that many of the tasks performed are repetitive and do not provide satisfaction. In addition, secretaries are required to sort out the conflicting priorities of more than one executive which also causes anxiety.

The characteristics cited as most stressful to secretaries are those limiting their ability to control their environment and achieve personal growth. Interruptions, lack of advancement opportunities, lack of communication from the superior, deciding which job to perform first, and taking the blame for executives mistakes are the major causes of stress.

A survey questionnaire also asked secretaries to rate the levels of stress induced by various job activities. Answering the phone emerged as the most stressful activity. Other functions such as redoing erroneously done work and coordinating activities between departments. The lest stressful activities included handling mail, making maintenance calls for office equipment's, making travel arrangements, scheduling meetings and copying documents.

Literature Review of Some Coping Methods

After reviewing the nature of some stressful occupations and the stressors associated to them, a review of the literature on coping will be useful to understanding how managers cope with the demands of organizational life.

Coping has been defined by several by several people in the field. Lazarus define coping as "problem-solving efforts made by an individual faced with demand that are highly relevant to his welfare but taxing his adaptive resources". White defines coping as "a process, involving effort, on the way towards solution of a problem".

The last twenty years have witnessed a vast increase in articles devoted to concept of stress and coping with stress in numerous journals oriented to managers.

A number of these articles offer "five easy steps" for reducing job tensions. They advise:

1 - applying sound administrative principles.
2 - recognizing the role requirements of your position.
3 - maintaining perspective.
4 - keeping a balance between work and recreation.
5 - identifying and accepting your emotional needs.

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35 M. T. Eaton, "Executive Stresses do exist but they can be controlled", Personnel, (1963, v40), p. 143-145.
In 1974, Burke and Belcourt examined ways in which managers coped and asked them to describe specific stressful situations. They found that 65% of the total number of respondents' descriptions of their coping fell into five categories:

1. Talking to others (18%)
2. Working harder and longer (13%)
3. Changing to a play activity (12%)
4. Analyzing the situation and changing the strategy (11%)
5. Withdrawing physically from the situation (10%).

Behavioral and medical scientists have demonstrated that individuals have a great capacity to control stress responses. Examples of stress-reduction activities include yoga, physical exercise, relaxation, and transcendental meditation.

Transcendental meditation (TM) is a technique for gaining deep physical relaxation and improved clarity. Frew presented TM as an easy-to-learn procedure, requiring little time (40 minutes per day) and minimum interference with lifestyle or daily schedule yet offering benefits to health, performance and well-being.

Frew examined whether TM bears any relationship to productivity at work. 42 subjects from a TM trainer were asked to fill a questionnaire which assessed demographic, organizational structure and level, and productivity.

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Organizational level and structure were each measured by one-item questions. Productivity was examined on six dimensions: job satisfaction, performance, turnover rate, relationship with superior, relationship with peers, and motivation. Respondents were asked if their productivity had changed positively or negatively since they began their TM exercise. As a result, meditators reported that they experienced increased job satisfaction, better performance, less desire to leave their work, and better relationships with both supervisors and co-workers.

Another coping method is the relaxation response. Benson and his colleagues have examined the effects of practicing the relaxation response in work settings. This is an integrated set of physiological changes consistent with decreased tensions and reduced blood pressure, heart rate and respiration. The research done studied two groups of people. One exercising the relaxation technique and the other is the controlling group. The group under test agreed to keep daily records for 12 weeks and to attend seven sessions during which each participant fill out questionnaires and has his blood pressure measured. At the end of the study, only the group who did participate to the relaxation response showed a decrease in the blood pressure.

Physical fitness and exercise program took a great part of the literature on managing stress in organizations. These exercises enhance an individual's capacity to face stressful situations and to relieve the tension which results.

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Selye has explained the increased ability of a physically fit organism to cope with stress.

Heinzelmann also reviewed the effects exercise had on individual attitudes and behavior, especially these related to the work situation. The result of his study in 1975 showed that almost 60% of the exercising group stated that the exercise program had a positive effect on their work performance (greater capacity to work harder and improved powers of decision and concentration). About 40% of the participants who exercised (versus 1% controls) reported a more positive attitude toward their work (more energetic and productive and enjoyed work)\(^40\).

The use of \textit{social support} proved to be a good coping strategy. The first studies of social support at work were undertaken in a research program conducted by French and his colleagues at the University of Michigan\(^41\). They reported that social support from one's supervisor, peers, and subordinates minimizes the effects of stress (especially workload).

Pinneau has suggested that social support process has three potential effects\(^42\):

1. directly on the sources of stress (prevention);
2. directly on the measures of strain or well-being (therapeutic);
3. a moderating effect on the stress-strain relationship itself (buffering).


He reported that individuals who have a high level of social support are less likely to have stressful events with their environment.

In 1986, Dr. Pelligrino developed what he called the \textit{COPE model} which consisted of four stages while combating stress$^{43}$.

\[ C = \text{challenge the stressor. By using some skills, you can reduce the impact of the stressor.} \]

\[ O = \text{outlet of stress must be found. Here, you assume that you cannot change the situation; so you have to use some forms of relieving stress such as exercise, relaxation methods and social support.} \]

\[ P = \text{perception of situation. Be objective. Redefine the situation. Examine alternatives.} \]

\[ E = \text{escape the stressful situation. Recognizing that no alternatives exist, looking for changes or other options will be useful to escape the stressful situation.} \]

Shepherd in his article "Manage the Five C's of Stress" said that understanding what causes stressors is the first step to formulate a plan of attack.

His five C's approach provides a guideline to develop such an understanding. Therefore, individuals must master the five C's- the art of clarity, choice, control, conditioning- if they are to have the confidence to manage their stress$^{44}$.

\textit{Clarity}: where is the stress coming from? is it from personal or professional life?

\footnotesize{$^{43}$ E. L. Owens, "Combating Stress in the DP Environment may Cause Stress", \textit{Professional Development}, (December 1986), p. 11-16.}

\footnotesize{$^{44}$ John S. Shepherd, "Manage the Five C's of Stress", \textit{Personnel Journal}, (July 1990, v.69), p. 64-65.}
Choice: people must learn to choose positive stress and ignore the negative stress. People must recognize that they have the power to make appropriate choices to lessen the negative stress.

Control: individuals do have control over many stressors. They must learn to engineer the environment and to have control over it.

Conditioning: individuals must condition the minds to handle life's stressors over which they have no control.

Confidence: it is the mental strength that is gained through success. Once people understand that they can control their stress levels, they can build the confidence needed to work with that stress.

Everly and Smith explained how to combat stress through four steps. Their technique intended to reduce stress and consisted of four steps:

1 - Avoid stressors: (environmental engineering) the key is to reduce stress without sacrificing any of life's rewards.

2 - Cope with stressors: (Psychological intervention) by reestablishing a sense of control and minimizing irrational assumptions.

3 - Directly reduce stress arousal using the relaxation response.

4 - Vent the stress through physical exercises that help release tension.

Although research on coping has been going on for some times, it has been normative and experimental. These research have offered little in the way of generalization and prediction.

Research on managerial coping is still in its infancy. Steps will have to be taken before we can develop a good understanding of what kinds of coping

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45 Georges S. Everly and Kenneth J. Smith, p. 80-82.
strategies work effectively for which people in which situations, and what are the outcomes of using certain strategies versus others for the individual, his team and the organization as a whole.
Causes, Outcomes and Consequences of Stress

A stressor is a demand made by the internal or external environment that upsets a person's balance and for which restoration is needed.\(^{46}\)

In this section, attention will be paid primarily to some of the organizational and extra organizational stressors faced by an individual, and to their effects on that individual. Next, this chapter will offer organizational and individual strategies for coping.

In organizational setting, a wide array of variables could be categorized as stressors.

The sources of stress for organizational members that are the most frequent can be grouped into several categories: Intrinsic job factors, environmental stressors, organizational stressors, rewards systems, career stressors and leadership.

The extra organizational stressors also need to be considered. Family relations, economic problems, social and legal problems are extra organizational stressors that interact with organizational stressors, resulting in a combination that can create stress.

Stressors Inside The Organization

Employees working in an organization are exposed to a wide range of people, events, and situations that are potential stressors.

1 - Intrinsic Job Factors

A- Role conflict: Role conflict has been defined as "the degree of incongruity or incompatibility of expectations communicated to a role incumbent by role senders"\(^{47}\). Role conflict is present when mutually incompatible demands are made of a person, or he is expected to implement decisions he feels are inappropriate. The job itself can be a source of stress, beginning with the description that the candidate receives before being hired. If the employee's expectations of his or her role in the organization are not met, stress can result. Stress can result also from two or more people sending contradictory requests to the employee (objective role conflict), or when there is a conflict between the requirements of the job and the individual's own needs, goals and values (subjective role conflict). Regardless of the kind of role conflict (objective or subjective), the consequences tend to undermine job satisfaction thus yielding lower productivity and performance.

B- Role ambiguity: Role ambiguity has been defined as "the degree to which clear information is lacking about (1) The expectations associated with a role, (2) methods for fulfilling known role expectations"\(^{48}\). People experience stress when they do not have enough information about their job duties and responsibilities. These role ambiguity can produce stress because of the


uncertainty about the job's scope and responsibilities, or from uncertainty about what coworkers or managers expect. Studies by Kahn (1964) and French and Caplan (1970) reported that men who experienced role ambiguity revealed more job dissatisfaction, more job-related tension and lower levels of self-confidence. Also the findings link ambiguity to indicators of physical and mental health.

C- Work overload: Both managers and non managers can suffer when they are overloaded with work (or underloaded) and when they have many time pressures or deadlines. Overload may be of two types: quantitative and qualitative. When employees perceive that they have too much work to do, or insufficient time to complete assigned work, a condition of quantitative overload exists. Qualitative overload occurs when employees feel that they lack the ability to complete their jobs or that performance standards are too high regardless of how much time they have. Job performance may be affected by overload.

French and Caplan indicated that overloading may produce many unwanted outcomes affecting health and job performance: Job dissatisfaction, excessive job tension, low-self esteem, threat, embarrassment, high cholesterol levels and increased heart rate. Also in 19774, Margolis and his colleagues found that overload is associated with lowered confidence, decreased work motivation, increased absenteeism, decreases in decision-making quality and deterioration in interpersonal relations.49

D- Insufficient control: lack of control creates uncertainty. Uncertain and unpredictable events over which people have no control are stress-inducing events. Also stress occurs when people do know what is going to happen and they cannot do what is necessary to meet the demand. It is control that enables

people to make some conscious choices about how they are going to adapt. Without control, people will have to absorb the stress, and cannot manage it effectively.

2 - Environmental Stressors

A- Change processes: All organizations will experience change at one time or another. The major work changes happening today are: Changes in organizational structure (mergers, rapid growth ...), changes in technology and the way work is done (a result of computerization), and changes in the work force profile (women entering the work force)\(^{50}\).

Change can be a powerful stressor, particularly when people feel uncertain or unsecure about the future. The change can be in the work group, in work responsibilities, processes or products, in the equipment or technology used. Changes that are imposed arbitrarily can be stressful if management provides poor or misleading explanations of what is happening and what it is trying to accomplish.

B- Working conditions: Poorly designed working conditions are stressful for all employees. Discomfort resulting from odors, air pollution, extremes of temperature, poor illumination and unwanted noise can all increase stress\(^{51}\). Also the office design and the office space that are poorly designed for private discussion can produce stress as well as the actual location of the office.


3 - Organizational Stressors

A- Organizational culture/climate: Like individuals, organizations have distinct personality. The style of the organizational, its tone, its priorities and its concern for individuals may cause stress or feelings of tension. The culture may reward cooperation and team work, or it may reward competition. A cause of stress in the organizational climate that places high psychological demand, but offers little participation in decision making.

Power struggles within an organization are another source of culture stress; so heightened competition increases the stress level.

B- Organizational structure: The structure of the organization affects the level of stress experienced by employees and managers. There may be too many or too few levels, too much or too little hierarchy, too little or too much clear communications. Poor communication can reduce the clarity of individual's understanding of their job requirements. This results in increased uncertainty and therefore increased stress. Moreover the uncertainty about one's job responsibilities, authority, objectives and results increases stress. When there is inadequate allocation of resources that meet goals and responsibilities, inadequate authority linked too responsibilities, and unclear reporting relationships, stress can result52.

4 - Reward Systems

Employees want to know how their work is viewed by management, and what the future holds for them. Unfortunately, few managers pay attention to this need. Even those managers who recognize the need to take steps to develop a

performance feedback program for their employees, they present their views in an authoritarian manner, thus stress is created. Performance feedback given in an authoritarian manner can produce resistance and stress. Faulty and infrequent feedback along with inequitable and inadequate financial rewards lead to increased stress in the organization.

5 - Career Stressors

Career stressors are "those aspects of organizational environment that influence that person's perception of the quality of his or her career progress\(^{53}\)". A number of career issues can serve as a source of stress. First, stress may result from a mismatch among one's career goals, expectations and achievements - The greater the difference between expectations and reality, the stronger the stress. Second, stress may result from perceived failure to move into a higher position. Feeling overpromoted and unable to perform well can also be a source of stress. Third, mid-career crises can increase stress. It is in ages forty to fifty that individuals experience doubts about their past accomplishments and their future contributions. Here, the cause of stress is a discrepancy between actual accomplishments and expected ones. As the gap increases, dissatisfaction increases too.

6 - Leadership

The leader in the organization has a significant impact on work relationships and activities, the climate and the group. This influence derives from his position having authority and power. The boss style and his personality may cause feelings of unease and anxiety.

\(^{53}\) Matteson and Ivancevich, p. 47.
The two kinds of leadership behaviors, both supportive and task oriented, are needed to achieve personal and organizational goals. The supportive leader has respect for subordinate's ideas and he creates a facilitative environment of psychological support, warmth, friendliness, and helpfulness by being approachable and by looking out for the personal welfare off the group. On the other hand, the task-oriented leader initiates psychological structure for subordinates by assigning tasks, specifying procedures, clarifying expectations, and scheduling work to be done. Supportive and task-oriented leader behaviors are associated with reduced levels of role ambiguity and role conflict\textsuperscript{54}, because when expectations are clarified, subordinates can make better choices and thus their stress level will decrease.

**Extra Organizational Stressors**

There are a number of stressors outside the workplace. Stress at home is carried into the workplace and vice versa.

1 - Family Relationships

If the family events are not positive they can affect work behavior, husband-wife relationships and child rearing. Conversely, the family can be a place of relief from job stress. Thus, the family can be a help in reducing or a significant contributor to stress levels. For that managers need to be alert to the fact that family problems are carried to the workplace.

\textsuperscript{54} R. L. Ray and R. E. Michael's, p. 33-34.
2 - Economic and Financial Stressors

Continued increases in the price of food, clothing, medical care and education have weakened the purchasing power of many people. Having worries about being able to satisfy oneself and one's family, people are driven to seek second jobs. The extra work provides additional money, but it decreases the leisure time spent with the family. This results in more stress, and the net effect is more family problems and reduced performance in person's primary job.

3 - Relocation

Relocation can affect the entire family if they perceive the move as a disruption\(^55\) or if they have feelings of uncertainty and insecurity about the changes.

4 - Residential Stressors

Individual's residence may be a factor causing stress. Stress - producing features can include the neighborhood's cleanliness, orderliness, safety, transportation, road conditions, climate, air pollution, degree of noise, convenience of services and shopping, and quality of public school\(^56\).

The above mentioned stressors are not the only existent stressors. There exist as many causes for stress as individuals because everyone, having different stressful situations both on and off the job. A powerful stressor for one individual may have no effect at all on someone else. So different stress conditions and factors lead to different outcomes for different individuals.

\(^{55}\) Mattesson & Ivancerich, p. 38.

\(^{56}\) D.D Warick, and D.G. Gardner, "Stress (Data Processing)". Datamation, (19877), p. 90.
Hans Seley did formulate the following Stress Path\(^{57}\).

\[
\text{STRESSORS + INDIVIDUAL "MAKEUP" = STRESS} \\
\begin{align*}
\text{Physical} & \quad \text{Hereditary factors} \\
\text{Social} & \quad \text{Environmental factors} \\
\text{Psychological} \\
\end{align*}
\]

- Eustress $\rightarrow$ Health
- Neustress $\rightarrow$ Homeostasis
- Distress $\rightarrow$ Disease

Individual Makeup (physical, mental, and emotional characteristics) on which people differ, is what makes particular situations stressful for some people and not others. No two people will ever have the same stress experience, because everyone's experiences will be shaped by his own unique characteristics. That is why individual differences are so important to understanding and dealing effectively with work-related stress.

What are individual differences? Individual differences are those attributes that distinguish one person from another. Sex, age, education, intelligence, energy level, sociability, self-perception, artistic ability, work motivation, fears, fantasies, and many others are what explain why a person is not like everyone else.

There are many ways of classifying the differences that exist between people. One classification distinguishes between heredity and environment.

Heredity includes the inborn differences such as hair, color, sex, blood type, ... Not all those characteristics play an important role in stress; for example, eye color have no significance; while productivity of the biochemical

\(^{57}\) D.R. Morse and M.L. Furst, p. 9.
substances help regulate the cardiovascular system when individuals are faced with stressful conditions.

The environmentally shaped differences are not inborn, on the other hand, they are acquired and influenced by learning. They develop and change overtime as a result of our experiences. How we make decisions, how we handle conflict, how we respond to stressors and attempt to cope with stress is very much influenced by our experiences and learning.

Whether a stressor will cause stress for a specific person, depends on how the individual perceives or evaluates the stressor. In fact, it is not stressors that produce stress, but it is the significance, meaning and interpretation that individuals assign to stressors.

It is important to have an appreciation for the role of individual differences in the stress process in order to better manage people and work environments thus contributing in maximizing health, satisfaction and performance, and minimizing dysfunctional stress.

The various individual differences may moderate the relationship between stressors and stress, stress and stress outcomes or outcomes and consequences.

The following discussion is to provide an understanding of the outcomes and consequences associated with stress. These outcomes, resulting from stress and affecting our mind, body and behaviors, can be grouped into three categories: physiological (changes in blood pressure, heart rate, body chemistry, glandular secretions, and muscles reactions), psychological (reduced morale and apathy about work, anxiety, fear, guilt, frustration ...) and behavioral outcomes (decreased work effort, alertness and effectiveness and increased irritability)\textsuperscript{58}.

\textsuperscript{58} D.D Warrick and D.G Gardner, p. 88-90.
The Physiological Responses

The mind-body link is powerful. Stress operates through the nervous and endocrine systems. These systems are the two regulatory systems by which the body controls internal activity. This is why stress can be so damaging in terms of health consequences.

In terms of stress outcomes, all activities begin with the hypothalamus (the brain center that regulates basic functions such as blood pressure, heart rate, fear, pleasure, internal temperature).

Figure 1. A View of The Stress Response.

```
    Stressor
     |    body part
     |    Hypothalamus
       |
Automatic nervous system       Anterior pituitary gland
|                            |
Catecholamines (epinephrine, nor epinephrine)       Adrenal Cortex
                                    Corticosteroids (Cortisone)
```

The automatic nervous system, which transmits messages from the mind to the body directly is divided into two parts: the sympathetic nervous system and the parasympathetic nervous system.
Table 1. Sympathetic and Parasympathetic Effects of Stress.

<table>
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<tr>
<th>Organ</th>
<th>Sympathetic Effect</th>
<th>Parasympathetic Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart</td>
<td>Increased rate</td>
<td>Decreased rate</td>
</tr>
<tr>
<td>Arterial blood pressure</td>
<td>Increase</td>
<td>Decrease</td>
</tr>
<tr>
<td>Skeletal muscles</td>
<td>Increased strength</td>
<td>No effect</td>
</tr>
<tr>
<td>Pupil of eye</td>
<td>Dilated</td>
<td>Contracted</td>
</tr>
<tr>
<td>Blood coagulation</td>
<td>Increased</td>
<td>No effect</td>
</tr>
</tbody>
</table>


The immediate physiological effects of stress which are the results of catecholamine released by the sympathetic nervous system results in increased heart rate, increased serum glucose levels, increased cardiac output, decreased gastric movement.

A prolonged stress creates imbalances that participate diseases of adaptation. Long-term physiological stress response manifests itself in terms of health problems. The adrenal gland secretes adrenocorticotropic hormone that is the most important hormone of stress response. An overproduction of this hormone could be the most dangerous outcome of the physiological stress response.

The effects of stress can be observed in 2.5 seconds and can persist for weeks after exposure to a stressful event.
The Psychological Outcomes

As mentioned before, different stress conditions and factors lead to different outcomes for different individuals. The explanation for these differences rests on what are called "psychological parameters" (personality, emotional factors, needs, goals, aspirations, and how a person copes with stressors)59.

When people are under stress, they experience strong emotions accompanied by observable signs. People under stress often feel nervous. They may experience symptoms such as anxiety and worry, depression, mood swings, irritability, lowered self, esteem or feelings of insecurity, increased sensitivity, aggression or hostility...

Stress researchers have paid less attention to these subjective psychological outcomes than more measurable physiological outcomes.

Workers in organizations may suffer from stress in their work. Some psychological states such as dissatisfaction, lower morale, apathy result from major stressors such as: under utilization of skills and abilities, lack of participation, ambiguity about the future, and poor fit of the job with the desired amounts of complexity and responsibility.

The Behavioral Outcomes

When facing problems at home or at work, individuals experiencing stress may resort to different kinds of behaviors, and the stress will show up as intellectual symptoms such as: trouble concentrating, difficulty in making decisions, forgetfulness, confusion, poor memory, excessive day dreaming, preoccupation with a single thought or idea, loss of sense of humor, decreased

productivity, lower quality of work, increased number of errors... These behaviors can be classified as active behaviors (decreasing one's work effort, refusing to take a particular job assignment) or passive behaviors (not paying attention to a superior's request, letting faulty products pass through...).\textsuperscript{60}

Many factors cause those negative and undesirable behaviors, but experience indicates that job stress is an important factor. For that mismanaged stress can decrease performance, motivation and alertness, but managed stress can increase alertness, sensitivity, and effectiveness. Those who mismanage stress may become aggressive, passive, or moody; they may avoid the stressor by eating, drinking, smoking, or becoming rebellious and uncooperative; or may deny reality.

Stress-related outcomes can evolve into consequences in the areas of health/family and/or performance. The consequences can range from coronary heart disease to reduced decision-making effectiveness, thus can be extremely detrimental to individuals, families, organizations and society.

In this section, the discussion will focus on health consequences. Later on consequences in the area of performance will be tackled.

Generally speaking, individual susceptibility and resistance to disease play a critical role in our health. A person's susceptibility is determined by many factors including heredity, nutrition, personality factors, current health state, and attitudes toward disease. Also of importance is the work environment in which the person spends considerable time.

\textsuperscript{60} Cooper, C.L. and Payne R. Stress at Work, London: John Willey & Sons, 1978, p. 53.
Negative health consequences of stress are experienced more frequently in the workplace than anywhere else. This is due to the great amount of time spent at work and to the responsibility and effort put on the job.

Many employees' difficulties that affect health and performance either originate in or are compounded by stressors at work. Stress can create a situation in which some minor event can push a person beyond the ability to adapt successfully, and a physical or mental health dysfunction occurs. A person's body doesn't adapt perfectly to every stressor it encounters. For that the discuses of adaptation are not the direct result of some external agent (such as infection), rather they are the consequences of the body's inability to meet the threat posed by one or more external agents.

What are the diseases of adaptation? While there is no universal agreement, these diseases include hypertension, heart disease, blood vessel disease, rheumatic arthritis, inflammatory diseases of the skin, kidney diseases, ulcers, allergic and hypersensitivity diseases, nervous and mental diseases, headaches, digestive diseases and diseases of resistance in general.

An illustration of the possible relationship between some of these diseases and stress may help individuals to realize the high price they are paying for many mismanaged stressors they are subject to.

Cardiovascular Diseases

Stress has been cited as a contributor to the development and progress of diseases especially cardiovascular disease. An examination of mortality statistics over the last two decades indicates that cardiovascular disease has killed approximately 50 percent of all people who died each year.\footnote{Mathews, K. A., and Haynes, S.G. "Type A Behavior Pattern and Coronary Disease Risk: Update & Critical Evaluation", American Journal of Epidemiology, 1986, vol. 123, p.923-960.}
Stress produces change in every aspect of cardiovascular functioning. The cardiovascular system. It is a vehicle by which products needed by the cells and structure of the body can get from where they are formed to where they are going to be used. It also serves as a waste disposal system that helps carry waste products from where they are created by the cells to the systems by which they leave the body. Because the cardiovascular system delivers crucial products throughout the body, it is important that the activities never be interrupted.

Stress seems to be one of the most important factors in the development of cardiovascular disease. During any stress, blood pressure climbs. The important issue is whether it returns to normal after the stress experience.

Besides playing a role in the development of hypertension, stress is also important in triggering sudden cardiovascular accidents. By chronically elevating blood pressure, stress sets off conditions that can lead to heart attacks. Any sudden surge of blood pressure occurring in a weakened artery can cause that artery to break.

Stress contributes to peripheral vascular diseases as well, such as migraine headaches. Most migraines begin with vasoconstriction in the peripheral blood vessels. The result is an increase in blood flow to the head. This causes intense fluid pressure within the skill, which in turn causes pain.

Cancer

Cancer is a large group of disease all characterized by the uncontrollable growth of abnormal cells. All cancers convert normal cells into malignant cells that are abnormal cells that grow, reproduce, and spread in an abnormal fashion.

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62 Milsum, J. H., Health, Stress and Illness, New York: Praeger, 1984, p...
The development of cancer for individuals depends on two factors. The first is how quickly malignance occurs in the body. The second is how well the body's immune system works, in other words, how effective the white blood cells are. Cortisone, a hormone released during the stress response chews up fat and protein to make sure the body has the energy to fight off threats. The reduced effectiveness of the immune system can take place because cortisone is converting the protein of the body into energy, and there is no longer enough protein to manufacture new cells. During chronic stress situations, a person's white blood cell count drops dramatically. So there will be not enough white blood cells to let the body fights off abnormalities. Therefore, cortisone resulting from being subject of a stress situation can immobilize protein, impair cellular immunity, and increase the probability of getting cancer. Stress does not cause cancer. Rather, the hormone produced during a stress response weakens the body's immune system so that cancers can develop more easily. This means that stress increases a person's chances of developing cancer.

**Gastrointestinal Diseases**

A common consequence of stress is gastrointestinal disorders. When a person gets emotionally upset, he can feel stomach muscles tighten.

The medical observations indicate that stress can influence activity and reaction in the gastrointestinal tract. Of course, stress is not the only cause of such disorders, many other causes exist such as food poisoning, food allergies, kidney stones, liver disease...

Stress can alter the balance of digestive enzymes and acids. Stress operates on stomach acidity through the increased rate of cortisone secreted, thus yielding to erosion of the stomach or an ulcer. Most studies of stress and
gastrointestinal disease relate to ulcers. Researches do not know exactly how emotional processes are linked to changes in the gastrointestinal tract.

**Depression**

Everyone is familiar with the feeling of being down and dejected. Such feelings have many causes, one of which is stress, especially stress due to loss: a lost job, a lost promotion, a lost opportunity to be successful...

It is important to know the time we stay in a depressed mood. If depression lasts more than two weeks, than professional help is needed.

Possible signals of depression are drinking too much and making regular use of drugs. Other signals include sleeping difficulty, appetite loss, energy loss, and difficulty in concentrating.

Suicide is a dramatic manifestation of depression, and both the intensity and the timing of stressful life events correlate with suicide. Although life events that cause depression are varied, those that isolate an individual from significant relationships can be very influential.

In addition to health/family consequences of stress, there are also performance consequences, some of which are absenteeism, turnover, sabotage, accidents, quality and quantity decrease, and reduced-making effectiveness.

The impact of stress on job performance in organizational settings is still largely unresearched. What research has been done is inconclusive. Some indicates that change (enhancement or degradation) in job performance can be the result of stress.^[Hockey, R. *Stress and Fatigue in Human Performance*, New York, Willy, 1983, p. 42-44.}
Other researchers claims that stress always produces performance degradation. In fact, this is a simplistic position. The effects of stress on performance can be very complex. The stressor may at first enhance performance and later impairs it. For that researchers suggest that managers should think in terms of an optimum stress-performance continuum for their employees. Managers should look for behavioral indicators of stress-performance levels, such as high energy, mental alertness, high motivation, thorough analysis of problems, and sharp perception. Managers can use these behaviors as checkpoints in determining the stress-performance levels at which their employees are operating.

Absenteism

A major contributor to lost productivity is absence, which in turn can be a primary indicator of workplace stress. Most organizations understand that people become ill and are unable to attend work. Organizations accept the fact that rest away from the job can result in a more rapid recovery and a faster return to work.

The other kind of the absenteism involves unnecessary time off following illness i.e. a delay in returning to work after recovery. The motivational state of the employee plays a key role in his attempt to get back to the job. To discourage this case, organizations have restricted the number of sick leave days granted to employees within a specific time period.

Absenteism, like tardiness and turnover, is considered a withdrawal behavior. In many cases, employees prefer to withdraw from rather than confront a work environment that contributes to their stress.

The reasons for the absenteism are varied. Sometimes the problem is found to be real, perhaps a real illness of the employee, or the problem is family-
related. When the problem is found to be work-stressor-related, support should be provided to help the employee cope with the stress.

**Reduced Decision-Making Effectiveness**

Effective decision making is essential for the long-term survival of an organization. Making good decisions requires analytical skills, working well under pressure, and proper use of available information. Janis and Mann in 1977 analyze the role that stress plays in determining how well managers make important decisions. They identify five ways managers use in making decisions\(^{64}\). These ways depend on risks, extent of alternatives, and time available.

1 - Unconflicted adherence. Considering one's present course of action without giving attention to alternatives.

2 - Unconflicted change. Substituting a superior course of action for the present one.

3 - Defensive, avoidance. Escape from the necessity of making a choice.

4 - Hypervigilance. Working under a condition of high stress.

5 - Vigilance. Giving rational consideration to each course of action and its advantages and disadvantages.

When an individual is confronted with a decision choice. If there is no risk involved, the decision maker will be faced with little stress arousal about making the right decision. This behavior is called unconflicted adherence. If there is a substantial risk, the decision maker seeks alternative courses of action and the stress response is initiated. If the decision maker is able to find a decision that is risk-free, the stress will be reduced (unconflicted change). When

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no alternative course of action is available, stress may become intense and the
decision maker will try to escape.

When there is restriction in time available to make decisions, hypervigilant decision makers are prone to errors in judgment. Only if the
decision maker has adequate time to make decision, favorable result occur.

The overall aim of the above discussion has been to provide an
understanding of the causes and effects, outcomes and consequences associated
with stress. Much research still needs to focus on examining stress. It is
premature to conclude that stress has proven to be a major contributor to the
diseases and for the productivity problems that plague a segment of the work
force. However, it is not too early to request that more managerial attention be
given to stress.
CHAPTER THREE
METHODOLOGY

Included in this chapter is a discussion of the population and research sample, a description of research instruments, research design, and the procedure for the statistical analysis of data.

The population of this study consists of a heterogeneous group of organizations from a diverse range of work nature including many sectors: Manufacturing, financial services, merchandising, public sector, health care, educational institutions and services.

The sample was selected mainly by listing those companies performing in Beirut and having different number of employees; then randomly selecting 18 companies. People belonging to the managerial side (professional staff, first level supervisor, middle management and strategic management) were selected from different departments within each company (accounting, finance, marketing, management, personnel, information systems, research and development, manufacturing/production, engineering and sales).

The choices of organizations and participants were governed by two objectives: first, to include a variety of types of occupations so that the measurement would not be restricted to a limited class of occupations, and second, to cover a number of several divisions doing the same kinds of work.
The main data collection involved the development of quantitative measures in the form of a survey questionnaire.

"For the better or for worse, the sample survey has become a familiar part of the social landscape in dozens of societies ... Business organizations, too, use the survey as a standard means of assessing markets and learning about the most and least attractive features of their products ... In short, a survey is a method of collecting information about a human population in which direct contact is made with the units of study (individuals, organizations, communities, etc) through such systematic means as questionnaires ..."\(^65\).

The formulation of the questionnaire, presented in Appendix A, and its content item was dependent both on previous research findings and reliable and valid stress measures.

Since the questionnaire is the link between the information needed and the data to be collected, the principal guidelines for designing the questionnaire were followed.

The wording of the questions used were simple and clear. The researcher tried to avoid misleading and biasing questions, also estimates and double-barreled questions were avoided as well. He were concerned with pretesting the questionnaire before they were ready for field operations. Twenty five questionnaires were distributed and respondents gave their comments. Some were sensitive to words which are not understood, so the researcher tried to be

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more clear. Moreover some questions were omitted and other questions were added.

In order to obtain complete and accurate information relevant to the purpose, to maintain cooperation and goodwill of the respondent and to show respect for his privacy, a personal letter covering the questionnaire was addressed to him. This cover letter explained the purpose of the survey, encouraged the respondents to be honest, assured them that their answers are completely confidential and will be used only for statistical purposes, and finally a request for cooperation was mentioned.

The questionnaire was developed to ascertain the potential stressors (i.e. independent variables) and stress outcomes (i.e. dependent variables). These included:

Independent variables:

1 - Personal and job demographics
2 - Job and organizations' characteristics.
3 - Management support.
4 - Job-related factors.
5 - Social characteristics.

Dependent variables:

1 - Job satisfaction.
2 - Job involvement.
3 - Job performance.

The questionnaire was divided into seven parts.
The instructions at the beginning of each part refer to comments to the respondent about how to use each section.
The first part of the questionnaire included demographic data regarding
the respondent (age, gender, education, occupation, functional areas...).

The second part deals with career and job attitudes and consists of 22
items. It includes 8 questions on the level of satisfaction (career progress,
achieving goals, meeting personal needs, rate of promotion, pay level, status,
kinds of projects to work on), and many questions related to feelings about job,
career progress and organizational commitment, and willingness to put in a great
deal of effort to help the organization be successful.

The third part of the survey questionnaire is used to assess management
support. Seventeen questions were developed to test the support given by
managers when necessary, training courses when assigned to new tasks, actions
taking by management to reduce stress, performance-reward links, supervisory
style and organizational politics.

The fourth part deals with the extent to which respondents feel involved
in their job. The sense of accomplishment, competitiveness, attachment to the
job and hard-working are the items included.

In the fifth part, factors related to the job and affecting people are
included, such as overtime, control over how to do the work, work loads, change,
conflicts on the job, working conditions, job descriptions, role conflict,
responsibility-authority link, work-home conflict, time pressure ...

The sixth part of the questionnaire deals with job performance. 19
questions are included in this section: Ability to make sound decisions, to meet
schedules, to follow orders, to produce satisfactory quality and quantity of work,
Overall managerial skills, level of motivation (i.e. having the initiative,
eagerness, and interest towards work), solving day-to-day problems, adjusting to
new situations are indicators of job performance.
The last part concerning the social characteristics of the respondent deals with his diversion from work (i.e. if while on the job, he takes coffee, visits his colleagues, walks, ...), his vacation, his exercises' habits and his consultation when confronted with stressful situations.

In part I- Demographic characteristics, the respondent here is asked to choose one answer for each of the multiple-choice questions consisting this part. The questions of the remaining parts were constructed in a way that the respondent indicates the degree of agreement or disagreement with each of a series of statements. The scale is numerically scored from 1 = strongly disagree to 5 = strongly agree for part II- Career and job attitudes, part III- Job involvement, part IV- Management support and part V- Job related factors.

A similar scale ranging from almost never = 1 to almost always = 5 applies for part VI of the questionnaire related to job performance.

The last part consists of 8 multiple choice questions where the respondent has to choose the one answer that corresponds most closely to his response.

The questionnaire was distributed to 120 respondents. Completed questionnaires were again taken back from managers. The process involved meeting with the respondent, explaining the nature of the study and then arranging for a follow up visit after few days to pick up the completed questionnaire.

Seventy eight complete questionnaires were collected and they were included in analysis of results. In the presentation of results, survey data were classified, summarized and cross tabulated.
CHAPTER FOUR
STATISTICAL ANALYSIS OF DATA

The aim of the following chapter is to present the results of the questionnaire with the aid of comprehensive models and figures using the facilities of the SPSS (Statistical package for social sciences). With the utilization of descriptive statistics, frequency distribution, analysis of variances, correlations and multiple regression. In addition, stressors and stress outcomes in relation to career and job attitudes, job involvement, and management support will be highlighted using the stepwise multiple regression analysis.

Here below are some frequency distributions of the demographic characteristics of respondents with their corresponding charts and some explanation reported under each frequency distribution.

A1 - Functional area

Table 2. Frequency distribution of respondents by their functional area.

<table>
<thead>
<tr>
<th>Reference No.</th>
<th>Functional Area</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Accounting</td>
<td>9</td>
</tr>
<tr>
<td>2</td>
<td>Finance</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>Marketing</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>Management</td>
<td>17</td>
</tr>
<tr>
<td>5</td>
<td>Personnel</td>
<td>8</td>
</tr>
<tr>
<td>6</td>
<td>Information systems</td>
<td>7</td>
</tr>
<tr>
<td>7</td>
<td>Research &amp; development</td>
<td>7</td>
</tr>
<tr>
<td>8</td>
<td>Manufacturing/production</td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td>Engineering</td>
<td>8</td>
</tr>
<tr>
<td>10</td>
<td>Sales</td>
<td>9</td>
</tr>
<tr>
<td>11</td>
<td>Others</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>N= 78</td>
</tr>
</tbody>
</table>
The highest percentage of respondents in the sample belong to the management functional area (21.8%). Comes after accounting and sales in equal proportions (11.5% each), then personnel and engineering represents each 10.3% of the sample. Information system, research and development, manufacturing/production, marketing, finance, and other represent respectively 9%, 9%, 6.4%, 5.1%, 3.8% and 1.3%.
A2 - Level in the organization hierarchy

Table 3. Frequency distribution of respondents by their level in the organization hierarchy.

<table>
<thead>
<tr>
<th>Reference No.</th>
<th>Level in the organization hierarchy</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Professional staff</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>First level supervisor</td>
<td>19</td>
</tr>
<tr>
<td>3</td>
<td>Middle management</td>
<td>24</td>
</tr>
<tr>
<td>4</td>
<td>Strategic management</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>N= 78</td>
</tr>
</tbody>
</table>

Chart 2. Level in the organization hierarchy

25.6% of the respondents are professional staff; 24.4% are first level supervisor; 30.8% are Middle managers (departments head), and 19.2% are strategic managers (executives).
A3 - Organization's business

Table 4. Frequency distribution of respondents by organization's business.

<table>
<thead>
<tr>
<th>Reference No.</th>
<th>Organization's business</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Manufacturing</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>Financial services</td>
<td>12</td>
</tr>
<tr>
<td>3</td>
<td>Merchandising</td>
<td>20</td>
</tr>
<tr>
<td>4</td>
<td>Public sector</td>
<td>8</td>
</tr>
<tr>
<td>5</td>
<td>Health care</td>
<td>6</td>
</tr>
<tr>
<td>6</td>
<td>Education</td>
<td>8</td>
</tr>
<tr>
<td>7</td>
<td>Services</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>N= 78</td>
</tr>
</tbody>
</table>

The percentages for the primary organization's business are:
Manufacturing 12.8%, financial services 15.4%, merchadising 25.6%, public sector 10.3%, health care 7.7%, educational 10.3%, and services 17.9%.
Merchandising reported the highest percentage of respondents in the sample.
A4 - Organization's size

Table 5. Frequency distribution of respondents by organization's size.

<table>
<thead>
<tr>
<th>Reference No.</th>
<th>Organization's size</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>less than 10</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>10 - 30</td>
<td>23</td>
</tr>
<tr>
<td>3</td>
<td>31 - 50</td>
<td>17</td>
</tr>
<tr>
<td>4</td>
<td>51 - 100</td>
<td>12</td>
</tr>
<tr>
<td>5</td>
<td>above 100</td>
<td>21</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>N= 78</td>
</tr>
</tbody>
</table>

Chart 4. Organization size

In previous studies, the organization's size (number of employees) were reported to be a factor causing stress. As the organization becomes larger (in the number of employees), the channel of communication becomes more formal which may result in stress. For that we did include in our study companies having a medium and large number of employees.

The percentages are classified as follows:

- 6.4% for companies having less than 10 employees.
- 29.5% for companies having 10 - 30 employees.
- 21.8% for companies having 31 - 50 employees.
- 15.4% for companies having 51 - 100 employees.
- and 26.9% for companies having more than 100 employees.
A5 - Years of experience in the organization

Table 6. Frequency distribution of respondents by the number of years of experience.

<table>
<thead>
<tr>
<th>Reference No.</th>
<th>Years of experience</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>less than 1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>1 - 5</td>
<td>44</td>
</tr>
<tr>
<td>3</td>
<td>6 - 10</td>
<td>22</td>
</tr>
<tr>
<td>4</td>
<td>11 - 15</td>
<td>6</td>
</tr>
<tr>
<td>5</td>
<td>15 - 20</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>above 20</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>N= 78</td>
</tr>
</tbody>
</table>

Most of the respondents have been employed for periods going from 1 to 10 years. Only 12.2% of the respondents did work for more than 10 years for the same company. The average of working years is 5.949 years for the whole sample.
A6 - Number of subordinates reporting to the respondent

Table 7. Frequency distribution of respondents by the number of subordinates reporting to them.

<table>
<thead>
<tr>
<th>Reference No.</th>
<th>Number of subordinates</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Zero</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>1 - 10</td>
<td>44</td>
</tr>
<tr>
<td>3</td>
<td>11 - 20</td>
<td>22</td>
</tr>
<tr>
<td>4</td>
<td>21 - 30</td>
<td>6</td>
</tr>
<tr>
<td>5</td>
<td>More than 30</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>N= 78</td>
</tr>
</tbody>
</table>

![Chart 6. No. of subordinates]

The majority of the respondents have 1 to 10 subordinates reporting to them (56.4%). 20.5% have 11 - 20 subordinates, 10.3% have 21 - 30 subordinates reporting to them and 6.4% only have more than 30 subordinates reporting to them. As the number of subordinates increases, conflicts and arguments between them may be created thus yielding to some kind of stress. The average of subordinates reporting to the respondents is 10.70% or = 11 subordinates.
A7 - Educational level

Table 8. Frequency distribution of respondents by the educational level.

<table>
<thead>
<tr>
<th>Reference No.</th>
<th>Educational level</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High school</td>
<td>12</td>
</tr>
<tr>
<td>2</td>
<td>College degree BS</td>
<td>44</td>
</tr>
<tr>
<td>3</td>
<td>MS degree</td>
<td>21</td>
</tr>
<tr>
<td>4</td>
<td>PHD degree</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>N= 78</td>
</tr>
</tbody>
</table>

![Chart 7. Educational Level](chart.png)

Most of the individuals in the sample held a BS degree (56.4%). 26.9% held an MS degree. 15.4% did complete their high school only, and 1.3% had done their PHD studies.
### A8 - Age

Table 9. Frequency distribution of respondents by their age.

<table>
<thead>
<tr>
<th>Reference No.</th>
<th>Age</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20 - 30</td>
<td>28</td>
</tr>
<tr>
<td>2</td>
<td>31 - 40</td>
<td>36</td>
</tr>
<tr>
<td>3</td>
<td>41 - 50</td>
<td>12</td>
</tr>
<tr>
<td>4</td>
<td>More than 50</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>N= 78</strong></td>
<td></td>
</tr>
</tbody>
</table>

![Chart 8. Age](chart.png)

More of the respondents were in their 30s (46.2%). The mean average of age of the sample is 33.98 which means that the population is young.
A9 - Gender

Table 10. Frequency distribution of respondents by their gender.

<table>
<thead>
<tr>
<th>Reference No.</th>
<th>Gender</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Male</td>
<td>48</td>
</tr>
<tr>
<td>2</td>
<td>Female</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>N= 78</td>
</tr>
</tbody>
</table>

![Chart 9. Gender](chart9_gender.png)

61.5% of the respondents were males and 38.5% are females. Here we can see that most of the managers in Lebanon are male. Few females arrive at a managerial position.
The agreement or disagreement of the respondents with each question consisting the parts of the questionnaire are reported hereunder in terms of percentage rates.

Table 11. Part II - Career and Job Attitudes (referred as CJA in the analysis of data) consisted of 12 questions (B1 - B12).

SD = Strongly disagree  D = Disagree  U = Uncertain  A = agree  SA = Strongly agree

<table>
<thead>
<tr>
<th>Reference item</th>
<th>SD</th>
<th>D</th>
<th>U</th>
<th>A</th>
<th>SA</th>
<th>SD+D</th>
<th>SA+A</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1: Personal needs</td>
<td>5.1</td>
<td>30.8</td>
<td>12.8</td>
<td>39.7</td>
<td>11.5</td>
<td>35.9</td>
<td>51.2</td>
</tr>
<tr>
<td>B2: Rate of promotion</td>
<td>5.1</td>
<td>30.8</td>
<td>16.7</td>
<td>39.7</td>
<td>7.7</td>
<td>35.9</td>
<td>47.4</td>
</tr>
<tr>
<td>B3: Pay level</td>
<td>17.9</td>
<td>42.3</td>
<td>11.5</td>
<td>23.1</td>
<td>5.1</td>
<td>60.2</td>
<td>28.2</td>
</tr>
<tr>
<td>B4: Status</td>
<td>3.8</td>
<td>17.9</td>
<td>21.8</td>
<td>43.6</td>
<td>12.8</td>
<td>21.7</td>
<td>56.4</td>
</tr>
<tr>
<td>B5: Changing job</td>
<td>7.7</td>
<td>21.8</td>
<td>15.4</td>
<td>30.8</td>
<td>24.4</td>
<td>29.5</td>
<td>55.2</td>
</tr>
<tr>
<td>B6: Few opportunities for advancement</td>
<td>10.3</td>
<td>17.9</td>
<td>16.7</td>
<td>41</td>
<td>14.1</td>
<td>28.2</td>
<td>55.1</td>
</tr>
<tr>
<td>B7: Detachment from job</td>
<td>1.3</td>
<td>15.4</td>
<td>19.2</td>
<td>39.7</td>
<td>24.4</td>
<td>16.7</td>
<td>64.1</td>
</tr>
<tr>
<td>B8: Life goals are job-oriented</td>
<td>11.5</td>
<td>32.1</td>
<td>11.5</td>
<td>39.7</td>
<td>5.1</td>
<td>43.6</td>
<td>44.8</td>
</tr>
<tr>
<td>B9: Respondents are absorbed in their job</td>
<td>10.3</td>
<td>34.6</td>
<td>10.3</td>
<td>32.1</td>
<td>12.8</td>
<td>44.9</td>
<td>44.9</td>
</tr>
<tr>
<td>B10: Loyalty to the Co.</td>
<td>17.9</td>
<td>30.8</td>
<td>7.7</td>
<td>28.2</td>
<td>15.4</td>
<td>48.7</td>
<td>43.6</td>
</tr>
<tr>
<td>B11: developing knowledge to enhance performance</td>
<td>3.8</td>
<td>6.4</td>
<td>5.1</td>
<td>35.9</td>
<td>48.7</td>
<td>26.1</td>
<td>51.3</td>
</tr>
<tr>
<td>B12: General satisfaction</td>
<td>5.1</td>
<td>23.1</td>
<td>16.7</td>
<td>39.7</td>
<td>15.4</td>
<td>28.2</td>
<td>55.1</td>
</tr>
</tbody>
</table>
People in the sample show a significant satisfaction for their personal needs being met with their current career (51.2% of the respondents), 47.4% are satisfied with the rate of promotion, 56.4% are satisfied with the status they had achieve during their career; but on the other hand, 60.2% of the respondents reported their dissatisfaction about the pay level achieved during their career compared to 28.2% who reported satisfaction with their pay level.

55.2% think of changing their job frequently.

55.1% see that few opportunities for advancement are available.

64.1% feel detached from their job.

44.8% say that most of their personal life goals are job-oriented.

43.6% of the respondents will not quit working for their organizations if it faces hard financial circumstances and they will have a decrease in the salary level.

51.3% are ready to develop their knowledge to enhance and contribute to the success of the organization.

55.1% reported general satisfaction with their job in comparison with 28.2% who have general dissatisfaction, and 16.7% who are uncertain.
Table 12. Part III - Job Involvement (referred as JI in the analysis of data) consisted of 4 questions (C1 - C4).

SD = Strongly disagree  D = Disagree  U = Uncertain  A = agree  SA = Strongly agree

<table>
<thead>
<tr>
<th>Reference item</th>
<th>SD</th>
<th>D</th>
<th>U</th>
<th>A</th>
<th>SA</th>
<th>SD+D</th>
<th>SA+A</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1: Sense of accomplishment</td>
<td>0</td>
<td>7.7</td>
<td>6.4</td>
<td>35.9</td>
<td>50.0</td>
<td>7.7</td>
<td>85.9</td>
</tr>
<tr>
<td>C2: Competitiveness</td>
<td>2.6</td>
<td>10.3</td>
<td>9.0</td>
<td>50.0</td>
<td>28.2</td>
<td>12.9</td>
<td>78.2</td>
</tr>
<tr>
<td>C3: Strong ties with job</td>
<td>3.8</td>
<td>28.2</td>
<td>21.8</td>
<td>25.6</td>
<td>20.5</td>
<td>32.0</td>
<td>46.1</td>
</tr>
<tr>
<td>C4: Self confidence</td>
<td>1.3</td>
<td>12.8</td>
<td>1.3</td>
<td>37.2</td>
<td>47.4</td>
<td>14.1</td>
<td>84.6</td>
</tr>
</tbody>
</table>

In general, the respondents in the study show a great level of involvement in their job. We can conclude from previous research that a high involvement level in the job will lead to high stress in the workplace. 85.9% feel that when they do work well, it gives them a sense of accomplishment. 78.2% like to be always hard working and competitive. 46.1% have very strong ties with their present job which are very difficult to break, and 84.6% believe that if they have something to be done well, they have to do it themselves.
Table 13. Part VI - Management Support (referred as MS in the analysis of data) consisted of 9 questions (D1 - D9).

SD = Strongly disagree  D = Disagree  U = Uncertain  A = agree  SA = Strongly agree

<table>
<thead>
<tr>
<th>Reference item</th>
<th>SD</th>
<th>D</th>
<th>U</th>
<th>A</th>
<th>SA</th>
<th>SD+D</th>
<th>SA+A</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1: Available training courses.</td>
<td>19.2</td>
<td>35.9</td>
<td>6.4</td>
<td>25.6</td>
<td>12.8</td>
<td>55.1</td>
<td>38.4</td>
</tr>
<tr>
<td>D2: Support to give suggestions.</td>
<td>6.4</td>
<td>21.8</td>
<td>14.1</td>
<td>41.0</td>
<td>16.7</td>
<td>28.2</td>
<td>57.7</td>
</tr>
<tr>
<td>D3: Training when assigned to new tasks.</td>
<td>10.3</td>
<td>37.2</td>
<td>9.0</td>
<td>24.4</td>
<td>19.2</td>
<td>47.5</td>
<td>43.6</td>
</tr>
<tr>
<td>D4: Appreciation when work is good.</td>
<td>6.4</td>
<td>25.6</td>
<td>15.4</td>
<td>41.0</td>
<td>11.5</td>
<td>32.0</td>
<td>51.5</td>
</tr>
<tr>
<td>D5: Management takes actions to reduce stress.</td>
<td>15.4</td>
<td>24.4</td>
<td>25.6</td>
<td>24.4</td>
<td>10.3</td>
<td>39.8</td>
<td>34.7</td>
</tr>
<tr>
<td>D6: Information on how to cope with stress.</td>
<td>20.5</td>
<td>38.5</td>
<td>20.5</td>
<td>14.1</td>
<td>6.4</td>
<td>59.0</td>
<td>20.5</td>
</tr>
<tr>
<td>D7: recognition for employees contribution.</td>
<td>12.8</td>
<td>37.2</td>
<td>16.7</td>
<td>25.6</td>
<td>7.7</td>
<td>50.0</td>
<td>33.3</td>
</tr>
<tr>
<td>D8: Management looks for personal welfare of the group.</td>
<td>15.4</td>
<td>16.7</td>
<td>35.9</td>
<td>20.5</td>
<td>11.5</td>
<td>32.1</td>
<td>32.0</td>
</tr>
<tr>
<td>D9: Clear job descriptions.</td>
<td>15.4</td>
<td>19.2</td>
<td>12.8</td>
<td>34.6</td>
<td>17.9</td>
<td>34.6</td>
<td>52.5</td>
</tr>
</tbody>
</table>

55.1% of the respondents disagree with the statement that "Training courses are readily available for us to improve ourselves in our job performance", and 47.5% said they do not receive training when assigned to new tasks.

57.7% said that they are always supported and encouraged to give suggestions and think of alternative solutions to a job-related problem.

51.5% of the respondents receive adequate acknowledgement or appreciation when their work is really good. But when it comes to financial rewards, only 33.3% said that they are recognized and rewarded for their contributions (50% do not agree).
34.7% agreed that management takes significant actions to reduce stress, and only 20.5% are given information regularly on how to cope with stress.

32% of the respondents reported that management looks out for the personal welfare of the group.

52.5% reported that they have current and clear job descriptions.
Table 14. Part V - Job related factors (refered as STRESS in the analysis of data) consisted of 17 questions (E1 - E17).

<table>
<thead>
<tr>
<th>Reference item</th>
<th>SD</th>
<th>D</th>
<th>U</th>
<th>A</th>
<th>SA</th>
<th>SD+D</th>
<th>SA+A</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1: Overtime</td>
<td>12.8</td>
<td>32.1</td>
<td>5.1</td>
<td>26.9</td>
<td>23.1</td>
<td>44.9</td>
<td>50.0</td>
</tr>
<tr>
<td>E2: Control over work.</td>
<td>11.5</td>
<td>35.9</td>
<td>9.0</td>
<td>39.7</td>
<td>3.8</td>
<td>47.4</td>
<td>43.5</td>
</tr>
<tr>
<td>E3: Consequences of making a mistake.</td>
<td>9.0</td>
<td>28.2</td>
<td>12.8</td>
<td>33.3</td>
<td>16.7</td>
<td>37.2</td>
<td>50.0</td>
</tr>
<tr>
<td>E4: Work loads.</td>
<td>6.4</td>
<td>29.5</td>
<td>11.5</td>
<td>28.2</td>
<td>24.4</td>
<td>35.9</td>
<td>52.6</td>
</tr>
<tr>
<td>E5: Adapt to changing situations.</td>
<td>2.6</td>
<td>19.2</td>
<td>10.3</td>
<td>44.9</td>
<td>23.1</td>
<td>21.8</td>
<td>68.0</td>
</tr>
<tr>
<td>E6: Privacy.</td>
<td>12.8</td>
<td>43.6</td>
<td>14.1</td>
<td>21.8</td>
<td>7.7</td>
<td>56.4</td>
<td>29.5</td>
</tr>
<tr>
<td>E7: Communication with others.</td>
<td>3.8</td>
<td>3.8</td>
<td>3.8</td>
<td>47.4</td>
<td>41.0</td>
<td>7.6</td>
<td>88.4</td>
</tr>
<tr>
<td>E8: Work rules published.</td>
<td>7.7</td>
<td>28.2</td>
<td>9.0</td>
<td>32.1</td>
<td>23.1</td>
<td>35.9</td>
<td>55.2</td>
</tr>
<tr>
<td>E9: Time &amp;place to relax.</td>
<td>12.8</td>
<td>32.1</td>
<td>6.4</td>
<td>33.3</td>
<td>15.4</td>
<td>44.9</td>
<td>48.7</td>
</tr>
<tr>
<td>E10: Offer suggestions.</td>
<td>11.5</td>
<td>33.3</td>
<td>12.8</td>
<td>30.8</td>
<td>11.5</td>
<td>44.8</td>
<td>42.3</td>
</tr>
<tr>
<td>E11: Critics of poor performance.</td>
<td>1.3</td>
<td>15.4</td>
<td>12.8</td>
<td>43.6</td>
<td>26.9</td>
<td>16.7</td>
<td>70.5</td>
</tr>
<tr>
<td>E12: Place environment is not pleasant.</td>
<td>2.5</td>
<td>41.0</td>
<td>41.1</td>
<td>21.8</td>
<td>2.6</td>
<td>43.5</td>
<td>24.4</td>
</tr>
<tr>
<td>E13: Job / Family</td>
<td>23.1</td>
<td>29.5</td>
<td>5.1</td>
<td>28.2</td>
<td>14.1</td>
<td>52.6</td>
<td>42.3</td>
</tr>
<tr>
<td>E14: Conflicts</td>
<td>12.8</td>
<td>28.2</td>
<td>10.3</td>
<td>42.3</td>
<td>6.4</td>
<td>41.0</td>
<td>48.7</td>
</tr>
<tr>
<td>E15: Hard to work with others.</td>
<td>2.6</td>
<td>29.5</td>
<td>17.9</td>
<td>33.3</td>
<td>16.7</td>
<td>32.1</td>
<td>50.0</td>
</tr>
<tr>
<td>E16: Taking job home.</td>
<td>30.8</td>
<td>25.6</td>
<td>3.8</td>
<td>32.1</td>
<td>7.7</td>
<td>56.4</td>
<td>39.8</td>
</tr>
<tr>
<td>E17: Unit is stressful.</td>
<td>9.0</td>
<td>17.9</td>
<td>10.3</td>
<td>42.3</td>
<td>20.5</td>
<td>28.2</td>
<td>62.8</td>
</tr>
</tbody>
</table>
The causes of stress in the workplace are varied and numerous. The percentages of people experiencing these causes are the following:

- Obligatory overtime: 50%
- Little control over how to do the work: 43.5%
- Severe consequences of making a mistake: 50%
- Work over/underloads: 52.6%
- Changing conditions (adaptation must be quick): 68%
- Decision making involvement: 42.3%
- Critics of poor performance: 70.5%
- Job / Family conflict: 42.3%
- Conflicts with superiors, coworkers: 48.7%
- Difficulty to work with hassles people: 50%
- Taking job home: 39.8%

The general question on stress was: "Overall, working in my unit is stressful". The response was 62.8% agreement, 28.2% disagreement and 10.3% uncertainty.

So the working conditions for the majority of respondents was stressful.
Table 15. Part VI - Job Performance (referred as JP in the analysis of data) consisted of 10 questions (F1 - F10).

<table>
<thead>
<tr>
<th>Reference item</th>
<th>Almost never</th>
<th>Some of the time</th>
<th>About half of the time</th>
<th>Most of the time</th>
<th>Almost always</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1: Mistakes made because of uncontrollable reasons.</td>
<td>12.5</td>
<td>42.3</td>
<td>11.5</td>
<td>25.6</td>
<td>7.7</td>
</tr>
<tr>
<td>F2: Difficulty to produce satisfactory quantity of work.</td>
<td>14.1</td>
<td>47.4</td>
<td>16.7</td>
<td>10.3</td>
<td>11.5</td>
</tr>
<tr>
<td>F3: Time pressure.</td>
<td>10.3</td>
<td>37.2</td>
<td>21.8</td>
<td>21.8</td>
<td>9.0</td>
</tr>
<tr>
<td>F4: Constant supervision of instructions and policies.</td>
<td>3.8</td>
<td>12.8</td>
<td>11.5</td>
<td>47.4</td>
<td>24.4</td>
</tr>
<tr>
<td>F5: Interest towards work.</td>
<td>12.8</td>
<td>26.9</td>
<td>24.4</td>
<td>35.9</td>
<td>0</td>
</tr>
<tr>
<td>F6: Team spirit.</td>
<td>7.7</td>
<td>24.4</td>
<td>10.3</td>
<td>35.9</td>
<td>21.8</td>
</tr>
<tr>
<td>F7: Tasks completed on time.</td>
<td>6.4</td>
<td>3.8</td>
<td>17.9</td>
<td>48.7</td>
<td>23.1</td>
</tr>
<tr>
<td>F8: High skills to solve day-to-day problems.</td>
<td>2.6</td>
<td>15.4</td>
<td>11.5</td>
<td>35.9</td>
<td>34.6</td>
</tr>
<tr>
<td>F9: Adjusting to new situations.</td>
<td>3.8</td>
<td>17.9</td>
<td>20.5</td>
<td>46.2</td>
<td>11.5</td>
</tr>
<tr>
<td>F10: Performance</td>
<td>9.0</td>
<td>26.9</td>
<td>15.4</td>
<td>35.9</td>
<td>12.8</td>
</tr>
</tbody>
</table>

In general the performance on job being above average has a percentage of 35.9% most of the time, and 9% almost never.
Table 16. Part VII - Diversions from work (refered as G1 - G5, H1, I1 and J1 in the analysis of data).

<table>
<thead>
<tr>
<th>Reference item</th>
<th>G1(%) I do recess</th>
<th>G2(%) I do walk</th>
<th>G3(%) I take coffee</th>
<th>G4(%) I do stretching</th>
<th>G5(%) I visit my colleagues</th>
</tr>
</thead>
<tbody>
<tr>
<td>I = many times</td>
<td>34.6</td>
<td>66.7</td>
<td>9.0</td>
<td>16.7</td>
<td>35.9</td>
</tr>
<tr>
<td>2 = 3 times a day</td>
<td>5.1</td>
<td>5.1</td>
<td>21.8</td>
<td>2.6</td>
<td>3.8</td>
</tr>
<tr>
<td>3 = twice a day</td>
<td>12.8</td>
<td>7.7</td>
<td>32.1</td>
<td>1.3</td>
<td>12.8</td>
</tr>
<tr>
<td>4 = Once a day</td>
<td>11.5</td>
<td>1.3</td>
<td>17.9</td>
<td>5.1</td>
<td>10.3</td>
</tr>
<tr>
<td>5 = rarely</td>
<td>35.9</td>
<td>19.2</td>
<td>19.2</td>
<td>74.4</td>
<td>37.2</td>
</tr>
</tbody>
</table>

Table 17. Exercising.

<table>
<thead>
<tr>
<th></th>
<th>1 = Daily</th>
<th>2 = Regularly</th>
<th>3 = Occasionally</th>
<th>4 = Rarely</th>
<th>5 = Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1. I do exercise</td>
<td>7.7</td>
<td>20.5</td>
<td>38.5</td>
<td>21.8</td>
<td>11.5</td>
</tr>
</tbody>
</table>

Table 18. Vacations.

<table>
<thead>
<tr>
<th></th>
<th>1 = Periodic</th>
<th>2 = Yearly</th>
<th>3 = Occasional</th>
<th>4 = Rarely</th>
<th>5 = No vacations</th>
</tr>
</thead>
<tbody>
<tr>
<td>I1. I usually go for vacations.</td>
<td>9.0</td>
<td>28.2</td>
<td>34.6</td>
<td>28.2</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 19. Consultations.

<table>
<thead>
<tr>
<th></th>
<th>1 = Periodic</th>
<th>2 = Yearly</th>
<th>3 = Occasional</th>
<th>4 = Rarely</th>
<th>5 = No vacations</th>
</tr>
</thead>
<tbody>
<tr>
<td>J1. When confronted with stressful situations, I consult</td>
<td>26.9</td>
<td>9.0</td>
<td>29.5</td>
<td>23.1</td>
<td>11.5</td>
</tr>
</tbody>
</table>

We can see that most of the respondents do exercise (38.5%), go for vacations (34.6%) and consult with friends (29.5%) on occasions.
The descriptive statistics for variables included in the research was done by three descriptive statistical procedures. They are: The analysis of variances (Oneway ANOVA), the correlation coefficient and the multiple regression.

The analysis of variance ANOVA is a statistical procedure used in the analysis of experimental data. When ANOVA is applied to a completely randomized design (CRD), as the case of our study is, then it is called "Oneway ANOVA".

In order to determine the effect or relationship between dependent and independent variables, we did use in our analysis of data the Oneway ANOVA. The sum of squares within-groups as well as the sum of squares between-groups are defined. Then the variances (mean squares) are calculated from the sum of squares divided by their appropriate degree of freedom (df). If there is an effect between variables, so the variance taken within-groups will be smaller than the variance between groups. Therefore, we have to compare the variance between-groups with the the variance within-groups as a way of measuring the presence of an effect. Moreover we can determine the significance of the effect. If there is no effect the F ratio would be = 1. If there is effect, then F ratio will get larger. When F significant < 0.05, so the relationship between variables is significant.
Oneway Results.

1 - Dependent variable = Career and job attitudes (CJA)
by independent variable = Number of subordinates reporting to you (A6).

Analysis of Variance

<table>
<thead>
<tr>
<th>Source</th>
<th>D.F.</th>
<th>Sum of squares</th>
<th>Mean squares</th>
<th>F ratio</th>
<th>F prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>23</td>
<td>7.8531</td>
<td>.3414</td>
<td>1.7665</td>
<td>.0454</td>
</tr>
<tr>
<td>Within groups</td>
<td>52</td>
<td>10.0507</td>
<td>.1933</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>75</td>
<td>17.9038</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The variance taken within groups is smaller than the variance between groups, therefore there is an effect between groups, there is an effect between the career and job attitudes and the number of subordinates reporting to individuals. This relationship is significant since Fprob < 0.05, and it is explained as follows:
The number of subordinates reporting to an individual may have a positive or a negative effect on his attitude towards his job. The boss may feel satisfied when the group reporting to him is homogeneous and when they don't have conflicts between themselves and their boss. Moreover the supervisor or boss may delegate many responsibilities for subordinates who can help him in accomplishing the work. In this way, he feels satisfied and happy with his job.
Conversely when subordinates report a high level of conflicts with their supervisor and with one another, then stressful situations will arise at work which cause the boss to be dissatisfied with his job.
2 - Dependent variable = Stress (E1 - E17).
by independent variable = Level in the organization hierarchy (A2).

Analysis of Variance

<table>
<thead>
<tr>
<th>Source</th>
<th>D.F.</th>
<th>Sum of squares</th>
<th>Mean squares</th>
<th>F ratio</th>
<th>F prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>3</td>
<td>1.9034</td>
<td>.6345</td>
<td>3.2978</td>
<td>.0250</td>
</tr>
<tr>
<td>Within groups</td>
<td>74</td>
<td>14.2370</td>
<td>.1924</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>77</td>
<td>16.1404</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The variance within groups = .1924 is smaller than the variance between groups which is equal to .6345. This implies the effect of organizational hierarchy to stress at work. Also the F ratio being greater than 1 explains this relationship. F prob. = .0250 is less than 0.05, this implies a significant relationship between the two variables.

Managers having more responsibilities and work to do may experience a higher level of stress than those of lower level in the organizational hierarchy. The levels in the organizational hierarchy included in the study are: Professional staff, first level supervisor, middle management, and strategic management.

Professional staff experiences the lowest level of stress in their work because they are only held accountable for the results of their own work, while strategic management has the highest level of stress in their work since they are responsible and held accountable not only for their own work but also for the work of other people reporting to them. They are responsible for the whole success or failure of the organization, thus they may experience a high level of stress.

The higher the position, the greater the difficulty in releasing job-related tensions.
3 - Dependent variable = Stress (E1 - E17).

by independent variable = Organization size (A4).

Analysis of Variance

<table>
<thead>
<tr>
<th>Source</th>
<th>D.F.</th>
<th>Sum of squares</th>
<th>Mean squares</th>
<th>F ratio</th>
<th>F prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>4</td>
<td>2.1385</td>
<td>.5346</td>
<td>2.7873</td>
<td>.0326</td>
</tr>
<tr>
<td>Within groups</td>
<td>73</td>
<td>14.0019</td>
<td>.1918</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>77</td>
<td>16.1404</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A significant relationship exists between the organizational size and the level of stress at work (variance within groups = .1918 < variance between groups = .5346; F ratio = 2.7873 > 1; and F prob = .0326 < 0.05).

The number of employees working for the organization affects the level of stress. As the number of employees becomes larger, more conflicts may arise between people in the organization. In addition, the communication channel becomes more difficult, since numerous employees have to communicate with each other and with their managers. Therefore stressful situations arising from conflicts in interests and in the communication channels arises.
The correlation is a measure of the degree to which two variables are associated. The intent of the correlation coefficient is to quantify the relationship between the variables. The correlation coefficient may take any value between -1.00 and +1.00. When \( r = 1.00 \), this indicates a perfect positive correlation. When \( r = -1.00 \), this indicates a perfect negative correlation. If \( r = 0 \), there is no relationship between variables. Thus correlation provides a measure of the direction and strength of the relationship between variables.

Here below are some correlations between variables with their interpretations.

Table 20. Correlations between causes of stress and stress in the workplace, \( N = 78 \).

| E1 - Obligatory overtime is frequently required | .3145 * |
| E13 - My job interferes with my family, social obligations and personal needs. | .3256 * |
| E14 - I tend to have frequent arguments with my superior, coworkers, subordinates or customers. | .3599 ** |
| E15 - It is hard to get your work done with all the other hassles around. | .4347 ** |
| E16 - I often take my job home with me in the sense that I think about it when doing other things. | .2769 * |
| E4 - Set policies require constant supervision to be followed and applied. | .4678 ** |

* < 0.01
** < 0.001 (more significant).

As people are obliged to work overtime frequently, they will no more find time to do what they like, they will have no leisure time with their families and friends, consequently they become stressed. Work/home conflicts also make
the job more stressful. When a person cannot meet his obligations towards his family, society and himself, he becomes frustrated and will not do his work efficiently. A problem at home is brought to the workplace and can add stress to the job. Also when people take their job home, and they think about it when doing other things, problems at home may arise because other members of the family are neglected, so stress occurs.

In addition, conflict with superiors, coworkers and subordinates make the job itself a source of stress. The consequences tend to undermine job satisfaction thus yielding stress and poor performance. When there is no coordination and cooperation between people at work, when conflicts in opinions, or in expectations exist, stress can result.

When constant supervision is required for the policies to be applied, employees feel that they are always under control, that they are not trusted by their supervisors, so they will be subject to a stressful situation because they have to be always alert not to do mistakes. Instead of paying attention to their interest in their work, they shift to their own interest of not being caught doing something wrong.

Other variables concerned with the stress level in the organization have the following correlations:

The obligatory overtime (E1) is positively correlated with the workloads (E4). The coefficient correlation equals .4732 **. When managers and non managers are exposed to work overloads and they have many time pressures and deadlines that cannot be met on time, obligatory overtime is required. Individuals here are obliged to sacrifice their leisure time to spend it at work trying to meet set schedules. This condition creates a stressful situations that individuals have to bear because of the time pressures imposed on them.
When work loads vary greatly (sometimes underload, other times overload), mistakes on the job become more frequent because individuals; after experiencing a period with no work; are required to accomplish many tasks in a short period of time. They do not concentrate as during periods of normal work. Because of that a correlation of .4172 ** exists between E4 - work loads vary greatly and consequences of making a mistake on the job are severe (E3). Because managers, in normal working conditions, are not used to see the number of mistakes that occur during overloaded periods, their consequences come severe.

(E3) is also related to E11 - Management is quick to criticize poor performance. The correlation is .3822 ** It is normal that when management criticizes poor performance, then the consequences of making a mistake are severe. This leaves individuals working with such managers to live in a state of pressure and stress.

The stress also occurs when individuals are very attached and involved in their job, in a way that the job interferes with their personal life. This explains the correlation of .4508 ** between the two variables E16 (I often take my job home with me in the sense that I think about it when doing other things) and E13 (My job interferes with my family, social obligations and personal needs).

The stress level in the organization is negatively related to the organization hierarchy. The correlation coefficient equals .3061*. Having more responsibilities, the highest management level (the strategic management in the study) experiences the highest level of stress. The middle management (department head) follows, since they have to take care of their departments to ensure a good performance level. The first level supervisor comes after in experiencing stress because he has to supervise and communicate with the professional staff to make sure that the work is done correctly in order to achieve
the goals of the organization. The professional staff experiences stress at a lower rate than others because he doesn't have the responsibilities assigned to higher management level.

Table 21. Correlations between job performance and related factors, N = 78.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Description</th>
<th>Correlation Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>E8</td>
<td>Work rules are published and are the same for every one.</td>
<td>.2946 *</td>
</tr>
<tr>
<td>E10</td>
<td>I feel free to offer suggestions concerning policies and procedures</td>
<td>.4338 **</td>
</tr>
<tr>
<td></td>
<td>affecting the organization.</td>
<td></td>
</tr>
<tr>
<td>E12</td>
<td>My work place environment is very pleasant.</td>
<td>.4431 **</td>
</tr>
<tr>
<td>F5</td>
<td>Eagerness and interest as characteristics of attitude towards work are</td>
<td>.4423 **</td>
</tr>
<tr>
<td></td>
<td>prevailing in this organization.</td>
<td></td>
</tr>
<tr>
<td>F6</td>
<td>Team spirit and cooperation always characterize the type of work carried</td>
<td>.5458 **</td>
</tr>
<tr>
<td></td>
<td>out.</td>
<td></td>
</tr>
<tr>
<td>F7</td>
<td>Required tasks are usually completed on time.</td>
<td>.4429 **</td>
</tr>
<tr>
<td>F8</td>
<td>The high skill and knowledge level facilitate solving day to day problems.</td>
<td>.4476 **</td>
</tr>
</tbody>
</table>

*  < 0.01
** < 0.001 (more significant).

All factors in table 21 have a positive correlation coefficient with job performance.

When work rules are published and are the same for everyone, role conflict and role ambiguity diminish. Everyone knows what he is required to do,
he will have enough information about his duties and responsibilities, and he will be aware that consequences of good or bad performance apply for everyone. This will increase job satisfaction of employees and consequently their job performance.

By keeping individuals involved in the decision-making process affecting their work and the organization, they become more attached to their job because they know that they are implementing their own decisions. Through this way, people will work more in order to achieve the goals set by their decisions. Another high correlation with job performance is that of the working conditions in the organization. A poorly designed working conditions are stressful for all employees. When the workplace environment is pleasant, people will be more at ease in their work, thus their performance will be affected positively.

Also, when eagerness and interest of individuals characterize their attitude towards their work, when they tend to emphasize the interest of the organization and then to look for their own interest, they will perform much better and the overall performance level will increase. The highest correlation (.5458 **) exists between team spirit and cooperation that characterize the type of work and job performance. As the cooperation between workers increases, the performance level is affected positively.

Moreover when there is no time pressure, and required tasks are completed on time (quantity and quality), the performance level increases. Add to all these variables, the high skill and knowledge level of employees that facilitate solving day-to-day problems, enhances the performance level of the employees and ultimately of the organization.
Below is a list of other correlations found between variables:

E17 - Overall, working in my unit is stressful
and F10 - In general, performance on job is above average. The correlation Coefficient is -.3317 *. A negative relationship exists between the two variables. When the job is stressful, the performance level will decrease consequently because people under stress do not perform at their best efforts. While we can see this correlation between the two general statements about stress and job performance, no clear correlation was found between the total questions on stress (while computing stress = E1 + E2 + E3 ... + E17) and the total questions on job performance level (JP = F1 + F2 + ... + F10).

Team spirit and cooperation in the workplace (F6), that enhance the performance level of the whole organization, seems to have positive correlations with many variables (E10 - Feeling free to offer suggestions affecting the organization, E8 - Work rules being published and the same for everyone, and E9 - Having time and place to relax in the organization).

F6 and E10 .2719 *
F6 and E8 .3863 **
F6 and E9 .3094 *

When people participate in offering suggestions affecting the whole team, they will cooperate and try their best to well apply their suggestions.

Also when they feel that the same rules apply for the whole team, they become more close to each other and there will be no place for jalousie. Moreover when employees have a place to relax during the working day, they develop friendship with their colleagues and they will cooperate in doing their work because of their good relationship.
After computing $JI = \text{Job involvement}$, $CJA = \text{Career and job attitudes}$, $MS = \text{Management Support}$, $JP = \text{Job performance and Stress}$, $= \text{Job related factors}$, clear correlations were found to reflect positive relations between variables:

The correlation between job involvement and career job attitudes were found to be significant $0.4710**$. Having a positive attitude about job helps individuals offset stressful situations and be more involved in their job. When people are satisfied with the rate of promotion, the pay level, the status during their career; when their personal needs are met; when many opportunities for advancement are available in the organization they work for; then they feel that they want to be always hard working an competitive. Also they will have very strong ties with their job, and when they do work well, it gives them a sense of accomplishment. Being satisfied with the job, individuals become more committed and involved in their job.

The management support programs help employees to be more satisfied with their job. That is why a positive correlation of $0.4595 **$ exists between management support and career job attitudes. If employees receive adequate training courses to enhance their performance and when they are assigned to new tasks; if they receive acknowledgment and rewards for their contributions, and when their work is really good, then people will be ready to develop their knowledge (take relevant courses, read manuals and relevant books,...) to enhance their performance and contribute to the success of their organization. When employees realize that management are taking significant actions to reduce stress and they are always given information on how to cope with stress, they will not be subject to stressful aspects in the job and consequently they do not feel detached from their job nor do they think of changing it. More
satisfaction from work arises when individuals notice that management looks out for the personal welfare of the working groups.

In addition to its correlation with career and job attitudes, management support has a positive correlation of .3527** with job performance. The more management offers support, appreciation and rewards for subordinates, the more those subordinates try to produce satisfactory quantity and quality of work, and the more they are ready to complete required tasks on time in order to maintain this support. When management shows interest not only in the organizational goals but also looks at the interest of individuals, then interest of individuals will shift towards good work for the organization.

A good training program offered to subordinates when new tasks are assigned or when changes in the organization occur (new technologies introduced, change in the way work is done) helps them adjust accurately to these changing conditions. Informing subordinates about the change and explaining what it is trying to accomplish also help them not to be afraid of this change, not to feel unsecure and uncertain about the future and to accept and deal with it. This will reduce the stress resulting from the change processes, and help employees perform in a better way.

This job performance is related to the career and job attitudes by a correlation equals to .3026*. Life satisfaction (personal needs, self-esteem,..) and work satisfaction (promotion, pay level, status, sense of belonging...) have a great effect on the way people perform their job. The higher the satisfaction resulting from work, the more ready individuals are to perform above average.

But when workers are not satisfied with their current job, they become upset and stressed and they do not care for their performance; the more their
dissatisfaction, the lower their performance level is. In this case, they feel detached from their job and start thinking of changing their job. As a result, the organization as a whole will suffer from poor performance.

After interpreting the correlation coefficient $r$ between variables, the exact percentage of variation shared by variables is studied by the analysis of squaring $r$. The $r^2$ is called the coefficient of determination. This $r^2$ is shown in the multiple regression used to analyse more than one independent variable and it represents the proportion of the variation in the dependent variable explained by the regression.

If $r$ is bigger than 0.8 (sign of relationship ignored), the relationship between the variables is very strong; if $r$ is between 0.4 and 0.8, the relationship is a moderate to strong one; and if $r$ is less than 0.4, the relationship is a weak one.

The general form of the equation for $m$ independent variables is:

$$y = a + b_1 x_1 + b_2 x_2 + \ldots + b_m x_m$$

where $y$ is the dependent variable.

$x_1, x_2, \ldots, x_m$ are the independent variables.

$a, b_1, b_2, \ldots, b_m$ are the regression coefficients generated from our sample data.

The $a$ tells us the predicted value of $Y$ when $X$ is zero. The $a$ coefficient is of less interest to the researcher than the $b$ coefficient.

The $b$ represents the amount of change in $X$. A negative sign on a $b$ coefficient indicates that as $X$ increases, $Y$ decreases.
The type of regression used in our study is called Stepwise Regression. The independent variables enter the regression equation one at a time. The variable selected to enter first is the one that explains the highest level of variation in Y. The next variable to enter is the one that explains the greatest amount of the variation in Y after the effect of the first variable has been removed. This process continues until no significant variation remains or no variable is left that explain a significant amount of the variation.

The variable included in the first multiple regression analysis are:

E17 : "Working in my unit is stressful" is the dependent variable.
The independent variables are: career and job attitudes (CJA), job involvement (JI), management support (MS), and the factors included in the questionnaire to assess the job performance (F1 to F10).
The variable entered on step number 1 is F4 (constant supervision for policies is required). The coefficient of determination is $r^2 = .21887 = 21.887 \%$.
The F ratio = 21.29540 and the significance F = .0000.
F4 has a coefficient of 1.30884 with a t test significance of .0000.
The variable entered on step number 2 E15 (Difficulty to get work done with hassles people in the organization). The variable entered on step number 3 is F6 (Team spirit and cooperation in the work).
Job involvement is the variable entered on step number 4.
E1 (required obligatory overtime) is the variable entered on step number 5.
The variable entered in step number 6 is E16 (Taking job home) and it is the last variable that explains a significant amount of variation in the dependent variable E17 (stressful work).
Regression Results:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Significant t</th>
</tr>
</thead>
<tbody>
<tr>
<td>F_4</td>
<td>.47933</td>
<td>.0000</td>
</tr>
<tr>
<td>E_{15}</td>
<td>.45102</td>
<td>.0000</td>
</tr>
<tr>
<td>F_6</td>
<td>-.23727</td>
<td>.0033</td>
</tr>
<tr>
<td>JI</td>
<td>.46881</td>
<td>.0005</td>
</tr>
<tr>
<td>E_1</td>
<td>.18884</td>
<td>.0108</td>
</tr>
<tr>
<td>E_{16}</td>
<td>.15243</td>
<td>.0285</td>
</tr>
<tr>
<td>(Constant)</td>
<td>-3.45593</td>
<td>.0000</td>
</tr>
</tbody>
</table>

F ratio = 17.99260

Significant F = .0000 (must be < 0.05)

R^2 = .60325

So, the equation is:

\[ E_{17} = -3.45593 + 0.47933 F_4 + 0.45102 E_{15} - 0.23727 F_6 + 0.46881 JI \]
\[ + 0.18884 E_1 + 0.15243 E_{16} \]

As F_6 decreases by 1 unit, E_{17} increases by 0.23727 given that all other independent variables remain constant.

As F_4 increases by 1 unit, E_{17} increases by 0.47933.

As E_{15}, JI, E_1 and E_{16} increase by 1 unit, E_{17} increases by their related coefficient (given that all other independent variables remain constant). The size of the coefficient does not provide a measure of its importance in the regression.

The t test tells us which coefficients are statistically significantly different from zero. A higher significant level is shown when t is much more smaller than 0.05. For example, JI having t=.0005 is more significant in explaining E_{17} than F_6 with t=.0033.
The coefficient of determination $r^2 = .60325 = 60.325\%$. This $r^2$ shows a strong relationship between the dependent variable and the independent variables.

The $F$ test tells us whether the regression as a whole is significant. When $F$ ratio is greater than significant $F$, so the regression is significant as a whole. Here $F$ ratio $= 17.99260 > F$ significant $= .0000$ so there is a significance in the regression under study.

Some descriptive interpretations of the relationship between dependent and independent variables entered in the regression analysis follow:

When workers feel that they are always under control and supervision in order to follow policies and procedures of the organization $(F_4)$, they feel that they are untrusted and this creates a condition of stress in their job $(E_{17})$.

$E_{15}$ : When in the organization, many hassles people are found, this causes good individuals to feel that it is hard to get their work done with all hassles around, so they do not accomplish their work efficiently and effectively which may cause them to experience stress.

$F_6$ : As the team spirit and cooperation characterize the type of work, the more stressful the work becomes.

$E_1$ : When employees are asked to do more obligatory overtime, they become more stressed because they don't have time to do what they like to do.

$E_{16}$ : Individuals who take their job home and think about it when doing other things are more exposed to stress because work/home conflicts may arise.
The second multiple regression studied includes:

Dependent variable: F₁₀ job performance.

Independent variables: career and job attitudes (CJA), job involvement (JI), management support (MS), all factors included in the part of job performance of the questionnaire (F₁ to F₁₀), and factors included under job-related factors (E₁ to E₁₇).

The variables entered in the regression equation are:

On step number 1: F₆ (Team spirit and cooperation).
On step number 2: E₁₂ (Working conditions).
On step number 3: F₇ (No Time pressure).
On step number 4: E₁₀ (involvement in decision-making process).
On step number 5: E₁₅ (Hard to work with hassles).
On step number 6: F₈ (High skill and knowledge).
On step number 7: E₁ (Obligatory overtime).
On step number 8: E₃ (Consequences of making mistakes on the job).

F₆ explains the highest amount of the variation in JP (being the dependent variable).

Regression Results:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Significant t</th>
</tr>
</thead>
<tbody>
<tr>
<td>F₆</td>
<td>.33493</td>
<td>.0001</td>
</tr>
<tr>
<td>E₁₂</td>
<td>.25644</td>
<td>.0019</td>
</tr>
<tr>
<td>F₇</td>
<td>.32274</td>
<td>.0002</td>
</tr>
<tr>
<td>E₁₀</td>
<td>.27792</td>
<td>.0001</td>
</tr>
<tr>
<td>E₁₅</td>
<td>-.23365</td>
<td>.0069</td>
</tr>
<tr>
<td>F₈</td>
<td>.20299</td>
<td>.0136</td>
</tr>
<tr>
<td>E₁</td>
<td>-.16697</td>
<td>.0144</td>
</tr>
<tr>
<td>E₃</td>
<td>.14733</td>
<td>.0384</td>
</tr>
</tbody>
</table>
(Constant) - 2.27250 .0000

F ratio = 18.95529
Significant F = .0000

R² = .68728

The coefficient of determination $r^2 = 68.728\%$ reflects a strong relationship between the dependent variable and the independent variables entered in the regression equation.

$F$ ratio is greater than $F$ significant, this implies that the regression is significant as a whole.

The regression equation is:

$$F_{10} = -2.27250 + .33493 F_6 + .25644 E_{12} + .32274 F_7 + .27792 E_{10} -
.23365 E_{15} + .20299 F_8 - .16697 E_1 + .14733 E_3.$$

Job performance is positively related to the existence of the team spirit and cooperation in the workplace, to the working conditions being good, and to the high skill and knowledge level that facilitate solving day to day problems. Moreover, when no time pressures are imposed on workers, they perform better and the number of mistakes is lessened. In addition, when they are involved in the decision-making process affecting their job, they become more attached and work better to implement their decisions. If consequences of making a mistake on the job are severe, the workers try their best not to do any mistake in order not to be punished. A negative relation exists between job performance and the hard conditions to work with hassles around.

A negative correlation exists between job performance and obligatory overtime. People are more likely to better perform during the normal time of
their work. As they work more overtime, the quality and quantity of work decline yielding a low performance level.

The third multiple regression studies the relation between job performance \( (JP = F_1 - F_{10}) \) as the dependent variable and career job attitudes (CJA), job involvement (JI), management Support (MS), and job stress \( (E_1 - E_{17}) \). The first variable entered in the regression on step number 1 is the management support (MS). The next variable entered on step number 2 is \( E_{17} \) (Working in the unit is stressful).

**Regression Results:**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Significant t</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS</td>
<td>.20567</td>
<td>.0013</td>
</tr>
<tr>
<td>( E_{17} )</td>
<td>-.09537</td>
<td>.0343</td>
</tr>
<tr>
<td>(Constant)</td>
<td>.241461</td>
<td>.0000</td>
</tr>
</tbody>
</table>

F ratio = 7.97991

Significant F = .0007 < .005

\( R^2 = .17546 \)

F ratio is greater than significant F which means that the whole regression is significant. The coefficient of determination \( r^2 = 17.546\% \) reflects a weak relationship between job performance on one hand, and management support and stress on the other hand.

The following regression equation results:

\[ JP = 2.41461 + .20567 \text{ MS} - .09537 \text{ } E_{17}. \]
Management support includes actions such as training courses, rewards/performance links, actions to reduce stress, clear job descriptions, decision-making involvement... These actions if implemented correctly affect the job performance level of individuals and organizations positively.

In addition, stress in the work place affects the job performance negatively. A person who experiences stress in the workplace may become aggressive and passive. When people are under stress, they often feel nervous, they may experience symptoms such as anxiety, depression, feelings of unsecurity and lowered self-esteem. They become dissatisfied and as a consequence they underutilize their skills and abilities and their participation in the job decreases. Having all these symptoms, their quality of work decreases by letting faulty products or work pass through. This yields to lower level of performance of each individual under a stress situation.

The fourth multiple regression includes the study of job involvement (JI) as a dependent variable; and career and job attitudes (CJA), management support (MS), job performance (JP), and constituents of job related factors (E₁ to E₁₇). Variables entered in the regression according to their explanation of the amount of the variation in job involvement are in the following order.

On step number 1: CJA (career and job attitudes).
On step number 2: E₅ (Reaction to change in the job).
On step number 3: E₁₇ (Stressful unit).
On step number 4: E₁₅ (Doing work with all other hassles around).
Regression Results:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Significant t</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJA</td>
<td>.53436</td>
<td>.0006</td>
</tr>
<tr>
<td>E₅</td>
<td>-.14375</td>
<td>.0364</td>
</tr>
<tr>
<td>F₁₇</td>
<td>.20007</td>
<td>.0027</td>
</tr>
<tr>
<td>E₁₅</td>
<td>-.14835</td>
<td>.0420</td>
</tr>
<tr>
<td>(Constant)</td>
<td>.2.40170</td>
<td>.0001</td>
</tr>
</tbody>
</table>

F ratio = 10.20817  
Significant F = .0000  
$R^2 = .35871$

The regression is significant as a whole since $F$ ratio = 10.20817 is greater than significant $F = .0000$.

The coefficient of determination $r^2 = 35.871\%$. A moderate relationship exists between dependent and independent variables.

The regression equation is:

$$JI = 2.40170 + .53436 \text{ CJA} - .14375 \text{ E}_5 + .20007 \text{ E}_{17} - .14835 \text{ E}_{15}.$$ 

A positive relationship exists between career and job attitudes and job involvement. When people are happy and satisfied with their job, they become more involved, they love more their job and they feel a sense of accomplishment when they work hard.

Also a positive relationship exists between job involvement and stress in the workplace. While job involvement is a desirable trait at work, it enhances stress. Over-involvement in the job can cause individuals and managers to loose control over their work. They tend to neglect their personal needs, family and social
obligations and favor only their job as first priority in their lives. This fact will cause stress not only for themselves but also for their families. A negative relationship exists between the ability of individuals to adapt when changes occur in their work (E5) and job involvement. When individuals facing changes are not given information about this change and its effect on their job in the future, they resent to the change and they do not adapt quickly to the new situation. Being uncertain of what can the change brings to their job, people's involvement will decrease because they may feel detached from their job due to the new change occurring.

Moreover, a negative relationship exists between job involvement and working with hassles. The existence of hassles and noisy things on the job makes a person distracted from his job. He may loose concentration on his job and consequently his level of involvement decreases.

The last multiple regression includes career and job attitudes (CJA) as a dependent variable, and the independent variables are job involvement (JI), management support (MS) and factors related to stress (E1 to E17). The variables entering the equation are:

On step number 1: JI (Job involvement).
On step number 2: MS (Management Support).
On step number 3: E16 (Taking work home).
On step number 4: E8 (Work rules are published).
Regression Results:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Significant t</th>
</tr>
</thead>
<tbody>
<tr>
<td>JI</td>
<td>.25176</td>
<td>.0000</td>
</tr>
<tr>
<td>MS</td>
<td>.14288</td>
<td>.0134</td>
</tr>
<tr>
<td>E_{16}</td>
<td>-.09163</td>
<td>.0036</td>
</tr>
<tr>
<td>E_{8}</td>
<td>.08370</td>
<td>.0306</td>
</tr>
<tr>
<td>(Constant)</td>
<td>1.88088</td>
<td>.0000</td>
</tr>
</tbody>
</table>

F ratio = 15.58938

Significant F = .0000

r^2 = .46069

F ratio > Significant F, this means that the regression is significant as a whole.
The r^2 = 46.069% indicates a moderate relationship between dependent and independent variables.

The regression equation is:

\[ \text{CJA} = 1.88088 + .25176 \, \text{JI} + .14288 \, \text{MS} - .09163 \, E_{16} + .08370 \, E_{8}. \]

CJA is positively related to job involvement, to management support and to work rules that are published. But it is negatively related to taking job home and thinking about it when doing other things.

Being involved in their jobs, individuals try to do their work well and this gives them a sense of accomplishment. The more they feel attached to their job and the more they like their job, the highest their level of satisfaction with their jobs is.

When managers offer a good management support program, then employees feel that they are not neglected. Knowing that managers look for the
personal welfare of the working group, individuals become more satisfied and they develop a positive attitude towards their jobs.

In addition, when work rules are published and are the same for everyone, workers and managers feel at ease in their work. They know that no discrimination or distinction between one individual and another exists; consequently they feel more satisfied with their works.

In the contrary, when people take their job home and think about it when doing other things, they become exhausted and tired. Their motivation will decrease since the extra assignments prevent them from doing personal things. A negative attitude will arise and individuals will show dissatisfaction with their jobs.

Findings

The results of this study indicate that the most frequent causes of stress for organizational members are the following:

The obligatory overtime required when work overload exists. When people have time pressures or deadlines, when they have too much to do, or insufficient time to do it, and they are obliged to work overtime, then their job performance decreases. This is due to the fact that people, after an overtime, will be exhausted and tired and thus will not be productive as during normal period of work. French and Caplan in 1972 indicated that obligatory overtime and overloading may produce many unwanted outcomes affecting health and job performance (job dissatisfaction, excessive job tension, low-self esteem).

The next cause of stress was found to be work/home conflicts. When individuals place more value to their work and consequently neglect their family, social obligations and personal needs, stress can arise. For that people need to be alert to the fact that work problems are carried home and that family problems
causing stress in the workplace is the working conditions. The presence of hassles around, the discomfort resulting from poorly designed working environment (odors, extremes of temperature, unwanted noise, poor illumination) can produce stress and consequently decrease productivity.

The conflicts arising between people at work proved to be a major cause of stress. An individual having frequent arguments with his superiors, subordinates or customers shows job dissatisfaction. When conflicts in opinions and in expectations are common in the workplace, the consequences tend to yield lower productivity and performance. This was explained in the article "Stress management" by Hall and Savery in 1988.

The structure of the organization affects the level of stress experienced by employees and managers. When work rules are not published and are different for everyone, people will be subject to stress. Also poor communication that can reduce the clarity of understanding one's job requirements, leads to uncertainty and increases the stress level in the organization. The communication channels become more complex when the organization's size (number of employees) becomes larger.

The level in the organization hierarchy also affects the stress experienced in the workplace. The higher the level and the position, the higher the stress resulting from more responsibilities in the workplace. Moreover, employees who do not participate in the decision-making process especially in decisions affecting their work directly experience stress.

The reward systems add to the level of stress at work if not implemented properly. Employees need to know how their work is viewed by their managers. If they don't receive adequate appreciation or they are not recognized and rewarded for their contributions, then stress is created.
In addition, when workers feel that they are under constant supervision in order to follow and apply policies, they feel that they are untrusted and this creates a state of stress.

Many books, articles, and surveys suggest that the "Hidden enemy of productivity is stress". This statement is also proven in our research study. A negative relationship between job performance and job stress is found to be true. When people experience stress (resulting from one or more of the above-mentioned causes) in the workplace, they become aggressive and passive. The will not respond to a request from a supervisor, or they respond inaccurately and inefficiently.

People under stress experience symptoms such as depression, feelings of insecurity, anxiety, threat, embarrassment, lowered self-esteem, and sense of not belonging. Consequently, they become dissatisfied with their jobs, thus they will not work at their best efforts, they underutilize their skills, and their participation in their job decreases.

All these factors resulting from stress lead to a decreased quantity and quality of work. Being in a stressful situation, individuals do not care so much for their productivity, and consequently the job performance level decreases.

While job involvement is a desirable trait in the workplace, it enhances job stress. Over-involvement in the job can cause individuals to neglect their personal needs, to pay attention only to their jobs. But after a period of too much work, people need to recharge their battery in order to perform better in their job. Also over-involvement may cause workers to have conflicts with their families and social obligations.

A person who is over-involved in his job will have not only problems at home, but also his performance in his work will decrease because problems at home are brought to work.
Job performance is also affected by the management support. The more management offers support, appreciation, adequate training courses for their employees, the more those employees try to produce satisfactory quantity and quality of work on time. When employees receive appreciation and rewards for their good performance, they try to maintain their level in order try to loose their managers. Moreover, when managers look for the personal welfare of the group, workers will feel more secure about their jobs and their futures, consequently their performance level will increase.

Conversely, when employees realize that their work effort is not taken into consideration, when their managers do not care for them, then their performance will decrease because nothing pushes them to be motivated and to be productive. Life satisfaction and work satisfaction were predictive of reduced job stress. The higher the satisfaction in the workplace, the more ready employees are to perform above average. When workers are satisfied with their pay level, their rate of promotion achieved, and their status with the current position, then their satisfaction with their job will increase. This helps them to provide a good life for their families and to achieve their personal needs. But when workers are dissatisfied with their jobs, they become upset and stressed, they do not care for their performance, and they start thinking of changing their job. As a result of dissatisfaction with job, the turnover rate will increase and the performance level of the organization as a whole will suffer.
CHAPTER FIVE
RECOMMENDATIONS AND CONCLUSION

Recommendations

Stress management programs attempt to prevent and reduce stress-related emotional and behavioral problems in individuals and organization. Recommendations for dealing with stress are divided into personal and organizational strategies. Numerous techniques are available for dealing with stress and the following discussion addresses and recommends strategies.

Personal Strategies

The individual should be aware of stress susceptibility in a variety of situations. With an understanding of the sources of his discomfort, the individual may examine his behavior for signs of stress. A person can consider the following personal strategies to help manage stress:

- Awareness of Stress: The first step in reducing stress is to become aware of its existence and of factors contributing to it. Some common symptoms of stress include increased impatience, tension headaches, loss of appetite,..

- Development of a Positive Thinking. In solving important problems, it is better to think in terms of the best rather than the worst consequences. The more you think about what can go wrong, the less likely you are able to cope with stressors.

- Time Management. A person experiencing stress because of over works should make a list of tasks to be accomplished and assign high, medium or low priorities to each. Top-priority tasks should be tackled first. Individuals must ask for help when overloaded. It is essential to learn to delegate.
- Non work Activities. Such as religion, hobbies, and community services can reduce stress by satisfying individual needs. It is very important for individuals who experience work pressures to recharge their batteries away from office, in order to return to work refreshed and better able to fulfill the requirements of the job.

- Exercise. A planned program will reduce negative physical and emotional reactions to stressors and will help keep blood pressure, heart rate and cholesterol at acceptable levels. Physical exercise is an excelled way to dissipate tension and anxiety.

- Learning to Relax. An individual under stress must find a few minutes to slow down and relax, even on a busy day. Most stressors can't be dealt with immediately.

- Developing of Personal Relationships and Support Groups. Individuals should learn to share concerns. This will help avoid feelings of isolation. Discussing problems with friends may result in finding solution that reduce stress.

- Doing Something Nice For Yourself. Take time out. Do something that you like doing, away from the stress situation. Individuals must look after their physical and intellectual health and never allow to be isolated from the world. Art, music and recreation all help.

- Doing Something Nice For Others. Life satisfaction is higher for those who are more active in family and community services. A good way to relieve tension is to help other people and to be involved in group activities. Individuals who help other people to solve their problems generally have a better perspective of personal problems and a more positive attitude in dealing with stressful situations.
- Eating Properly. Overeating is a form of compensation of stress. Try to maintain a well-balanced diet.

Organizational Strategies

Firms can reduce stress by paying close attention to a few key areas.

- Open Communication Channels. Inadequate communication is a significant contributor to stress. The firm's expectations should be clearly communicated to employees, since effective communication between management and employees is important.

- Feedback and Performance Evaluation. Evaluations made against clearly specified behaviors together with feedback about job performance can be effective in reducing both uncertainty and role ambiguity.

- Carefully Planned Change Processes. By implementing change slowly, especially when presenting positive aspects of the change and evidence that the change is necessary, management can help employees prepare. Such preparation can help reduce stress arising from uncertainty, anticipation of change.

- Performance Standards. Setting performance standards and clearly communicating them can help manage stress by reducing uncertainty role ambiguity and work over/underload.

- Individual and Organizational Goal Setting. Goal setting is used to clarify the employee's understanding of the job as well as to reduce uncertainty, conflict and stress from time pressures and deadlines. Organizational goal setting, together with open communication of those goals between management and employees, can enable employees to evaluate their employee-organization fit. This can reduce stress from fear of obsolescence and lack of promotional opportunities.
- Time Out. Allowing employees to have time out from their tasks enable them to use individual coping techniques (meditation, relaxation...) in order to reduce such stressors as repetitive work, jobs dealing with the public, responsibility for other people work over/underload.

- Training Programs. Training programs that offer knowledge and skills in stress management can enable employees either to reduce or prevent a number of stressors such as uncertainty, change, lack of promotional opportunities, obsolescence, and under/over promotion.

- Job Rotation. Opportunities for changes in job assignment through job rotation can reduce stress especially from repetitive work.

- Time Management. Training in time management can improve goal setting, delegating and managing both short and long-term projects. Training in time management aims at reducing stress from time pressures and deadlines, work over/underload and low participation in decision making.

- Management Education Programs. Training managers in stress management strategies enable them to monitor stress in their work units, in addition training in performance evaluation feedback, communication and supervisory styles can help prevent managers from being a source of stress to their subordinates.

- Decentralization in Decision Making. By involving individuals who will be affected by decisions in the decision-making process, several causes of stress can be reduced (low participation in decision making, no sense of belonging).

- Development of Cohesive Work Groups. Team building can help reduce stress from lack of group cohesiveness & group loyalty & conflict.

- Monitoring of Physical Environment. A physical environment that is periodically evaluated for noise, temperature, pollution, with employee
involvement in the evaluation, can help pinpoint those factors that are sources of stress.

The items listed above are not intended to be all-inclusive, but present a partial list of strategies available for both individuals and firms in their fight against stress. Each individual and firm should undertake a self review to determine their potential weaknesses and adopt the appropriate strategy to combat these problems.

**Conclusion**

Every person encounters stress to some degree in all professions. Although firms generally recognize the value of their human resources, little research has been done regarding the effect of stress on job performance. A management commitment to reduce stress is essential to solving the problem. In addition, individuals must take an active role in combating the stress associated with their demanding work. Thus, successful stress management programs are composed of a combination of individual coping strategies and organizational prevention strategies. When used together, they can effectively reduce the negative effects of stress in the workplace. The success of a stress management program depends on the understanding, education and commitment of individuals working for the organization.

Clearly, this research has shown that stress in the workplace can influence performance; job tension may be one of the significant variables that influence job outcomes. This calls for additional research on stress in the workplace and his relationship to job performance.
Part I - Demographic Characteristics.

This part of the survey is concerned with your background and work experience. This information will help identify trends in the data for the different groups of respondents.

1 - What is your functional area?
   --- 1. Accounting
   --- 2. Finance
   --- 3. Marketing
   --- 4. Management
   --- 5. Personnel
   --- 6. Information Systems
   --- 7. Research & Development
   --- 8. Manufacturing/Production
   --- 9. Engineering
   --- 10. Sales
   --- 11. Other (specify)

2 - What is your level in the organization hierarchy?
   --- 1. Professional Staff
   --- 2. First level supervisor
   --- 3. Middle Management (Department head)
   --- 4. Strategic Management (Executive)
   --- 5. Other (Specify)

3 - What is your primary organization's business? (Please check one).
   --- 1. Manufacturing
   --- 2. Financial services
   --- 3. Merchandising
   --- 4. Public Sector
   --- 5. Health Care
   --- 6. Educational
   --- 7. Services
   --- 8. Other (specify)

4 - What is your organization's size? (total employees)
   --- 1. Less than 10
   --- 2. 10 - 30
   --- 3. 31 - 50
   --- 4. 51 - 100
   --- 5. Above 100

5 - For how many years have you been employed in this organization? -------

6 - Number of subordinates reporting to you. --------

7 - What is the highest level of education you have completed?
   --- 1. High school
   --- 2. College degree
   --- 3. M/S degree
   --- 4. PHD degree
   --- 5. Other (specify)

8 - Age: ------

9 - Gender:
   --- 1. Male
   --- 2. Female
Part II - Career and Job Attitudes.

Please indicate your agreement or disagreement with each of the following items by circling the one number to the right of each statement that corresponds most closely to your desired response.

1 = Strongly Disagree
2 = Disagree to some extent
3 = Uncertain
4 = Agree to some extent
5 = Strongly Agree

1- Overall, I would say that my personal needs have been met with my current career. 1 2 3 4

2- I am satisfied with my rate of promotion during my career. 1 2 3 4

3- I am satisfied with the pay level I have achieved during my career. 1 2 3 4

4- I am satisfied with the status that I have achieved during my career. 1 2 3 4

5- I frequently think of changing my job. 1 2 3 4

6- Few opportunities for advancement are available. 1 2 3 4

7- Usually I feel detached from my job. 1 2 3 4

8- Most of my personal life goals are job-oriented. 1 2 3 4

9- I like to be absorbed in my job most of the time. 1 2 3 4

10- If for hard financial circumstances in the organization, I had a decrease in the salary level, I will not quit working for this organization, nor my performance will be negatively affected. 1 2 3 4

11- I am ready to develop my knowledge (take relevant courses, read manuals and relevant books, ...) to enhance my performance and contribute to the success of this organization. 1 2 3 4

12- Generally speaking, I am very satisfied with my job. 1 2 3 4

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Part III - Job Involvement.

In this next section, we would like to find out the extend to which you feel involved in your job. Please circle the number which corresponds most closely to your desired response.

1= Strongly Disagree
2= Disagree to some extent
3= Uncertain
4= Agree to some extent
5= Strongly Agree

1- I feel when I do work well, it gives me a sense of accomplishment.  
2- In my job, I feel I want to be always hard working and competitive.  
3- I have very strong ties with my present job which would be very difficult to break.  
4- I believe that if I have something to be done well, I have to do it myself.

Part IV - Management Support.

The next section is used to assess management support. Please circle the one number of each statement that corresponds most closely to your desired response.

1= Strongly Disagree
2= Disagree to some extent
3= Uncertain
4= Agree to some extent
5= Strongly Agree

1- Training courses are readily available for us to improve ourselves in our job performance.  
2- I am always supported and encouraged by my manager to give suggestions and think of alternative solutions to a job-related problem.  
3- Employees receive training when assigned to new tasks.  
4- Employees receive adequate acknowledgment or appreciation when their work is really good.  
5- Management takes significant actions to reduce stress.  
6- Employees are given information regularly on how to cope with stress.  
7- Employees are recognized and rewarded for their contributions.  
8- Management looks out for the personal welfare of the working groups.  
9- Employees have current and clear job descriptions.
Part V - Job Related Factors.

This part of the survey is concerned with your opinion concerning to what extent the following factors are available in your organization or job-related environment. Please circle the number which corresponds most closely to your desired response.

1= Strongly Disagree
2= Disagree to some extent
3= Uncertain
4= Agree to some extent
5= Strongly Agree

1- Obligatory overtime is frequently required.  
2- Employees have little control over how they do their work.  
3- Consequences of making a mistake on the job are severe.  
4- Work loads vary greatly.  
5- Employees must react quickly and accurately to rapidly changing conditions.  
6- Employees have little or no privacy.  
7- Employees are free to talk with one another.  
8- Work rules are published and are the same for everyone.  
9- Employees have a place and time to relax during the work day.  
10- I feel free to offer suggestions concerning policies and procedures affecting the organization.  
11- Management here is quick to criticize poor performance.  
12- My work place environment is not very pleasant.  
13- My job interferes with my family, social obligations and personal needs.  
14- I tend to have frequent arguments with my superiors, coworkers, subordinates or customers.  
15- It is hard to get your work done with all the other hassles around.  
16- I often take my job home with me in the sense that I think about it when doing other things.  
17- Overall, working in my unit is stressful.
Part VI - Job Performance.

Please circle the number which corresponds most closely to your best description of the following items related to performance on the job.

1= Almost never  
2= Some of the time  
3= About half of the time  
4= Most of the time  
5= Almost always

1- Mistakes are usually made because of various uncontrollable reasons.  
2- Sometimes, it is difficult to produce satisfactory quantity of work.  
3- "Extra" or rush assignments cannot be promptly completed.  
4- In general, instructions, guidelines and set policies require constant supervision to be followed and applied.  
5- Eagerness and interest as characteristics of attitude towards work are prevailing in this organization.  
6- Team spirit and cooperation always characterize the type of work carried out.  
7- Required tasks are usually completed on time.  
8- The high skill and knowledge level facilitate solving day-to-day problems.  
9- Adjusting to new situations is not possible or successfully done.  
10- In general, performance on job is above average.

- While on the job,

<table>
<thead>
<tr>
<th></th>
<th>Many times</th>
<th>3 times a day</th>
<th>Twice a day</th>
<th>Once a day</th>
<th>Rarely</th>
</tr>
</thead>
<tbody>
<tr>
<td>I do recess</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I do walk</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I take coffee</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I do stretching</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I visit my colleagues</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- I do exercise (Golf, Tennis, aerobics, Swimming...)

□ Daily
□ Regularly
□ Occasionally
□ Rarely
□ Never
- I usually go for:
  □ Periodic vacations (monthly)
  □ Yearly vacation
  □ Occasional vacations
  □ Rare vacations
  □ No diversions or vacations.

- When confronted with stressful situations, I consult:
  □ Regularly with family, friends, professionals.
  □ A few times a week
  □ On occasion, perhaps with a strong crisis.
  □ Rarely
  □ Never.

Thank you for answering all questions.
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Dissertations
