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THE EFFECTS OF A STRESS REDUCTION PROGRAM
ON LAW ENFORCEMENT AND CORRECTIONS OFFICER
JOB SATISFACTION AND DISSATISFACTION
IN THE WASHTENAW COUNTY SHERIFF'S DEPARTMENT

presented by

Lynn Marie Fransway

has been accepted towards fulfillment
of the requirements for

M. S. degree in Criminal Justice

Kenneth C. Christian
Major professor

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THE EFFECTS OF A STRESS REDUCTION PROGRAM
ON LAW ENFORCEMENT AND CORRECTIONS OFFICER
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By

Lynn Marie Fransway

A THESIS

Submitted to
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ABSTRACT

THE EFFECTS OF A STRESS REDUCTION PROGRAM ON LAW ENFORCEMENT AND CORRECTIONS OFFICER JOB SATISFACTION AND DISSATISFACTION IN THE WASHTENAW COUNTY SHERIFF'S DEPARTMENT

By

Lynn Marie Fransway

The exploratory research reported in this thesis investigated the effects of a Stress Reduction Program on the self-reports of job satisfaction in law enforcement and corrections personnel in a medium-sized sheriff's department. The ten month program had four stress reduction intervention modes: physiological training, psychological training, a combination of physiological and psychological training, and professional training.

It was hypothesized that the Stress Reduction Program would result in 1) an increase in job satisfaction for the entire experimental group, 2) increases of satisfaction within groups, and 3) significant differences of satisfaction between the four groups.

The research hypotheses were generally not supported. It was concluded that the Stress Reduction Program did not have a significant effect upon job satisfaction of the participants, and that no one form of intervention was more powerful than another in increasing satisfaction.

Dedicated to my Mother, Father and Brother
Claire, Robert and Tony Fransway

Because you are my best friends,
and are so dear.

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CHAPTER I

INTRODUCTION

Within the last decade, the problem of occupational stress experienced by professionals working in the Criminal Justice System has been identified. Stress endured by law enforcement officers received scant attention until the mid-1970's,¹ and research into stress sustained by corrections officers was, and still remains, virtually non-existent. Most of the initial research efforts have involved law enforcement stress, with development of methods and programs aimed at understanding and reducing this phenomenon.

Since occupational stress is a relatively recent focus of criminal justice research, many of the studies undertaken have been exploratory and descriptive in orientation. Early studies concentrated primarily upon

¹James Hillgren, et. al. "Primary Stressors in Police Administration and Law Enforcement." Journal of Police Science and Administration, Vol. 4, 4, December 1975, p. 445. And George Kelling and Mary Pate, "The Person-Role Fit in Policing: The Current Knowledge and Future Research," in William H. Kroes and Joseph J. Hurrell, Job Stress and the Police Officer: Identifying Stress Reduction Techniques, National Institute for Occupational Safety and Health, 1975, p. 117.

²Ibid., Kelling, p. 128.

the identification and definition of stress and stressors. Subsequent endeavors involved analyzing the relationship between stress and the delivery of police services, between stress and the individual officer's psychological and/or physiological status, and on programmatic methods designed to minimize police stress. Most of the research efforts have not been empirically oriented.

Need for the Study

The field of law enforcement and corrections stress research is still in the early stages of development. Many questions remain unanswered, and there is a dearth of empirical research in these efforts to clarify and understand the problem. There is a need to develop an empirical, expanded understanding of law enforcement and corrections stress in general, of the types of indices used to measure stressors, and of the various forms and effectiveness of stress reduction interventions.

Purpose of the Study

The exploratory research conducted in this thesis investigates the effects of a carefully developed stress reduction program on the self-reports of job satisfaction in law enforcement and correctional personnel in a medium-sized sheriff's department. Pre- and post-test results of a Police Job Stress Inventory are analyzed in an effort to identify which of the four types of program interventions

most affect self-reported job satisfaction of program participants. These four intervention modes are professional training, psychological training, physiological training, and a combination of psychological and physiological training interventions.

Research Hypotheses

Several primary research hypotheses will be tested based on the following assumptions:

Assumption: Persons in the law enforcement and corrections professions experience stress as a result of the nature of their occupation.

Assumption: Self-reported job satisfaction or job dissatisfaction may serve as an index of occupational stress.

Assumption: The extent to which an officer experiences stress will be reflected in the self-reports of the individual.

Hypothesis: The implementation of a stress reduction program will result in an increase of self-reported job satisfaction on the part of subjects involved in the program.

Hypothesis: There will be significant differences between the four intervention groups in increases of self-reported job satisfaction.

IF the above research hypotheses are supported, then several additionally specific sub-hypotheses will be tested. The assumptions and related hypotheses follow:

A. Assumption: The psychological training intervention will have some effect on the level of stress experienced by the officer.

Assumption: The physiological training will have some kind of an effect on the level of stress experienced by the officer.

Assumption: The psychological and physiological training will have some kind of effect on the level of stress experienced by the officer.

Assumption: The professional training intervention will have some kind of an effect on the level of stress experienced by an officer.

Assumption: A combination of interventions may be more powerful than any one single intervention.

Hypothesis: The combination of psychological and physiological stress reduction interventions will have the greatest effect on self-reported increases of job satisfaction.

B. Assumption: Of the three types of interventions, psychological, physiological and professional, one will have a greater effect on reducing stress than the others.

Assumption: Law enforcement and corrections personnel are traditionally somewhat threatened by the possibility of mental illness, and by psychologists and psychiatrists, and are therefore less receptive to psychological training.

Assumption: Law enforcement and corrections personnel find physical exercise to be an acceptable, non-stigmatizing type of activity.

Hypothesis: The physiological intervention of the stress reduction program will have a greater effect on increasing self-reported job satisfaction than either

the psychological or the professional interventions.

C. Assumption: Awareness of stress is an important factor in stress reduction.

Assumption: Expression of the experience of stress is an important factor in stress reduction.

Assumption: The professional group will not be actively discussing stress, per se, and therefore will be the least aware and least expressive, as a group, of personal stress.

Hypothesis: The professional intervention of the Stress Reduction Program will have the least effect on increases in self-reported job satisfaction in comparison to the psychological, physiological, or combination psychological and physiological interventions.

The testing and analysis of these hypotheses will clarify the extent to which each type of intervention is reflected in the self-reported job satisfaction of participants.

Theory

The theoretical framework upon which this research is founded has evolved from the work of Hans Selye, the pioneer of stress research. Selye defines stress as the "non-specific response of the body to any demand."³ It is

³Hans Selye. The Stress of Life, McGraw-Hill Book Co., New York, Revised Edition, 1978, p.1.

"non-specific" in that it can be produced by almost any agent.⁴ The defensive reaction to a stressor is described in terms of the "General Adaptation Syndrome,"⁵ a syndrome referring to a group of symptoms and signs which appear together.⁶ The three stages of this response consist of 1) the alarm reaction, wherein the body initially reacts to the first exposure to a stressor; 2) the stage of resistance, wherein the characteristic signs of the alarm response subside and resistance occurs "if continued exposure to a stressor is compatible with adaptation;"⁷ and 3) the stage of exhaustion, wherein continued exposure to a stressor exhausts the energy used for adaptation, and where the signs of the alarm reaction reappear, and become irreversible.

A stressor is simply defined as "that which produces stress."⁸ Selye notes that the most important stressors for people are emotional, and that some of the more health threatening stressors relate to occupations.⁹ Specifically

⁴Ibid., p. 63.

⁵Ibid., p. 1.

⁶Ibid., p. 472.

⁷Hans Selye. Stress Without Distress, Signet Books New York, 1975, p. 27.

⁸Op. cit., Selye, 1978, p. 472.

⁹Ibid., p. 370-1.

related to police work, Selye stated that "it is hardly surprising that highly responsible and dangerous police assignments can be the cause of considerable distress."¹⁰ He further cited shift work as probably being the most severely disturbing to the physiological functions of corticoid and adrenaline production.¹¹ This is particularly relevant in police and corrections work where officers frequently change working hours to accommodate any one of three daily shift schedules.

It is upon the above described theoretical framework that the experimental design in this research was developed to test the types of remedies available for reducing the psychological and physiological distress resulting from stressors encountered in law enforcement and corrections.

Overview of Thesis

The following outline represents the format for discussion and analysis of results in the ensuing chapters of this thesis.

In Chapter Two, the literature related to police stress are reviewed and summarized.

¹⁰Ibid., p. 376.

¹¹Ibid., p. 374.

The experimental design of the entire Stress Reduction Program, as well as that portion specifically relevant to this thesis, are presented in Chapter Three.

In Chapter Four, there is an analysis of demographic data gathered from departmental records on the characteristics of all subjects in the Stress Reduction Program. There is also an analysis of the pre-test data gathered from the Police Job Stress Inventory which provides base line, descriptive statistics on the general reports of the participants as they relate to levels of job satisfaction and dissatisfaction in the department.

An analysis of the results of the pre- and post-test Police Job Stress Inventory, and of the hypotheses testing is presented in Chapter Five.

In Chapter Six, additional information on the subjects relating to variables of race, sex, division, age and seniority as compared to job satisfaction are presented. An analysis of pre-test satisfaction levels for those subjects who dropped out, compared to those who did not is also included.

CHAPTER II

REVIEW OF THE LITERATURE

Law Enforcement Stress Research

It is generally conceded that the law enforcement occupation is a high stress profession. High incidences of the indices of stress have been found among police officers. For example, suicide rates have been found to be higher among police officers than the general public;¹ alcoholism has been considered a major problem;² divorce rates are higher for police officers than for the general public;³ and psychosomatic symptoms and physiological disorders associated with stress are found at higher rates among police professionals than many other occupations.⁴

¹Paul Friedman. "Suicide Among Police," in Edwin Schneidman's Essays in Self Destruction, Science House, Inc., New York, 1967. And, Michael Heiman, "The Police Suicide," Journal of Police Science and Administration, Vol. 3, 3, September 1975, pp. 267-273.

²John Stratton. "Police Stress: An Overview. Part I and Part II," Police Chief, April 1978.

³John Blackmore. "Are Police Allowed to Have Problems of Their Own?" Police Magazine, Vol. 1, 3, July 1978, pp. 47-55.

⁴William Kroes, et. al. "Job Stress in Policemen," Journal of Police Science and Administration, Vol. 2, 2, June 1975, p. 145.

Identification of Stressors. The question of what factors cause or contribute to the levels of stress experienced by law enforcement officers was initially researched by William Kroes.⁵ Kroes' research was conducted in 1972 at the Cincinnati Police Department, and consisted of interviews with one hundred policemen during regular patrol duty. The forty-five minute interview presented four questions designed to elicit information on job stress. The study identified major categories of stressors experienced by officers: administration, courts, community relations, equipment, line of duty crisis situations, changing shift routines, isolation, boredom and inactivity. Kroes determined that of these stressors, the most significant ones were those which threatened the officer's sense of professionalism; e.g., lack of professional recognition, negative public opinions, and little participation in the decision making process vis-a-vis policies and procedures.

Kroes' work was followed by numerous articles speculating on identifying the stressors in law enforcement. The most comprehensive of these works, by Eisenberg,⁶ outlines

⁵Ibid., pp. 145-155.

⁶Terry Eisenberg. "Labor Management Relations and Psychological Stress: View From the Bottom," Police Chief Vol. 49, 4, April 1978, pp. 12-15.

the bulk of the major stressors identified to date, and considered of primary importance to the police. The identified stressors include: fear of physical harm, sense of uselessness, cumulative effects of stress, incompetency, being a minority officer, withdrawal of friends, being a non-conformist in a highly conforming environment, role conflict, danger, the stressor of seeing people in pain, the absence of closure in one's work, the problem of low rewards for the work, problems with supervisors, peer pressure, lack of career development opportunities, poor equipment, shift work, departmental policies, excessive paperwork, disciplinary policies, poorly devised rating systems, methods of assignment within the job, community attitudes, problems with the courts, problems with the correctional system of the criminal justice system in general, unfair press coverage, minority relations with the community, inadequate referral systems, and difficulties in interacting with other local government agencies.

Pertinent Studies. The need for additional research and implementation of stress reduction programs has been indicated in several studies to date. There have been many ad-hoc types of stress reduction programs implemented in the past few years, the majority of them consisting of some kind of provision for counseling services or facilities for physical fitness and exercise. Few of these programs have

been subjected to the empirical analysis needed to objectively evaluate the success and effectiveness of services for participants. Several studies have aimed at identifying various types of services which might be most effective in stress reduction.

One such study was conducted by James Anderson, in his analysis on "The Effect of EMG Biofeedback and Relaxation Training on Police Personnel Responses to Occupational Stress."⁷ This study investigated the ability of twenty-four policemen to learn a relaxation response designed to assist in adaptation to stress. Four types of training were administered: one group practiced electromyogram feedback (EMG), which provided visual and sound recordings of electric waves associated with skeletal muscle activity; one group practiced a combination of EMG feedback and conscious relaxation training; the third group practiced solely the relaxation training, without benefit of EMG feedback. A fourth group was a control group, wherein subjects were asked to relax, but not given any instructions on how to do so.

The results of the study indicated that EMG feedback was effective in helping the officers achieve a state of physiological relaxation, and in fact, was more effective

⁷James Anderson. "The Effect of EMG Biofeedback and Relaxation Training on Police Personnel Responses to Occupational Stress," Dissertation Abstracts, July 1975, 3665-B.

than any of the other methods. Of note, however, was that while the electromyogram feedback group succeeded in reducing levels of arousal in terms of muscular relaxation, there were no significant differences between groups in terms of the State-Trait Anxiety Inventory, an instrument that measures a person's characteristic predisposition to anxiety, as well as his immediate subjective, consciously perceived anxieties. This research points to the need for a better understanding of the nature between the physiological and psychological aspects of stress and stress reduction techniques, and of the effectiveness of such techniques on subjects.

Another research effort by Zausmer investigated the relationship between personality variables of Machiavellianism and Risk Taking, the police environment, and subjects' health in the Oklahoma City Police Department.⁸ In a study of three hundred and ten law enforcement agents, Zausmer gathered data on 1) blood pressure, 2) indices of Machiavellianism and Risk Taking; and 3) personal information on employee health status and stress factors related to the job and working environment. The data gathered

⁸Fred Joseph Zausmer. "Factors of Stress in the Oklahoma City Police Department: A Consideration Thereof," Dissertation Abstracts, 1976, 1189-B; and Tom L. Heggy and Fred Zausmer, "Bullets and/or Management," Public Safety Labor Reporter, May 1976, pp. 28-34.

on stress factors were then related to the personality and physiological data.

Conclusions in this study were that 1) there is a relationship between aspects of Machiavellianism, Risk Taking, the law enforcement environment, and health; 2) the number of illnesses reported by participants in the study were higher than those found in other studies; 3) management is the source of most of the stressors associated with occupational health problems; and 4) participants had higher degrees of hypertension than found in other occupations, and that subjects' blood pressure readings were associated with increased insurance premiums and increased mortality.

Recommendations evolving from this study included provision of stress training programs for police personnel, and further research to ascertain the kind of work environment conducive to effective, less stressful policing.

A third study, by Gary W. Singleton,⁹ focused on "The Effects of Job Related Stress on the Physical and Psychological Adjustment of Police Officers." It tested the hypothesis that increases in physically threatening encounters

⁹Gary W. Singleton. "The Effects of Job-Related Stress on the Physical and Psychological Adjustment of Police Officers," Dissertation Abstracts, 2384-B.

would result in increased physical, psychological and interpersonal difficulties and decreased job satisfaction. Ninety patrolmen were divided into three stress groups in terms of their history of on-duty stress. Participants took a battery of psychological tests, including the Cornell Medical Index, the Taylor Manifest Anxiety Scale, the Situation Anxiety Scale, the Crown-Marlowe Social Desirability Scale, and SCL-90 (Symptoms Checklist), and a Job Satisfaction Scale.

Results of this study indicated that significant differences could be found among the three stress groups on scales of hostility, paranoia and interpersonal sensitivity and difficulty. The specific relationship between physical stress, and the presence of hostility, suspiciousness, social discomfort and interpersonal difficulties was unclear. The officers reported no increase in physical or psychophysiological complaints, anxiety or depression, and the research attributed this to defensiveness towards the presence of an "outsider" administering psychological instruments.

This research effort indicated a need for clarification between the physiological and psychological dynamics of stress, and the indices of stress in a police environment. Further, there is a need for additional research to determine which kinds of interventions are most effective in reducing police stress.

Corrections Stress Research

While a great deal of criminal justice research has focused on the qualities and problems of law enforcement officers, Farmer notes that researchers have "systematically ignored correctional personnel."¹⁰ Certainly, this has been the case in the area of occupational stress experienced by corrections officers. No studies to date were available in the literature on correctional stress.

As Farmer points out, this is unfortunate in that many of the same problems and situations encountered by law enforcement officers in their work are similarly encountered by corrections officers. They are both 1) involved in working with people, 2) fulfilling "socially authorized authoritarian roles" designed to protect the safety of the public, and 3) involved with occupational factors of danger, fear, and isolation.¹¹

Expanding on this list, several other parallels might be drawn between law enforcement and corrections stressors. Corrections officers encounter a potentially volatile population on a daily basis, and may be victims of assaults by inmate personnel; thus, they too may well fear physical

¹⁰Richard E. Farmer. "Cynicism: A Factor in Corrections Work," Journal of Criminal Justice, Vol. 5, 3, Fall 1977, p. 237.

¹¹Ibid., p. 239.

harm to their being. They also work in a paramilitary structure, and may be victims of similar pressures as those described by Eisenberg for police: role conflict, low rewards for work, problems with supervisors and peer pressure, being a non-conformist in a conforming environment, lack of career development opportunities, poor facilities, shift work, departmental paperwork, poorly devised rating systems and disciplinary policies, methods of assignment with the job. At this point, discussion is speculative due to lack of empirical research.

Relationship of Stress to Job Satisfaction

The relationship between occupational stress and job satisfaction has not been clearly explicated in the literature. Job satisfaction, however, may be utilized as an index of occupational stress. Cooper and Payne indicate that "the most general dimension of the work environment, prestige, or status level of a job is clearly associated with higher job satisfaction and with better mental health."¹² These most general dimensions also appear to be inextricably related to stress as well. One is struck, when reading about job satisfaction and dissatisfaction, by the marked similarity between satisfaction factors, and factors

¹²Cary Cooper and Roy Payne. Stress at Work, John Wiley and Sons, Chichester, 1978, p. 13.

relating to the police stressors described by Kroes and Eisenberg. In Cooper and Payne's extensive review of job satisfaction literature, the following factors were related to low job satisfaction:

- 1) Conditions at work: presence of health and safety standards, and unpleasant work conditions, such as fast paced and physically demanding work; long hours of work (if this is forced on the worker); afternoon and night shifts; unclear tasks; lack of control over work, such as pacing.
- (2) Work itself (Job content): lack of use of skills and abilities; highly fractionated repetitive tasks involving few different operations.
- 3) The Work Group: no opportunity to interact with co-workers; work groups which are large and lack cohesiveness; non-acceptance by co-workers.
- 4) Supervision: no participation in decision-making; inability to provide feedback to supervisor; lack of recognition for good performance; supervisors who are not considerate or understanding.
- 5) The Organization: large organization with 'flat organization structure' (relatively few levels in the organization); having a staff position (vs. a line position); discrimination in hiring.
- 6) Wages and Promotion: low financial rewards or perceived inequity in wages; lack of promotional opportunities.¹³

It is not unreasonable, therefore, to conclude that in light of previous research, job satisfaction may be viewed as an indication of stress levels experienced by people in a working environment. Indeed, the concept that job satisfaction is dependent on the independent variable of levels

¹³Ibid., p. 25.

of stress has been specifically noted in Cooper and Payne's review of the literature.

Several studies on police job satisfaction point to the similarities between factors of job satisfaction, and factors of stress. Jeffrey Slovak surveyed eight different police departments in six different western and midwestern states on various aspects of job satisfaction.¹⁴ The self-administered survey was distributed to small departments, ranging in sizes from seventeen to eighty-three personnel; the return rate was no less than a five/eighths response level in each department. Each officer was requested to indicate his level of satisfaction with various aspects of his job, using a Likert type scale of highly dissatisfied, dissatisfied, neutral, satisfied, and highly satisfied.

The results of the study indicated a relatively high level of job dissatisfaction, evidenced by only twenty-one percent of the satisfaction aspects having a mean score rising above neutrality. It was further concluded that there are three major dimensions of satisfaction in law enforcement: 1) "hardware/preparation" dimension; 2) "compensation/advancement" dimension; and 3) "management/organization" dimension. These three aspects of job satisfaction would contain many of the stressors reported by officers in the stress research.

¹⁴Jeffrey S. Slovak. "Work Satisfaction and Municipal Police Officers," Journal of Police Science and Administration, Vol. 6, 4, 1978, p.462-470.

A study by Griffin, et. al.,¹⁵ examined different factors associated with job satisfaction, and related it to educational attainments of officers. A large southwestern police department serving a population of 500,000 completed 756 questionnaires. One of the questions posed on a five-point Likert type scale was: "To what extent do you feel satisfied with your job as a police officer?" There were no significant differences between those respondents who had a high school education or less, those who had some college, and those who had obtained a college degree, all reported a high degree of job satisfaction.

Officers also reported perceptions on their personal and supervisory effectiveness in policing, as well as the extent to which they find themselves getting angry or tense on the job. Officers with a high school education felt that both they, and their superiors, were doing a good job, and reported higher job satisfaction; officers with a college degree apparently did not relate job satisfaction to the quality of work of their superiors. The researchers also concluded that persons with high school educations associate feelings of tension with less job satisfaction; increases in tension corresponded with increases in job dissatisfaction. It was found that in college educated officers, however,

¹⁵Gerald R. Griffin, Rober L. Dunbar, and Michael E. McGill. "Factors Associated With Job Satisfaction Among Police Personnel," Journal of Police Science and Administration, Vol. 6, 1, 1978, pp. 77-85.

reported tension was "weakly but positively related"¹⁶ to job satisfaction. Feelings of anger, however, were associated with increases in job dissatisfaction.

Additional analyses of questions revealed that officers who believe the police role "involves enforcing rather than questioning justice,"¹⁷ also have higher job satisfaction. The researchers also found support for the hypothesis that a reduction in the uncertainty and conflict found in the police role resulted in increases of job satisfaction. This was particularly important in that this uncertainty and conflict "may generate stress for the police officer, which, in turn, may result in feelings of job dissatisfaction."¹⁸ Again, the relationship between stress and job satisfaction and dissatisfaction is confirmed.

¹⁶Ibid., p. 81.

¹⁷Ibid., p. 83.

¹⁸Ibid.

The Importance of Stress Research

In the literature, it seems as though almost every aspect of the professional life of law enforcement agents has been identified as a stressor. The questions inevitably arise: How important are these stressors? Is police work more stressful as an occupation than other types of occupations? What can be done to reduce police stress? The same questions may be posed for the corrections occupation.

Kroes believes that while stressors on policemen are not unique when compared to other occupations, one may answer an "unqualified yes" in response to the question of whether police work is a uniquely high stress occupation.¹⁴

Perhaps more important than whether policemen experience stress at greater levels than other occupations, is whether the impact of this stress is ultimately more damaging for the policeman and for society. Given equal levels of stress, the potential amount of damages which may occur in the law enforcement profession extend far beyond the realm of the individual, into the realm of the community. The types of services delivered by officers who are entrusted with the responsibility of carrying out the laws, and are empowered both on and off duty with the use of force in order to do so,

¹⁴Op. cit., Kroes, p. 155.

must be implemented in an effective, careful, and just way. High levels of stress, and even low levels of stress, may have an important impact on the officers which ultimately affect the manner in which services are delivered. The importance of understanding and reducing stress experienced by law enforcement agents, therefore, is of vital importance to both the daily operations of the criminal justice system, and to society in general.

In a corresponding vein, corrections officers also carry an important responsibility to deal with prison populations in a humane and just manner. Overloads of stress may lead to ineffectiveness or abuses of power, to the detriment of both the officer and the inmate. From a rehabilitative standpoint, and for the benefit of the inmate, the officer, and society in general, it is vital that corrections officers be provided with opportunities to understand and alleviate stress resulting from aspects of their occupation.

Summary

A review of the literature indicates that much research remains to be done in the area of police stress, and that there is a great need for research into corrections officers stress. Current research is primarily aimed at law enforcement, and is just immediately past the point of identifying what constitutes police stressors. There is a need to determine, among other important aspects of stress, what

types of methods may be employed to reduce stress among law enforcement and corrections professionals. There is a need to ascertain the relationships between utilization of different types of methods, and their effects on perceived levels of stress. In addition, research needs to be undertaken to analyze the effects of stress reduction techniques upon job satisfaction as one index of stress.

Towards meeting these needs, the research in this thesis will analyze the effectiveness of various types of stress reduction techniques upon one indicator of law enforcement and corrections stress: job satisfaction.

CHAPTER III

DESIGN OF THE STUDY

The exploratory research in this thesis is a subcomponent of a larger Stress Reduction Program which was conducted under the auspices of a National Institute of Mental Health Project, granted to Michigan State University, and operating in the Washtenaw County Law Enforcement and Corrections Facility. In order to fully understand the specific area of study relevant to this thesis, it is important to present a broad overview of the experimental design of the Stress Reduction Program.

The Stress Reduction Program

The Stress Reduction Program was an experimental study, oriented towards determining whether various kinds of stress reduction intervention techniques had an effect on reducing levels of stress experienced by law enforcement and corrections professionals. The broad research effort sought to determine whether there is a direct relationship between a stress reduction program and improved job performance, and furthermore, to ascertain whether physiological, psychological, professional training, or a combination of physiological and psychological interventions were more conducive to stress reduction.

The comprehensive focus of the Stress Reduction Program was to test three hypotheses:

Hypothesis₁: Presentation of a stress conditioning program will result in improved police performance.

Hypothesis₂: Both physically and psychologically-based stress programs will present greater improvement than the general Hawthorne effect associated with any experimental program.

Hypothesis₃: One of the two approaches, physical or psychological, will result in greater improvement than the other.

Towards testing these hypotheses, the Stress Reduction Program was conducted in four different modes. One approach consisted of purely physical interventions. A second utilized purely psychological interventions. The third consisted of a combination of both physical and psychological interventions. And the fourth consisted of professional, in-service training. The fourth intervention was not a strictly null treatment, nor a pure control group, in that deliberate efforts were made to bring about improvements. What distinguished this mode from the other three was that: a) no training or conditioning specifically related to stress was employed; b) no professional stress trainers were involved; and c) no resources beyond regular departmental budgets were utilized.

Selection of Participants

Population. The population from which the sample groups were drawn consists of all regular, full-time road patrol personnel, detectives, and corrections officers in the Washtenaw County Law Enforcement and Corrections components of the Sheriff's Department. Included in this population are line officers and sergeants drawn from the Road Patrol Unit, the Corrections Unit, and the Detective Bureau. Excluded from the population are the following top level command personnel: The Sheriff, the Undersheriff, the Executive Lieutenant, the Commander of the Road Patrol, and the Commander of the Corrections Unit. The total number of individuals included in this population number one hundred and fifty-three.

Sample. All eligible individuals as delineated in the above population description were listed and numbered in alphabetical order. Using a random numbers table, ninety names were drawn, and invitations were extended to all individuals on the list. Out of the invitations extended, fifty-nine individuals agreed to participate. From a second list of randomly drawn names, twenty-nine individuals agreed to participate in the program, resulting in the desired n of eighty-eight voluntarily involved subjects.

From the total one-hundred and fifty-five population subjects, therefore, eighty-eight of those eligible agreed to participate in the Stress Reduction Program; thirty-nine of those eligible and approached declined participation in the program; and twenty-eight of those eligible were neither approached nor offered participation opportunities in the program.

Method of Invitation. . Participation in the Stress Reduction Program was on an entirely voluntary basis. Through the methods described above, the individuals were contacted by staff from the Social Justice Team Project and were requested to speak in private with the staff person extending the invitation. The extension of this invitation was a private matter, and no one except the project staff personnel and the invitee knew that the invitation was being extended or knew of the outcome of the invitation should the invitee choose not to participate.

The invitation was extended in a standardized format, with a verbal explanation of the project given to the invitee, and assurances of the protection of their privacy per the confidentiality restrictions designed for the Stress Reduction Program. The invitee was then given an "Informed Consent Form" which described the Stress Reduction Program in writing, and reiterated the verbal information shared by project personnel with the invitee. (See Appendix A.)

If the individual agreed to participate, he/she authorized, with signature, the "Informed Consent Form," which was witnessed by signature on the part of the Project Staff personnel extending the invitation.

If the individual declined participation in the program, indication of an extension of the invitation was noted only in the confidential records of the Project, and otherwise remained strictly confidential. However, once an individual agreed to participate, the fact that he was participating was no longer considered a strictly confidential matter. All other concerns of confidentiality as described below were approached per the restrictions designed in the Program.

Since participation in the program was an entirely voluntary matter, the subjects could, at any time, withdraw from the program. Assurances were given to the subjects that such a withdrawal would have no adverse professional or personal effects on them from either the Department or the Social Justice Team Project.

Assignment to Intervention Groups

Of the eighty-eight subjects who agreed to participate in the program, four groups were formed consisting of twenty-two subjects in each group. Assignment to these groups was accomplished by first proportionately stratifying the entire sample according to sex, age and unit assignment, and then randomly selecting for each group based on this stratification.

The reason for the age and sex stratification was to ensure that all groups would be equally represented in terms of physical ability as influenced by age and sex considerations since such variables would have an effect upon physical performance. Composition of each group in terms of unit assignment are indicated in Table I, below.

TABLE I					
<u>Group Composition by Unit Assignment</u>					
<u>Assignment</u>	<u>Group A</u>	<u>Group B</u>	<u>Group C</u>	<u>Group D</u>	<u>Total</u>
Deputies	10	10	10	9	39
Corrections Officers	5	7	7	11	30
Sergeants	3	2	2	0	7
Lieutenants	1	0	0	0	1
Detectives	3	3	3	2	11
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Total per Group	22	22	22	22	88

The labels assigned to each randomly selected intervention group were: Group A, Physical and Psychological Training; Group B, Physical Training; Group C, Psychological Training; and Group D, Professional Training.

Demographic Data and Stressors Indices Data

Demographic data was gathered on the sample, and for the entire department, on variables of age, sex, race, date of hire and seniority, rank and division. In addition, data was gathered from department records on each participant, and in some cases on the entire population, for various occurrences which may be related to, or indicative of, levels of stress. This data includes the number of vehicle accidents, injuries, sick time used, compensatory time used, leaves of absences, disciplinary actions, and citizen complaints. Information was collected for a period of several years preceeding implementation of the Stress Reduction Program, as well as for the entire implementation period. This data is to be used in the final analysis of the Stress Reduction Program.

Pre-Testing and Post-Testing

Both psychological and physiological pre- and post-tests were administered to subjects. The pre-testing occurred from January to early March of 1978; the post-testing occurred from January to early April of 1980, following completion of the ten month intervention period. Pre- and post-testing were essentially the same in content and format as described below. Psychological testing was administered on the same day as physiological testing for both pre- and post-tests.

Psychological Tests. Psychological testing consisted of subject completion of five different self-administered instruments. The first instrument was the Michigan Alcoholism Screening Test (MAST),¹ which is designed to identify individuals who are experiencing problem drinking or alcoholism. The second instrument was the Symptoms Checklist (SCL.90),² which is a measurement of self-reported physiological symptoms categorized into nine primary dimensions, and three global indices of distress. The third is the State-Trait Anxiety Inventory (STAI),³ a self-report scale indicating how anxious an individual presently is, as well as how anxious he characteristically is. The fourth was the Police Job Stress Inventory (PJSI),⁴ which is a broad-based research tool designed to identify areas of stress in a police environment. The fifth was the Myers-Briggs Type Indicator (MBTI),⁵ which is a questionnaire designed to identify people in terms of Jung's theory of psychological types.

¹Melvin Seltzer. University of Michigan Psychiatric Clinic (Riverview), Ann Arbor, Michigan.

²Available through the University of Michigan Psychiatric Clinic (Riverview), Ann Arbor, Michigan.

³C.D. Spielberger, R.L. Gorsuch and R. Lushene. Consulting Psychologists Press, Palo Alto, California.

⁴Social Justice Team Project, NIMH Grant, Michigan State University, School of Criminal Justice.

⁵Isabel Briggs Myer. Center for Applications of Psychological Type, Gainesville, Florida.

All instruments were administered at both the pre- and post-testing, with the exception of the Myers-Briggs Type Indicator, which was administered only during the pre-testing.

Results of the psychological tests were not shared with participants during the ten month intervention period; results were shared following completion of the post-testing. One exception to this, however, was the Myers-Briggs Type Indicator, results of which were shared with the psychological intervention groups as a tool to stimulate self-discovery and insight in the subjects.

Physiological Tests. The physiological pre- and post-testing consisted of subject evaluation in the Center for Fitness and Sports Research's Human Performance Laboratory at the University of Michigan. These tests included the following: 1) an Exercise Performance Test, 2) a body composition analysis, 3) a blood profile analysis, 4) a muscle strength test, and 5) a health hazard appraisal test given by a physician in the Department of Preventive Medicine. (See Appendix B.) Subjects signed an "Informed Consent Form" developed by the University of Michigan Department of Physical Education, and the Social Justice Team Research Project. (See Appendix C.) This form delineated the purposes, procedures and risks of the various types of physiological testing, and was signed by the subject and witnessed at the time of the tests.

Results of the physiological tests were shared with participants upon completion of the post-testing; this is with the exception of those subjects who participated in the physical components of the Stress Reduction Program. The reason for restricting access to this information from those involved in purely psychological or professional interventions was to limit subject awareness of physiological concerns which may have developed primarily in response to participation in the testing procedures at the Human Performance Laboratory, and in so doing, limiting contamination effects of the intervening physiological variable on the psychological and professional groups. Exceptions to this procedure of information sharing were made in cases where the results of the tests indicated a medical condition requiring attention and treatment. In these cases, only the diagnosed individual, per the appropriate confidentiality ethics, received the results of the tests.

Interventions

Following completion of the pre-testing, the groups began their involvement in the sub-group to which they were randomly assigned, for the ten month intervention period beginning March 1, 1979, and ending December 31, 1980. Interventions of each group are described below.

Physical Training Intervention: Group B. The subjects involved in this group were provided with routine fitness conditioning programs based on the analysis of each individual's level of fitness as ascertained through tests in the Human Performance Laboratory. The programs were designed to meet the specific needs and exercise interests of the individual; and those persons experiencing medical concerns received appropriately designed prescriptions. The physical training intervention also consisted of a nutritional, as well as exercise program. Each officer was expected to exercise for approximately forty-five minutes, three days each week, for the duration of the intervention period. To assist in facilitation for fulfillment of the exercise programs, the University of Michigan physical education facilities were made available to all officers in this group. Officers could also exercise at home, at the Station I facilities, or at any other suitable place.

The twenty-two subjects in this group attended an introductory meeting during which time they received their physiological test results (but no psychological results), with the appropriate explanations, and exercise programs. During the course of the program, a representative from the Center for Fitness and Sports Research was available if at any time the subject desired an individual conference concerning his or her program. In addition, written newsletter communications were sent to all participants in the group

from the Center for Fitness and Sports Research; the newsletter discussed various aspects of health and fitness.

Psychological Intervention: Group C. Subjects assigned to this group participated once every two weeks in an hour and a half group session coordinated by one of two psychiatrists selected for the Psychological Intervention Component of the Stress Reduction Program. The groups ranged in numbers from six to twelve subjects and met in sessions which were homogeneously divided in terms of unit assignments; that is, all sergeants met in one group, corrections officers met together as groups, and deputies and detectives met together as groups. The reason for this type of segregation was based on the idea that the types of stressors experienced in the different assignments would most effectively be discussed and analyzed through discussions with persons from the same professional occupation.

The psychological intervention mode was based on the group dynamics principle, and focused on the following aspects of stress:

- 1) the general dimensions and medical implications of physical and psychological stress;
- 2) the understanding of how stress affects behavior, performance and one's social and marital relationships;
- 3) the sources of stress generating from the police and corrections roles generally, and in the Washenaw County Law Enforcement and Corrections Facility specifically;

- 4) the distinguishment between those stressors that are controllable and uncontrollable on the part of the officers;
- 5) the ways to develop coping abilities for those stressors which are uncontrollable and cannot be changed; and
- 6) the ways to develop skills of reducing the negative impact of stress on oneself and one's peers.

There was, naturally, some degree of personal involvement between the psychiatrists and the subjects in this group; however, no deep psychological probing or analysis was employed in this particular mode. Group discussion stimulated by films was the basic format for this intervention. All interactions which occurred were considered confidential, and exchanges of information were restricted to those involved in the immediate intervention group.

Psychological and Physiological Interventions: Group A.

Subjects assigned to this group received both psychological and physiological interventions as described above for Group B and Group C. Each subject was to exercise forty-five minutes, three days each week, and participated in the group sessions for an hour and a half once every two weeks.

Professional Intervention: Group D. The subjects in the Professional Group received technical and professional training information on new procedures, laws, equipment, tactics, etc. This intervention consisted of two sub-groups, one being a law enforcement professional group, and one

being a corrections professional group. The group did not receive any physical or psychological training which was specifically stress oriented.

This fourth mode was not developed as a placebo, or a null treatment, or a strictly pure control group, rather, the group was designed to address the concerns of the Hawthorne and/or leadership affect. It has been indicated in past research that any attention to different aspects of one's working conditions may raise morale, improve employee satisfaction, and increase job performances. Since vulnerability to stressors appears to be related to such factors, the intervention of this group may well improve the subjects' ability to cope with stress. This group, then, is seen as one which may establish minimal standards of improvement for any proposed mode that is specifically oriented towards stress reduction.

The types of activities which occurred in this group involved those concerns pertinent to law enforcement and corrections on an on-going basis, excluding stress specific concerns. Lectures, guests speakers, audio-visual aids, discussions and field trips were utilized for that purpose. Each group met for one and a half hours every other week; the Law Enforcement Group was coordinated by the Commander of the Road Patrol, and the Corrections Group by the Commander of the Corrections Unit.

Protection of Human Subjects

Because of the great amount of personal information gathered in the course of this study, every effort has been made to minimize risks to subjects, and to support ethical treatment of individuals. While these hazards and risks were for the most part minimal, protections were included in the design of the research program.

Confidentiality. All information gathered during the program was kept confidential to the project staff in coded form. To prevent inadvertent or unintentional leakage of raw data to unauthorized persons, data was coded and stored in segregation. After each item of data was gathered, the names of subjects were converted to identification codes. Original data records were kept in a locked cabinet until destroyed.

Presentation of Data. The greatest risks to subjects involved possible embarrassment or adverse consequences resulting from the disclosure of confidential information. To prevent such an occurrence, all statistics from data analysis are presented in aggregation. No data is presented in any manner wherein a single officer can be identified directly or indirectly; this rule extended from official to unofficial reports. The Administrative and Command staff of the Washtenaw County Sheriff's Department understood these concerns, and agreed to the importance of confidentiality and data presentation, and requested no exceptions.

Design of Thesis Study

As indicated earlier, the purpose of this thesis is to research the effects of the four modes of interventions employed in the Stress Reduction Program on the self-reported measures of job satisfaction obtained during pre-testing and post-testing. Being a subcomponent of the Stress Reduction Program, this thesis has the identical population, samples, procedures and interventions as described in the preceeding section outlining the Stress Reduction Program.

The Police Job Stress Inventory

One of the psychological instruments administered to the eighty-eight subjects was the Police Job Stress Inventory, presented in both pre- and post-testing. The Police Job Stress Inventory (PJSI) was developed by researchers working for the Police Foundation, the National Institute of Occupational Safety and Health, and the International Conference of Police Associations, and was adapted in parts by the Social Justice Team Project in developing the final PJSI instrument administered to Stress Reduction Program participants. Results of data analysis from the original researchers have not as yet been disseminated, and therefore will be unavailable for comparison purposes on responses, national norms, reliability and validity.

The instrument, therefore, may be viewed as an exploratory research test.

The PJSI is a broad-based research instrument designed to identify areas of stress experienced in a police environment. (See Appendix D.) It includes both inter-organizational, intra-organizational, and extra-organizational factors which may be contributory to the occupational stress experienced by law enforcement and corrections personnel. There are three-hundred and sixty eight variables in the questionnaire, formed into forty-four questions. The questions deal with the following specific aspects of law enforcement and corrections: 1) information pertaining to length of service in the Washtenaw County Sheriff's Department, type of assignment, amount of overtime, supervisory responsibility, hours worked per week, educational achievements, and previous law enforcement/corrections experience in other departments; 2) perceptions as to personal and professional likes and dislikes as they relate to a variety of occupational responsibilities and the extent to which officers feel tense or relaxed in a variety of occupational responsibilities; 3) officer perceptions of job satisfaction and dissatisfaction; 4) vehicular accidents both on and off duty; 5) the effect of working hours on various aspects of the respondents' personal lives. 6) general questions about health, exercise, alcohol abuse; and 7) questions pertaining to marital status.

Although a wide range of considerations are measured in the PJSI, this thesis will analyze only those questions which specifically relate to self reported job satisfaction and dissatisfaction, and does not analyze any questions pertaining to the other concerns, with the exception of some of the initial descriptive data on length of employment and type of assignment within the department.

The two questions which have been analyzed are Item 14 on the Pre-Test (Item 7 on the Post Test) and Item 19 on the Pre-Test (Item 12 on the Post Test).¹

Item 14. How satisfied or dissatisfied are you with the following elements of your job as a police officer? Use the following code:

- 1 = Very dissatisfied
- 2 = Moderately dissatisfied
- 3 = Slightly dissatisfied
- 4 = Slightly satisfied
- 5 = Moderately satisfied
- 6 = Very satisfied

- _____ Job security
- _____ Fellow officers
- _____ Promotion system
- _____ Academy training
- _____ Overtime pay
- _____ Excitement
- _____ Salary
- _____ Equipment maintenance
- _____ Top administration

¹The post-test PJSI did not contain seven of the descriptive questions posed on the pre-test PJSI to prevent duplication of data gathering which would have remained constant.

_____ Immediate supervisor
 _____ Disciplinary system
 _____ Middle management
 _____ In-service training
 _____ Amount of overtime
 _____ System of determining work schedules
 _____ Personal appearance code
 _____ Method of determining days off
 _____ Performance evaluation system
 _____ Freedom to make decisions
 _____ Method of determining assignments
 _____ Recognition from supervisors

Item 19. Below are some phrases which indicate how you might see yourself in your work. For example, if you think that you are very "successful" in your work, put a circle around the number right next to the word "successful." If you think that you are not at all successful in your work, circle the number next to the words "not successful." If you think you are somewhere in between, circle the appropriate number.

Successful	1 2 3 4 5 6 7	Not Successful
Sad at work	1 2 3 4 5 6 7	Happy at Work
Not important at work	1 2 3 4 5 6 7	Important at Work
Doing my best	1 2 3 4 5 6 7	Not Doing my Best

Administration of the Pre- and Post-Tests

The PJSI was administered as part of the battery of tests described previously. Each subject completed both the physiological tests at the Human Performance Laboratory, and the psychological inventories on the same day. A packet of tests was distributed to each subject, with written

instructions for completing the examinations. (See Appendix E.) The instructions explained the purpose of the tests, and the manner in which answer forms were to be completed.

All test materials and answer sheets were coded by number so that the individual's identity was protected at all times throughout the testing process. Following completion of the psychological tests, the materials were gathered and entered into the coding and storing process previously described. Data was stored in the computer systems at the University of Michigan.

Statistical Hypotheses

The first research hypotheses posits that "the implementation of a stress reduction program will result in an increase of self-reported job satisfaction on the part of subjects involved in the program." This hypotheses may be statistically tested in several ways, the first involving all subjects, the second involving analysis by group strata individually. Thus, a restatement of this major research hypothesis into two sub-hypotheses are as follows:

Sub₁: The implementation of a stress reduction program will result in an overall increase of self-reported job satisfaction on the part of all subjects involved in the program.

Sub₂: The implementation of a stress reduction program will result in within group increases of self-reported job satisfaction.

It is important to emphasize that the second sub-hypothesis in no way suggests that there are significant differences between the groups, or that one type of group treatment is more effective than another. It does suggest that there may have been significant within group changes as a result of the interventions.

The null hypothesis for the first sub-hypothesis is as follows:

$$\text{Null: } \bar{X}_{tss_1} = \bar{X}_{tss_2}$$

The null may be read as "The mean of the total number of subjects in the pre-test is equal to the mean of the total number of subjects in the post-test."

The null hypothesis for the second sub-hypothesis is as follows:

$$\begin{aligned} \text{Null: } \bar{X}_{A_1} &= \bar{X}_{A_2'} \\ \bar{X}_{B_1} &= \bar{X}_{B_2'} \\ \bar{X}_{C_1} &= \bar{X}_{C_2'} \\ \bar{X}_{D_1} &= \bar{X}_{D_2'} \end{aligned}$$

This may be read as "The Mean of Group A on the pre-test is equal to the mean of Group A on the post-test, the mean of Group B on the pre-test is equal to the mean of Group B on the post-test, the mean of Group C on the pre-test is equal to the mean of Group C on the post-test and the mean of Group D on the pre-test is equal to the mean of Group D on the post-test."

The second major hypothesis refers to between group change, and posits that "there will be significant differences between the four intervention groups in increases of self-reported job-satisfaction." This research hypothesis will be tested using the statistical hypothesis:

$$\begin{aligned} \text{Null: } \bar{X}_{A_2} - \bar{X}_{A_1} &= \bar{X}_{B_2} - \bar{X}_{B_1} = \bar{X}_{C_2} - \bar{X}_{C_1} = \\ &\bar{X}_{D_2} - \bar{X}_{D_1} \end{aligned}$$

IF the above null hypothesis is rejected, the following alternative statistical hypothesis will be tested to determine how the groups are significantly different from one another.

Alternative Hypothesis₁: The combination of psychological and physiological stress reduction interventions will have the greatest effect on self-reported increases of job satisfaction.

$$\begin{aligned} H_{a_1}: \bar{X}_{A_2} - \bar{X}_{A_1} &> \bar{X}_{B_2} - \bar{X}_{B_1} \\ \bar{X}_{A_2} - \bar{X}_{A_1} &> \bar{X}_{C_2} - \bar{X}_{C_1} \\ \bar{X}_{A_2} - \bar{X}_{A_1} &> \bar{X}_{D_2} - \bar{X}_{D_1} \end{aligned}$$

Alternative Hypothesis₂: The physiological intervention of the stress reduction program will have a greater effect on self-reported job satisfaction than either the psychological or the professional interventions.

$$H_{a2}: \quad X_{B2} - X_{B1} > X_{C2} - X_{C1}$$

$$X_{B2} - X_{B1} > X_{D2} - X_{D1}$$

Alternative Hypothesis₃:

The professional intervention of the Stress Reduction Program will have the least effect on increases in self-reported job satisfaction in comparison to the psychological, physiological, or combination psychological and physiological interventions.

$$H_{a3}: \quad X_{D2} - X_{D1} < X_{A2} - X_{A1}$$

$$X_{D2} - X_{D1} < X_{B2} - X_{B1}$$

$$X_{D2} - X_{D1} < X_{C2} - X_{C1}$$

It is anticipated, then, that statistical analysis of the mean scores on the post-test of the four groups will reveal the following between-group differences: 1) the combination intervention of psychological and physiological modes will have the most effect on increasing the self-reported job satisfaction; 2) the physiological intervention will have the second most effect; 3) the psychological intervention will have the third greatest effect; and 4) the professional intervention will have the least effect upon participants.

Analysis of Data

Several statistical methods will be utilized to test the hypotheses. For the two related hypotheses concerning within group change, dependent, or matched, t-tests of significance will be computed. A t-test computed on all subjects for pre- and post-tests will determine whether there were significant differences between measures for the entire sample. A t-test computed on subjects in each group will determine whether there were significant differences within the separate groups from pre-test to post-test; again, this in no way implies that one group significantly changed more than another. The t-tests will be computed on all twenty-five PJSI variables and will determine whether any of the actual differences are significantly larger than those expected by chance at the .05 level of probability.

The statistical method used to determine whether there are significant differences between the four group means on the PJSI variables following the intervention period is the Analysis of Variance. The analysis of variance will be computed on the differences between the pre-test and post-test means, and thus on a change score rather than solely on the post-test mean scores. The reason for use of differences scores in the analysis is that there were

significant differences between the four groups in several of their responses prior to introduction of the interventions (See Chapter IV.) The ANOVA assumption for analysis of post-test means is that randomly formed groups should be essentially equal for pre-test means. This assumption was not met, and an analysis of difference scores, therefore, is the more appropriate statistic to use. The ANOVA will determine whether there are significant differences between the groups at the .05 level of probability for each of the twenty-five variables being considered.

In the event that the above statistical analysis support significant differences between the groups, then additional computation to determine how the groups are different will be undertaken. The procedure used will be a multiple comparisons test, which involves computation of a special form of the t-test in which combined variance for all four groups is taken into account. The procedure determines how the groups are significantly different, and in what direction; i.e., increase in satisfaction or decrease in satisfaction.

Should no statistically significant differences be found either within groups or between groups, then additional interpretive analyses will be undertaken.

These will be in the form of t-test and ANOVA's computed on the twenty five PJSI variables as they relate to

demographic data such as age, race, sex, division and seniority. While these analyses will not provide statistical explanations for any lack of significance, they will furnish some insights into the characteristics of the participants and the relationship between levels of satisfaction and the Stress Reduction Program. Furthermore, a comparison will be made of those subjects who dropped out vs. those subjects who remained in the program on the PJSI variables and the demographic data.

To compute the t-tests and ANOVAs, the University of Michigan's Amdahl 470V/6 computer will be utilized. The overall operation of this computer is controlled by the Michigan Terminal System (MTS), which contains a large number of programs. One of these programs is known as the Michigan Interactive Data Analysis System (MIDAS); MIDAS has the statistical capabilities to run the t-tests, ANOVAs, and multiple comparisons t-tests.

Summary

The experimental design of this study consists of pre- and post-testing of eighty-eight randomly selected participants to determine the effects of four different stress reduction intervention modes on self-reported job satisfaction and dissatisfaction. T-tests will be conducted to determine significant differences between

pre- and post-testing for the entire sample, as well as for the individual groups. Analysis of Variance tests will be computed to determine whether there are significant differences between the means of the four intervention groups. All tests will be considered statistically significant at the .05 level. If the analysis reveals that there are significant differences between the four groups, then multiple comparison t-tests will be conducted to determine how they are different, and in what direction. If no statistically significant differences are found, then analyses of demographic data as it relates to the PJSI variables will be conducted to provide interpretive insights into the relationship between self-reported satisfaction and the Stress Reduction Program.

CHAPTER IV

ANALYSIS OF THE PRE-TEST DATA

The purpose of this chapter is twofold, first, to present some descriptive statistics on the characteristics of the sample group gathered from department records, and second, to present an analysis of data on the Police Job Stress Inventory pre-test variables.

Characteristics of the Sample

An analysis of characteristics of all subjects in the sample revealed that there were thirty-nine deputies (44% of total sample), thirty corrections officers (34%), eleven detectives (13%), seven sergeants (8%), and one lieutenant (1%). Seventy-four of the subjects were male (84%) and nine female (16%), having a mean age of between thirty and thirty-one years (30.6 years). There were twelve blacks in the sample (14%) and seventy-six whites (86%). The mean seniority in the sample was between five and six years (5.4). Of the eighty-eight subjects, thirty-five had worked for other law enforcement or corrections departments for an average of between three and four years (3.5). The analysis of variance computed to assess differences between

intervention groups in regards to variables of race, sex, birth, rank, seniority, and division indicated no significant differences.

Analysis of the Pre-Test PJSI Data

Prior to the pre-testing, four persons dropped out of the program reducing the number of persons in the sample from eighty-eight to eighty-four. Of these four, two were corrections officers and two were deputies. Three individuals resigned from the program for personal reasons, and one individual dropped out because he terminated his employment with the department. In addition to these formal drop-outs, some of the questionnaires were incompletely filled out, resulting in further decreases in sample size and data gathered on some of the items.

General Levels of Satisfaction

General levels of satisfaction reported by all subjects was ascertained by analyzing the mean scores for the entire sample. The mean scores for each item on Question 14 and Question 19 are presented in Table II and Table III, respectively.

TABLE II
PRE-TEST MEAN SAMPLE SCORES
QUESTION 14

Variable	Mean*
Job Security	3.05
Fellow Officers	4.32
Promotional System	2.90
Academy Training	3.58
Overtime Pay	4.29
Excitement	4.62
Salary	4.18
Equipment Maintenance	3.63
Top Administration	3.56
Immediate Supervisor	4.49
Disciplinary System	2.94
Middle Management	3.60
In-Service Training	3.16
Amount Overtime	3.89
System Determining Work Schedule	3.82
Personal Appearance Code	4.16
Method of Determining Days Off	3.95
Performance Evaluation	3.04
Freedom to Make Decisions	4.27
Method of Determining Assignments	3.67
Recognition from Supervisors	3.18

*N varies from 74-79 because of missing data

Scale: 1 = Very Dissatisfied	4 = Slightly Satisfied
2 = Moderately Dissatisfied	5 = Moderately Satisfied
3 = Slightly Dissatisfied	6 = Very Satisfied

TABLE III
PRE-TEST MEAN SAMPLE SCORES
QUESTION 19

Variable	Mean*
Successful at Work/Not Successful at Work	2.10
Happy at Work/Sad at Work	5.19
Not Important at Work/Important at Work	5.01
Doing My Best/Not Doing My Best	1.91

* N varies from 74-76 because of missing data.

Scale:	Successful	1 2 3 4 5 6 7	Not Successful
	Happy	1 2 3 4 5 6 7	Sad
	Not Important	1 2 3 4 5 6 7	Important
	Doing Best	1 2 3 4 5 6 7	Not Doing Best

In regards to general levels of overall satisfaction as reported in Question 19, the means of the sample responses indicate that subjects feel they are doing their best at work, and feel successful in their work. They also report feeling moderately happy and moderately important while at work.

Mean sample scores for satisfaction pertaining to the specific aspects of Question 14 indicate that in no case did the mean score fall below the moderately dissatisfied level, and in only one case did the mean sample

score indicate a very satisfied level. Approximately six percent of the responses ranged from moderately to slightly dissatisfied (2.00-2.99); fifty-seven percent of the responses ranged from slightly dissatisfied to slightly satisfied (3.00-3.99); and thirty-three percent of the responses were in the slightly to moderately satisfied category (4.00-4.99).

On the whole, it may be concluded from direct reports on Question 14, that the respondents were neither very dissatisfied, nor very satisfied with the measured aspects of their work. The sample was somewhat less than moderately satisfied, with ninety percent of the responses falling in the range of slightly dissatisfied to moderately satisfied.

Analysis of Variance

The pre-test data was initially analyzed to determine whether the four intervention groups were significantly different in order to decide upon the appropriate statistical technique to be used on post-test data analysis. An analysis of variance was conducted on all three-hundred and sixty-eight variables of the Police Job Stress Inventory, and revealed that the four groups, prior to introduction of interventions were essentially equal on the self-report items measured. Out of all items

on the PJSI there were significant differences between the groups at the .05 level of significance in only twenty-four of the responses, or approximately six percent.

While the analysis of all PJSI variables showed the groups to be essentially equal, there were significant differences between the groups in three of the twenty-five variables considered in this thesis. The means of each group for each variable considered, and the levels at which the groups were significantly different as computed by the analysis of variance are presented in Table IV and Table V.

TABLE IV
ANALYSIS OF VARIANCE OF MEAN GROUP SCORES*
QUESTION 19

Variable	Mean Scores				p.<.05
	A	B	C	D	
Successful/Not Success.	2.21	2.24	1.84	2.11	.69
Happy at Work/Sad	4.76	5.19	5.39	5.39	.60
Not Important/Important	5.12	5.00	5.05	4.89	.98
Doing Best/Not Doing Best	1.89	1.76	2.05	1.94	.91

*N varies from 74-76 because of missing data.

Scale:	Successful at Work	1 2 3 4 5 6 7	Not Successful
	Sad at Work	1 2 3 4 5 6 7	Happy
	Not Important at Work	1 2 3 4 5 6 7	Important
	Doing Best	1 2 3 4 5 6 7	Not Doing Best

TABLE V
ANALYSIS OF VARIANCE OF MEAN GROUP SCORES
QUESTION 14

Variable	Mean Scores**				p.<.05*
	A	B	C	D	
Job Security	2.90	2.38	3.50	3.50	.03*
Fellow Officers	4.45	3.81	4.53	4.56	.13
Promotional System	2.85	3.00	2.95	2.78	.97
Academy Training	3.95	2.95	3.68	3.82	.17
Overtime Pay	4.25	3.95	4.75	4.22	.27
Excitement	4.40	4.48	5.10	4.50	.15
Salary	3.60	4.14	4.70	4.28	.11
Equipment Maintenance	3.25	3.67	3.65	4.00	.44
Top Administration	3.30	3.43	3.75	3.78	.70
Immediate Supervisor	4.70	3.86	4.75	4.72	.10
Disciplinary System	3.10	2.71	3.30	2.61	.35
Middle Management	3.40	3.48	3.60	4.00	.36
In-Service Training	2.85	3.24	3.35	3.22	.75
Amount Overtime	3.85	3.24	4.70	3.78	.0007*
System Deter. Wk Sched.	3.80	3.48	4.00	4.06	.58
Personal Appearance Code	3.85	4.24	4.20	4.39	.67
Method Deter. Days Off	3.95	3.57	4.10	4.22	.60
Performance Evaluation	2.63	2.95	3.32	3.29	.40
Freedom to Make Decisions	4.05	4.05	5.05	3.89	.02*
Method Deter. Assignments	3.85	3.33	3.85	3.67	.61
Recog. from Supervisors	2.70	3.05	3.60	3.39	.28

**N varies from 76-79 because of missing data.

Scale: 1 = Very Dissatisfied 4 = Slightly Satisfied
 2 = Moderately Dissatisfied 5 = Moderately Satisfied
 3 = Slightly Dissatisfied 6 = Very Satisfied

Significant differences between the groups were found only in Question 14 items, on three variables relating to Job Security, Amount of Overtime, and Freedom to Make Decisions. In regards to Job Security, the means for Groups C and D were higher than for Groups A and B. The mean for group C was also higher than the other three groups for satisfaction relative to the Amount of Overtime worked, and Freedom to Make Decisions. While not statistically significant, a comparison of Tables IV and V with Tables II and III reveals that the means for Group C were consistently above the sample means; conversely, the means for Group B was consistently below the sample means.

In that there were some significant differences between the groups on pre-test variables, there was concern as to whether an analysis of variance could be used on just the post-test data. This concern arises from the assumptions which should be met in using an analysis of variables solely on post-test data; that is, pre-test variables should be essentially equal on self reports from the four different intervention groups considered.

To account for these differences, it was determined that the appropriate statistical technique to be used in hypothesis testing would be an analysis of variance on the differences between the means of the pre- and post tests. This provides an analysis of the changes occurring between

pre-and post-testing. In analyzing the amount of change occurring in each group, rather than simply the post-test scores, the results will show more clearly the dynamics and effects of the Stress Reduction Program on job satisfaction. The analysis of variance used in testing the statistical hypotheses, therefore, will not be using solely pre-test or solely post-test data, but the differences between the two.

Summary

An analysis of variance of the pre-test data indicates that there are some significant differences between the four intervention groups in regards to reported job satisfaction on items of Job Security, Amount of Overtime, and Freedom to Make Decisions. In that these items compose twelve percent of the items analyzed in this thesis, it is determined that an analysis of variance of the differences between pre- and post-test means is the appropriate statistical technique to use in hypothesis testing.

Generally speaking, the respondents were neither very dissatisfied nor very satisfied with the job satisfaction items prior to implementation of the Stress Reduction interventions. The sample was somewhat less than moderately satisfied on the overall job satisfaction indices. In terms of general feeling about their work, respondents report they are mostly doing their best, feel successful at work, and feel moderately happy and important while at work.

CHAPTER V

TESTS OF HYPOTHESES

In this chapter, an analysis of participant attrition, general levels of post-test satisfaction, and hypotheses testings are presented.

Participant Attrition

Prior to, or at the time of post-testing, a total of twenty-seven subjects (31%) resigned from the Stress Reduction Program, leaving an n of sixty-one subjects. There were no significant drop-out rate differences between the four intervention groups. The numbers were fairly even with six dropping out of Group A, seven from Group B, eight from Group C, and six from Group D. This resulted in group n 's of sixteen subjects for Groups A and D, fifteen subjects in Group B, and fourteen subjects in Group C. An in-depth discussion of participant attrition is presented in Chapter VI.

In addition to formal drop-outs, some of the post-test questionnaires, as with pre-test questionnaires, were incompletely filled out. This resulted in a further reduced n for data analysis; most of the variables were

analyzed for approximately fifty subjects, with between eleven and fourteen in each of the four intervention groups. While ideally a greater number of subjects per group would have been desirable, it is not concluded that the reduced n significantly impairs analysis of results.

General Levels of Satisfaction

General levels of satisfaction for both pre- and post-test, and the increases and decreases in satisfaction during the intervention period may be ascertained by reviewing the sample means for Questions 19 and 14. These means are presented in Tables VI and VII, respectively.

TABLE VI

Pre- and Post-Test Sample Means
Question 19

Variable	Pre-Test Mean*	Post-Test Mean*
Successful/Not Successful	1.96	2.04
Happy at Work/Sad at Work	5.31	5.14
Not Important at Work/Important	5.08	4.88
Doing Best at Work/Not Doing Best	1.92	2.61
n = 49		
Scale:	Successful at Work	1 2 3 4 5 6 7 Not Successful
	Happy at Work	1 2 3 4 5 6 7 Sad at Work
	Not Important at Work	1 2 3 4 5 6 7 Important at Work
	Doing My Best	1 2 3 4 5 6 7 Not Doing Best

TABLE VII
Pre- and Post-Test Sample Means
Question 14

Element	Pre-Test Mean*	Post-Test Mean*
Job Security	2.98	3.40
Fellow Officers	4.22	4.31
Promotional System	3.04	2.67
Academy Training	3.61	3.33
Overtime Pay	4.48	4.04
Excitement	4.77	4.52
Salary	4.35	4.42
Equipment Maintenance	3.85	3.88
Top Administration	3.67	3.38
Immediate Supervisor	4.69	4.56
Disciplinary System	3.04	2.96
Middle Management	3.65	3.61
In-Service Training	3.42	3.21
Amount Overtime	3.79	3.50
Syst. Deter. Wk. Sched.	3.90	3.83
Personal Appearance Code	4.23	4.34
Method Deter. Days Off	4.04	4.17
Performance Evaluation	3.21	3.06
Freedom to Make Decisions	4.52	4.35
Method Deter. Assignments	3.77	3.90
Recognition from Supervisors	3.38	3.52

*N varies from 48 to 52 because of missing data.

Scale:	1 = Very Dissatisfied	4 = Slightly Satisfied
	2 = Moderately Dissatisfied	5 = Moderately Satisfied
	3 = Slightly Dissatisfied	6 = Very Satisfied

It is important to note that the pre-test means presented in this chapter vary slightly from those presented in Chapter IV. The reason for these differences is attributed to the reduced number of subjects for which the means were computed; means for pre-test variables in this chapter are computed only for those subjects remaining in the sample at the time of post-testing.

In terms of changes in overall satisfaction from pre- to post-testing as determined in responses to Question 19, the sample generally felt happier, but less successful, less important, and less that they were doing their best at the end of the intervention period. The responses to Question 14 indicated that the sample satisfaction increased by the time of post-testing for thirty-eight percent of the variables, and decreased for sixty-two percent of the variables. Increases in satisfaction were found in the variables of Job Security, Fellow Officers, Salary, Equipment Maintenance, Personal Appearance, Method of Determining Days Off, Method of Determining Assignments, and Recognition From Supervisors. Decreases in satisfaction were found in the Promotional System, Academy Training, Overtime Pay, Excitement, Top-Administration, Immediate Supervisor, Disciplinary System, Middle Management, In-Service Training, Amount of Overtime, System of Determining Work Schedules, Performance Evaluations, and Freedom to Make Decisions.

Of note is the fairly slight amount of increases and

decreases in the sample means from pre- to post-testing. In pre-testing, approximately five percent of the variables fell in the 2.00-2.99 range; fifty-seven percent were in the 3.00-3.99 range; and thirty-eight percent were in the 4.00-4.99 range. In post-testing, approximately ten percent of the variables were in the 2.00-2.99 range; fifty-two percent were in the 3.00-3.99 range; and thirty-eight percent were in the 4.00-4.99 range. For pre-testing, ninety-five percent of the responses were in the slightly dissatisfied to moderately satisfied range; for post-testing ninety percent of the responses were in the same range.

Within Sample Changes

The extent to which the above increases and decreases in satisfaction were significant was hypothesized that "the implementation of a stress reduction program will result in an overall increase of self-reported job satisfaction on the part of subjects involved in the program." The null hypothesis that $\bar{X}_{tss_1} = \bar{X}_{tss_2}$ was tested by a matched pair t-test for the entire sample on each of the twenty-five variables. A summary of the t-tests are presented in Table VIII for Questions 14 and 19. A negative mean difference is symbolized by a minus sign preceding the statistic (decrease in satisfaction); a positive mean difference has no preceding sign (increase in satisfaction).

TABLE VIII

T-Test on Pre- and Post-Test Sample Means **
Questions 14 and 19

Element	Mean Diff.	s.d.	t-stat.	p.<.05*
Job Security	.42	1.81	1.69	.0976
Fellow Officers	.98	1.35	.52	.6051
Promotional System	- .37	1.80	-1.46	.1504
Academy Training	- .27	1.47	-1.33	.1886
Overtime Pay	- .44	1.58	-2.02	.0484 *
Excitement	- .25	1.30	-1.39	.1705
Salary	- .77	1.10	.50	.6162
Equipment Maintenance	.38	1.48	.19	.8522
Top Administration	- .29	1.50	-1.39	.1714
Immediate Supervisor	- .13	1.53	- .63	.5298
Disciplinary System	- .78	1.48	- .38	.7069
Middle Management	- .38	1.36	- .20	.8389
In-Service Training	- .21	1.68	- .91	.3694
Amount Overtime	- .29	1.50	-1.39	.1714
System Deter. Wk. Sched.	- .77	1.12	- .50	.6218
Personal Appearance Code	.11	1.22	.68	.4966
Method Deter. Days Off	.13	1.44	.67	.5039
Performance Eval. System	- .15	1.25	- .81	.4247
Freedom to Make Decisions	- .17	1.23	-1.01	.3159
Method Deter. Assignments	.13	1.33	.73	.4684
Recognition from Superv.	.13	1.44	.67	.5039
Successful/Not Successful	.82	.93	.61	.5426
Sad/Happy	- .16	1.76	- .65	.5192
Not Important/Important	- .16	2.14	- .53	.5965
Doing Best/Not Doing Best	.69	1.90	2.56	.0136 *

** N varies from 48-52 because of missing data

The results of the t-test indicate that there were significant differences within the sample between pre- and post-tests in only two of the twenty-five variables. There was 1) a significant decrease in satisfaction at the proposed alpha with Overtime Pay, and 2) a significant decrease in participant reports that they were doing their best. Thus, the null hypothesis was rejected in only two variables, and in the opposite direction as that hypothesized. The hypothesis that the stress reduction program would result in an increase of overall sample satisfaction was, therefore, not supported.

Within Group Changes

The hypothesis that "the implementation of a stress reduction program will result in within group increases of self-reported job satisfaction," was tested using a t-test analysis for the null of $\bar{X}_{A_1} = \bar{X}_{A_2}$, $\bar{X}_{B_1} = \bar{X}_{B_2}$, $\bar{X}_{C_1} = \bar{X}_{C_2}$, and $\bar{X}_{D_1} = \bar{X}_{D_2}$. The matched pair t-test was separately run on all twenty-five variables for each of the four intervention groups. The results of these four t-tests are presented in Tables IX, X, XI and XII, for Groups A, B, C and D, respectively.

TABLE IX
T-Test on Pre- and Post-Test Sample Means**
Questions 14 and 19, Group A

Variable	Pre-Mean	Post Mean	Mean Diff.	s.d.	t-stat	p<.05
Job Security	3.23	3.08	.15	1.28	- .43	.6727
Fellow Officers	4.15	3.77	- .38	.96	-1.44	.1745
Promotional System	3.38	2.69	- .69	1.44	-1.74	.1079
Academy Training	4.00	2.92	-1.08	1.73	-2.17	.0528
Overtime Pay	4.54	3.54	-1.00	2.08	-1.73	.1089
Excitement	4.54	4.23	- .31	1.80	- .61	.5486
Salary	4.00	4.15	.15	.69	.81	.4363
Equip. Maintenance	3.61	3.46	- .15	1.41	- .39	.6999
Top Administration	3.31	3.46	.15	1.14	.49	.6364
Immediate Supervisor	4.92	4.31	- .62	1.50	-1.48	.1654
Disciplinary System	3.00	3.54	.54	1.05	1.85	.0892
Middle Management	3.31	3.46	.15	1.41	.39	.6999
In-Service Training	3.08	2.92	- .15	.90	- .62	.5486
Amount Overtime	3.62	3.23	- .38	1.26	-1.10	.2930
Syst. Det. Wk. Schd.	3.85	3.85	.00	1.00	.00	1.0000
Personal App. Code	4.31	4.23	- .08	.49	- .56	.5845
Meth. Det. Days Off	3.92	4.30	.38	2.06	.67	.5142
Performance Eval.	2.92	2.67	- .25	.97	- .90	.3889
Freedom to Make Dec.	4.62	4.08	- .54	1.13	-1.72	.1105
Meth. Det. Assignmts.	4.08	4.15	.07	1.26	.22	.8289
Recog. from Superv.	3.08	3.46	.38	.87	1.59	.1368
Successful/Not Succ.	1.92	1.75	- .17	1.03	- .56	.5863
Sad/Happy	5.00	4.64	- .36	2.38	- .51	.6230
Not Important/Imp.	5.45	5.00	- .45	1.86	- .81	.4374
Doing Best/Not Doing B.	1.82	2.00	.18	.75	.80	.4405

**N varies from 11-13 because of missing data.

TABLE X
T-Test on Pre- and Post-Test Sample Means**
Questions 14 and 19, Group B

Variable	Pre- Mean	Post- Mean	Mean Diff.	s.d.	t-stat.	p<.05*
Job Security	2.07	3.43	1.36	1.45	3.51	.0038*
Fellow Officers	3.64	4.43	.79	1.53	1.92	.0765
Promotional System	3.21	3.07	-.14	1.96	-.27	.7889
Academy Training	2.93	2.71	-.21	1.72	-.47	.6484
Overtime Pay	4.14	3.71	-.43	1.79	-.90	.3854
Excitement	4.86	4.43	-.43	.85	-1.88	.0823
Salary	4.21	4.57	.36	1.39	.96	.3548
Equip. Maintenance	4.00	4.00	.00	1.18	.00	1.0000
Top Administration	3.79	4.00	.21	1.19	-.67	.5117
Immediate Supervisor	4.07	4.36	.29	2.13	.50	.6238
Disciplinary System	3.07	2.86	-.21	1.19	-.67	.5117
Middle Management	3.57	3.71	.14	1.46	.37	.7202
In-Service Training	3.50	3.86	.36	2.02	.66	.5205
Amount Overtime	3.21	3.29	.07	2.40	.11	.9131
Syst. Det. Wk. Schd.	3.36	3.14	.21	1.12	-.71	.4874
Personal App. Code	4.43	4.00	-.43	1.16	-1.38	.1894
Meth. Det. Days Off	3.57	3.86	.29	1.07	1.00	.3356
Performance Eval.	3.07	3.21	.14	1.66	.32	.7522
Freedom to Make Dec.	4.21	4.43	.21	1.48	.54	.5964
Meth. Det. Assignmts.	3.36	3.57	.21	1.53	.52	.6086
Recog. from Super.	3.07	3.36	.29	1.20	.89	.3909
Successful/Not Succ.	2.38	2.85	.46	1.05	1.58	.1390
Sad/Happy	5.43	5.00	-.43	2.03	-.79	.4431
Not Important/Imp.	4.93	4.36	-.57	2.06	-1.04	.3193
Doing Best/Not Doing B.	1.71	3.21	1.50	2.14	2.62	.0210 *

**N varies from 13-14 because of missing data.

TABLE XI
T-Test on Pre- and Post-Test Sample Means**
Questions 14 and 19, Group C

Variable	Pre-Mean	Post-Mean	Mean Diff.	s.d.	t-stat.	p<.05*
Job Security	3.38	3.15	- .23	1.92	- .43	.6727
Fellow Officers	4.75	4.75	.00	1.21	.00	1.0000
Promotional System	3.00	2.15	- .85	1.99	-1.53	.1519
Academy Training	3.92	3.92	.00	1.15	.00	1.0000
Overtime Pay	5.08	4.62	- .46	.88	-1.90	.0821
Excitement	5.15	4.62	- .54	1.13	-1.72	.1105
Salary	4.77	4.54	- .23	.83	-1.00	.3370
Equip. Maintenance	3.85	4.31	.46	1.51	1.10	.2910
Top Administration	4.00	3.08	- .92	1.71	-1.95	.0748
Immediate Supervisor	5.08	4.85	- .23	1.30	- .64	.5345
Disciplinary System	3.42	2.75	- .67	1.83	-1.26	.2320
Middle Management	3.85	3.85	.00	1.08	.00	1.0000
In-Service Training	3.69	3.08	- .62	1.61	-1.38	.1931
Amount Overtime	4.77	4.23	- .54	.88	-2.21	.0470*
Syst. Det. Wk. Schd.	4.30	4.30	.00	1.29	.00	1.0000
Personal App. Code	4.08	4.38	.31	1.38	.81	.4363
Meth. Det. Days Off	4.38	4.31	.08	1.61	- .17	.8657
Performance Eval.	3.33	3.50	.17	.72	.80	.4382
Freedom to Make Dec.	5.08	4.62	- .46	.66	-2.52	.0269*
Meth. Det. Assignmts.	4.00	4.46	.46	1.27	1.31	.2132
Recog. from Super.	3.92	4.15	.23	1.74	.48	.6410
Successful/Not Succ.	1.67	1.67	.00	.74	.00	1.0000
Sad/Happy	5.75	5.58	- .17	.72	- .80	.4382
Not Important/Imp.	5.25	4.75	- .50	1.73	-1.00	.3388
Doing Best/Not Doing B.	2.33	3.08	.75	1.82	1.43	.1802

**N varies from 12-13 because of missing data.

TABLE XII
T-Test on Pre- and Post-Test Sample Means**
Questions 14 and 19, Group D

Variable	Pre-Mean	Post-Mean	Mean Diff.	s.d.	t-stat.	p<.05
Job Security	3.33	4.00	.67	2.19	1.06	.3139
Fellow Officers	4.42	4.33	-.08	1.14	-.20	.8451
Promotional System	2.50	2.75	.25	1.76	.49	.6332
Academy Training	3.67	3.83	.17	.94	.62	.5505
Overtime Pay	4.17	4.33	.17	1.19	.48	.6380
Excitement	4.50	4.83	.33	1.23	.94	.3683
Salary	4.42	4.42	.00	1.35	.00	1.0000
Equip. Maintenance	3.92	3.75	-.17	1.90	-.30	.7668
Top Administration	3.58	2.92	-.67	1.72	-1.34	.2072
Immediate Supervisor	4.75	4.76	.00	.85	.00	1.0000
Disciplinary System	2.67	2.67	.00	1.71	.00	1.0000
Middle Management	3.92	3.42	-.50	1.51	-1.14	.2750
In-Service Training	3.42	2.92	-.50	1.98	-.88	.3997
Amount Overtime	3.58	3.25	-.33	.89	-1.30	.2199
Syst. Det. Wk. Schd.	4.17	4.08	-.08	1.16	-.25	.8088
Personal App. Code	4.08	4.83	.75	1.42	1.83	.0950
Meth. Det. Days Off	4.33	4.25	-.08	.79	-.36	.7227
Performance Eval.	3.60	2.80	-.80	1.32	-1.92	.0868
Freedom to Make Dec.	4.17	4.25	-.08	1.44	.20	.8451
Meth. Det. Assignmts.	3.67	3.42	-.25	1.29	-.67	.5152
Recog. from Super.	3.50	3.08	-.42	1.83	-.79	.4474
Successful/Not Succ.	1.83	1.83	.00	.85	.00	1.0000
Sad/Happy	5.00	5.33	.33	1.61	.72	.4893
Not Important/Imp.	4.58	5.50	.92	2.68	1.19	.2608
Doing Best/Not Doing B.	1.83	2.00	.17	2.25	.26	.8022

**N = 12

The pre- and post-test means are also included in these tables. In order to fully understand the table, the mathematical computations of the means and mean differences should be clarified. The mean for the pre-test group was computed by dividing the sum of the pre-test scores by the number of subjects for each group; the same was done for post-test means using post-test scores. If the pre-test mean is subtracted from the post-test mean, the result is not the mean difference shown in the tables. This is because the mean differences were computed for the t-tests by 1) subtracting each subject's pre-test score from the post-test score, 2) summing these difference scores, and 3) dividing by the number of subjects in the group.

The results of these t-tests indicate that there were no significant differences within Group A from pre- to post-testing for any of the twenty-five variables. The same holds true for Group D. Significant differences were found in Group B on two variables. There was an increase in Job Security satisfaction during the intervention period, and a decrease in the extent to which the subjects felt they were doing their best. Two significant differences were also found within Group C. There were decreases in satisfaction with both the System of Determining Work Schedules, and the Method of Determining Assignments.

The null hypothesis, therefore, was not rejected for twenty-one of the variables, was rejected in the expected

direction for one of the variables, and was rejected for three variables in the opposite expected direction.

The hypothesis that the implementation of a stress reduction program would result in significant increases in satisfaction within the separate groups was generally not supported.

Between Group Differences

While there were some significant differences within each group, in order to determine whether one group significantly increased or decreased its satisfaction level in comparison to another, an analysis of variance was computed on each variable. The research hypothesis proposed that "there will be significant differences between the four intervention groups in increases of self-reported job satisfaction." The null hypothesis tested by the analysis of variance was that $\bar{X}_{A_2} - \bar{X}_{A_1} = \bar{X}_{B_2} - \bar{X}_{B_1} = \bar{X}_{C_2} - \bar{X}_{C_1} = \bar{X}_{D_2} - \bar{X}_{D_1}$. The results of the analysis of variance are summarized in Table XIII. (Tables of the complete individual ANOVA computations for each of the twenty-five variables are compiled in Appendix F.)

In Table XIII, the headings for the columns refer to the degrees of freedom, the sum of the squares, and the mean square within and between the intervention groups.

TABLE XIII

Analysis of Variance of Mean Differences,
Pre- and Post-Test Group Means, Questions 14,19

Variable	Within			Between			F*	p.
	df.	s.s.	m.s.	d.f.	s.s.	m.s.		
Job Security	48	143.88	3.00	3	22.81	7.60	2.54	.0677
Fellow Officers	47	80.35	1.71	3	10.16	3.39	1.98	.1297
Promotional Syst.	48	156.43	3.26	3	9.63	3.21	.99	.4077
Academy Training	47	96.94	2.06	3	11.22	3.74	1.81	.1578
Overtime Pay	48	118.33	2.47	3	8.50	2.83	1.15	.3388
Excitement	48	80.10	1.66	3	5.65	1.88	1.13	.3465
Salary	48	59.21	1.23	3	2.48	.83	.67	.5749
Equip. Maint.	48	108.59	2.26	3	3.33	1.11	.49	.6901
Top Admin.	48	101.64	2.12	3	13.03	4.34	2.05	.1191
Immed. Supervisor	48	114.24	2.38	3	5.82	1.94	.81	.4922
Disc. System	47	100.25	9.43	3	9.43	3.14	1.47	.2337
Mid. Management	48	90.41	1.88	3	3.52	1.17	.62	.6040
In-Serv. Training	48	136.98	2.85	3	7.69	2.56	.90	.4490
Amt. Overtime	48	111.90	2.33	3	2.77	.92	.40	.7564
Syst. Det. Wk. Sch.	48	63.27	1.32	3	.42	.14	.11	.9563
Pers. App. Code	48	65.37	1.36	3	9.94	3.31	2.43	.0764
Meth. Det. D/Off	48	103.77	2.16	3	2.28	.76	.35	.7878
Perf. Eval. Syst.	44	67.23	1.53	3	6.75	2.25	1.47	.2352
Free. Make Dec.	48	71.74	1.49	3	5.71	1.90	1.27	.2943
Meth. Det. Assgt.	48	86.76	1.81	3	3.30	1.10	.61	.6131
Recog. fm Super.	48	101.16	2.11	3	4.90	1.63	.77	.5138
Successful/not	45	38.90	.86	3	2.78	.93	1.07	.3711
Sad/Happy	45	144.31	3.21	3	4.39	1.46	.46	.7144
Important/Not	45	202.07	4.49	3	18.62	6.21	1.38	.2604
Doing Best/Not	45	157.05	3.49	3	15.35	5.12	1.47	.2363

*F significant at .05 level for 3 degrees freedom between, and 45-48 degrees freedom within, when 2.84 or greater.

It is revealed by the analysis of variance that the null hypothesis was not rejected for each of the twenty five job satisfaction variables. It may be concluded, therefore, that there were no significant differences between the four intervention groups for changes occurring during the intervention period.

Summary

An analysis of the pre- and post-test results indicates that the general levels of satisfaction for the sample remained fairly constant over the ten-month intervention period. Findings of the hypotheses testings confirmed this constancy. The hypothesis that the Stress Reduction Program would result in overall increases in sample satisfaction was t-tested on pre- and post-test means for all subjects, and was generally not supported. The null was rejected in the opposite expected direction in two of the twenty five variables: there were decreases in satisfaction with Overtime Pay, and decreases in subject reports that they were Doing Their Best. The null was not rejected in the expected direction for any of the variables.

The t-test analysis of independent within group change tested the hypothesis that the Stress Reduction Program would result in significant increases of satisfaction in the four intervention groups. This hypothesis was also generally not supported. No significant differ-

ences were found in Groups A and D. Two significant differences were found in Group B, one null being rejected in the expected direction, and one null being rejected in the opposite expected direction. There was a significant increase in Job Security, and a decrease in the extent to which subjects felt they were Doing Their Best. Two significant differences were also found in Group C, with the null being rejected in the opposite expected direction in both cases. Decreases in satisfaction were found for the System of Determining Work Schedules, and the Method of Determining Assignments. Thus, overall four groups the null was rejected only once in the expected direction and three times in the opposite expected direction. It is concluded, therefore, that the hypothesis was not supported.

An analysis of variance was computed to determine whether there were significant differences between the four groups as a result of the Stress Reduction Program interventions. The null hypothesis was not rejected for any of the twenty-five variables. It is concluded that the hypothesis was not supported.

CHAPTER VI

INTERPRETATIVE DATA ANALYSIS

The purpose of this chapter is twofold, first to present additional information on the characteristics of the subjects by relating their reported levels of satisfaction to variables of race, sex, division, age and seniority, and second to compare the pre-test satisfaction levels of those subjects who dropped out of the Stress Reduction Program with those who remained in the program.

Demographic Variables Analysis

In that the three major research hypotheses were not supported in this thesis, it may be useful to analyze additional data to determine whether there were any significant differences between satisfaction levels when compared by various stratifications. Questions which arise concern whether blacks were more affected by the program than whites, women more than men, corrections officers more than law enforcement officers, older subjects more than younger subjects, and senior subjects more than junior subjects.

Race. The question of whether the variable of race has any significance in self-reported job satisfaction

was tested by two-sample t-tests (Student's), run on all twenty-five of the PJSI variables. The mean difference scores between the pre- and post-tests were computed for each subject, then stratified into a Black group and a White group, and compared by the t-tests. The resulting statistics indicate the extent to which blacks significantly increased or decreased their satisfaction during the intervention in comparison to the extent to which Whites did. Results of the tests are summarized in Table XI.

General changes in satisfaction during the program may be ascertained for each strata by determining the numbers and percentages of increases and decreases for all twenty-five variables. Blacks increased in satisfaction on eight of the variables, decreased on fourteen, and showed no change on three. Whites increased satisfaction on eleven of the variables, decreased on twelve, and stayed the same on two. In comparing the percentages of increases for the two groups, forty-four percent of the change scores were in an increasing direction for whites, and thirty-two percent were in an increasing direction for blacks. Thus, it may be concluded that white subjects increased their satisfaction levels more often than did blacks. Conversely, it may be also stated that blacks decreased their satisfaction more often than

TABLE XI

T-Tests of Black vs. White Mean Differences on
Pre- and Post-Tests, Questions 14 and 19.

Variable	Mean** Black	Mean*** White	t	p<.05*
Job Security	.29	.44	- .21	.8314
Fellow Officers	- .17	.13	- .51	.6129
Promotional System	- .57	- .33	- .32	.7489
Academy Training	- .83	- .20	- .99	.3267
Overtime Pay	- 2.14	- .17	-3.36	.0015*
Excitement	- 1.71	- .22	-3.56	.0008*
Salary	.00	.89	- .20	.8446
Equipment Maintenance	.29	.00	.47	.6396
Top Administration	- .14	- .31	.27	.7855
Immediate Supervisor	- .71	- .44	-1.08	.2870
Disciplinary System	- .43	- .23	- .67	.5062
Middle Management	- .43	.22	- .81	.4190
In-Service Training	.00	- .24	.35	.7247
Amount Overtime	- 1.14	- .16	-1.65	.1057
Syst. Deter. Wk. Schd.	- .86	.44	-2.05	.0460*
Personal App. Code	- .29	.18	- .94	.3529
Meth. Deter. Days Off	.14	.13	.02	.9872
Perf. Evaluation System	.14	- .20	.65	.5159
Freedom to Make Decis.	- .57	- .11	- .92	.3630
Meth. Deter. Assignmts.	.43	.89	.63	.5346
Recog. from Supervisors	.00	.16	- .26	.7936
Successful/Not Success.	.57	.00	1.52	.1345
Sad/Happy	- 1.50	.23	-2.05	.0458*
Important/Not Important	.33	- .14	- .21	.8382
Doing Best/Not Doing Best	.33	.74	- .49	.6240

**N varies from 6-7 because of missing data.

***N varies from 41-45 because of missing data.

whites.

Significant differences in the change statistics were found for four variables. Black satisfaction decreased significantly more than Whites on variables of Overtime Pay, Excitement, and System of Determining Work Schedules. Blacks also had significantly decreased feelings of happiness while at work.

Sex. The extent to which female satisfaction changed in comparison to male satisfaction was tested by the same procedures as those used for race. Mean differences were determined, and t-tests were computed on the stratified groups for all twenty-five PJSI variables. A summary of the results is presented in Table XIII.

Female satisfaction increased during the intervention period for twelve of the variables, and decreased for thirteen. Male satisfaction increased on ten of the variables, and decreased on fifteen. In comparing the two, female satisfaction increased by higher percentages than males: forty-eight percent of the mean differences were in the increasing direction for women, and forty percent in the increasing direction for men. It may be concluded that females increased their satisfaction on the twenty-five variables more often than did men; men increased their dissatisfaction more often than women.

TABLE XII

T-Tests of Male vs. Female Mean Differences on
Pre- and Post-Tests, Questions 14 and 19

Variable	Mean** Male	Mean*** Female	t	p .05*
Job Security	.24	1.83	- 2.10	.0410*
Fellow Officers	.02	.67	- 1.10	.2748
Promotional Systems	- .50	.67	- 1.51	.1378
Academy Training	- .33	.17	- .78	.4396
Overtime Pay	- .48	- .17	- .45	.6535
Excitement	- .33	.33	- 1.18	.2452
Salary	.20	- .83	2.24	.0297*
Equipment Maintenance	.20	- 1.17	2.20	.0327*
Top Administration	- .37	.33	- 1.08	.2846
Immediate Supervisor	- .09	- .50	.62	.5404
Disciplinary System	- .18	.67	- 1.32	.1924
Middle Management	- .11	.50	- 1.03	.3061
In-Service Training	- .15	- .67	.70	.4870
Amount Overtime	- .30	- .17	- .21	.8349
Syst. Deter. Wk. Schd.	- .04	- .33	.59	.5554
Personal App. Code	.20	- .50	1.33	.1900
Meth. Deter. Days Off	.07	.67	- .96	.3416
Perf. Evaluation System	- .09	- .60	.85	.3982
Freedom to Make Decis.	- .17	- .17	- .01	.9894
Meth. Deter. Assignmts.	.22	- .50	1.25	.2169
Recog. from Supervisors	.24	- .67	1.46	.1497
Successful/Not Success.	.05	.33	- .70	.4858
Sad/Happy	- .11	- .50	.50	.6220
Important/Not Important	- .26	.50	- .81	.4244
Doing Best/Not Doing Best	.70	.67	- .04	.9705

**N varies from 43-46 because of missing data.

*** N = 6

There were significant differences in these change scores on three variables. Female satisfaction increased significantly over male satisfaction for Job Security. Female satisfaction significantly decreased over males for Salary and Equipment Maintenance.

Division. Changes in satisfaction for division units were computed using the same techniques as those used for race and sex. Division was stratified into corrections personnel and law enforcement personnel. Included in the law enforcement category were road patrol officers and detectives. Results of these tests are summarized in Table XIII.

Corrections officers decreased their satisfaction during the intervention period much more frequently than they increased it: eighteen decreases and seven increases. Law enforcement officers increased their satisfaction much more often than they decreased it: fourteen increases, eight decreases, and three variables which showed no mean difference. In comparison, corrections officers had increased levels of satisfaction in twenty eight percent of the variables; and law enforcement officers had increased levels of satisfaction in fifty-six percent. It may be concluded that law enforcement officers increased their satisfaction on the variables much more

TABLE XIII

T-Tests of Corrections vs. Law Enforcement Officers
Mean Differences on Pre- and Post Tests, Questions 14 and 19

Variable	Mean** L.E.	Mean*** Corr.	t	p. < .05
Job Security	.57	1.18	- 2.17	.0349 *
Fellow Officers	.00	.29	- .73	.4673
Promotional Systems	- .43	- .24	- .36	.7209
Academy Training	.06	- 1.00	2.50	.0157 *
Overtime Pay	- .09	- 1.18	2.45	.0177 *
Excitement	- .06	- .65	1.56	.1250
Salary	- .09	.41	- 1.55	.1272
Equipment Maintenance	.17	- .24	.93	.3582
Top Administration	- .34	- .18	- .37	.7113
Immediate Supervisor	.00	- .41	.91	.3692
Disciplinary System	.06	- .35	.93	.3545
Middle Management	.17	- .47	1.63	.1103
In-Service Training	.00	- .65	1.31	.1967
Amount Overtime	- .20	- .47	.61	.5469
Syst. Deter. Wk. Schd.	.09	- .41	1.53	.1335
Personal App. Code	.20	- .06	.72	.4767
Meth. Deter. Days Off	.17	.06	.26	.7946
Perf. Evaluation System	.06	- .53	1.59	.1178
Freedom to Make Decis.	- .09	- .35	.73	.4687
Meth. Deter. Assignmts.	.23	- .06	.73	.4699
Recog. from Supervisors	.34	- .29	1.51	.1366
Successful/Not Success.	.03	.19	- .55	.5851
Sad/Happy	.00	- .47	.89	.3786
Important/Not Important	- .31	.18	- .66	.5096
Doing Best/Not Doing Best	.59	.88	- .50	.6170

**N varies from 32 to 35 because of missing data.

*** Nvaries from 16 to 17 because of missing data.

often than did corrections officers; and, corrections officers decreased their satisfaction much more often than law enforcement officers.

There were significant differences between the two groups for three variables. In comparison to law enforcement officers, corrections officers significantly increased their satisfaction with Job Security. However, they significantly decreased satisfaction with Academy Training and Overtime Pay.

Age. The extent to which older officers compared to younger officers for changes in satisfaction during the intervention period was analyzed by a slightly different procedure than that used for race, sex, and division. For each PJSI variable the subjects were stratified into 1) those who increased or did not change their satisfaction from pre- to post-testing, and 2) those who decreased their satisfaction. (Decreases and increases were, again, determined by differences between the pre- and post-test responses.) The mean ages of subjects in the two groups were compared with the twenty-five dichotomized variables by two-sample t-tests. A summary of the results is presented in Table XIV.

Numbers in the columns labeled Mean Age Decrease and Mean Age Increase represent the mean ages of all

TABLE XIV

T-Tests of Older vs. Younger Officers on
Increased and Decreased Satisfaction, Questions 14 and 19

Variable	Mean Age				t	p < .05*
	N	Decreased Scores	N	Increased Scores		
Job Security	12	32.67	40	32.10	- .21	.8328
Fellow Officers	18	30.17	33	33.61	1.48	.1455
Promotional Systems	23	33.70	29	31.07	- 1.18	.2455
Academy Training	15	33.60	36	31.89	- .69	.4936
Overtime Pay	22	29.32	30	34.37	2.33	.0237*
Excitement	19	30.79	33	33.06	.98	.3313
Salary	12	32.67	40	32.10	- .21	.8328
Equipment Maintenance	13	32.93	39	32.00	- .36	.7236
Top Administration	20	32.45	32	32.09	- .15	.8782
Immediate Supervisor	17	30.00	35	33.31	1.41	.1652
Disciplinary System	17	30.29	34	33.00	1.13	.2624
Middle Management	20	28.45	32	34.59	2.87	.0061*
In-Service Training	24	30.46	28	33.75	1.49	.1425
Amount Overtime	24	29.92	28	34.23	1.98	.0536
Syst. Det. Wk. Schd.	13	32.15	39	32.25	.04	.9687
Personal App. Code	13	31.31	39	32.54	.47	.6371
Meth. Det. Days Off	13	31.61	39	32.44	.32	.7533
Perf. Eval. System	18	30.17	30	33.50	1.35	.1838
Free. to Make Dec.	17	29.23	35	33.69	1.92	.0603
Meth. Deter. Assignmts.	14	33.00	38	31.95	- .42	.6795
Recog. from Supervisors	16	30.19	36	33.14	1.23	.2250
Successful/Not Success.	38	31.60	11	35.46	- 1.38	.1728
Sad/Happy	33	33.12	16	29.06	1.85	.0702
Not Important/Important	21	32.05	28	31.61	- .20	.8385
Doing Best/Not Doing Best	41	30.61	8	37.61	- 2.71	.0093*

subjects who decreased and increased their satisfaction, respectively. The Table may be read as in the following example: all subjects who decreased their satisfaction with fellow officers were generally younger, being 30.17 years of age; those subjects who increased their satisfaction were generally older, being 33.61 years of age. The difference between these ages was not, however, significant as evidenced by the .1455 level of probability.

Those subjects who increased their satisfaction with the variables were older in sixteen out of twenty-five variables (66%); conversely, those who decreased their satisfaction were younger in sixteen out of twenty-five variables (66%). It may be concluded that older officers increased in satisfaction during the intervention period much more frequently than did younger officers.

Significant age differences were found for three of the variables. Those subjects who reported decreased satisfaction with Overtime Pay were younger (29.32 years) than those who reported increased satisfaction (34.37 years). Subjects who decreased satisfaction with Middle Management were also significantly younger (28.45 years) than those who increased satisfaction (34.59 years). Finally, those who increased their perceptions that they were not doing their best were significantly younger (30.61 years) than those who increased in perceptions that they were doing their best (37.86 years).

Seniority. The extent to which senior officers compared with junior officers for changes during the intervention period was analyzed by the same methods as those used for age. A summary of the t-test results is presented in Table XV.

The number of times in which more experienced officers increased their levels of satisfaction was approximate to the number of times in which less experienced officers increased satisfaction. Subjects with more years of experience in the department increased their levels of satisfaction thirteen times (52%); subjects with less experience in the department increased their levels of satisfaction on twelve of the variables (48%).

Significant differences between the senior and junior officers was found in two of the variables. Subjects who decreased satisfaction with their Immediate Supervisor had spent significantly fewer years employed in the department (4.59 years), than those who had increased their satisfaction (6.86). The same relationship holds true for Middle Management, wherein subjects with decreased satisfaction were employed for an average of 6.65 years, and those with increased satisfaction were employed 7.03 years.

TABLE XV

T-Tests of Senior vs. Junior Officers (Mean Years Service)
and Increased and Decreased Satisfaction, Questions 14, 19

Variable	Mean Years of Service				t	p < .05*
	N	Decreased Scores	N	Decreased Scores		
Job Security	12	6.75	40	5.92	- .73	.4679
Fellow Officers	18	5.22	33	6.64	1.42	.1629
Promotional Systems	23	6.83	29	5.55	- 1.35	.1835
Academy Training	15	7.53	36	5.64	- 1.86	.0688
Overtime Pay	22	5.73	30	6.40	.70	.4877
Excitement	19	5.74	33	6.33	.60	.5489
Salary	12	6.17	40	6.10	- .06	.9533
Equip. Maintenance	13	6.46	39	6.00	- .42	.6769
Top Administration	20	6.65	32	5.78	- .89	.3768
Immediate Superv.	17	4.59	35	6.86	2.35	.0229*
Disc. System	17	5.47	34	6.24	.77	.4411
Mid. Management	20	6.65	32	7.03	2.58	.0128*
In-Service Train.	24	5.33	28	6.79	1.55	.1270
Amount Overtime	24	5.62	28	6.54	.96	.3421
Syst. Det. Wk. Schd.	13	6.31	39	6.05	- .23	.8171
Personal App. Code	13	6.15	39	6.10	.05	.9631
Meth. Det. Days Off	13	6.31	39	6.05	- .23	.8171
Perf. Eval. System	18	5.39	30	6.43	.99	.3255
Free. to Make Dec.	17	5.23	35	6.54	1.31	.1976
Method Deter. Assgts.	14	5.75	38	6.03	- .31	.7598
Recog. from Superv.	16	6.91	36	6.28	.51	.6114
Successful/Not Suc.	38	6.08	11	6.91	- .70	.4858
Sad/Happy	33	6.58	16	4.81	1.83	.0737
Not Important/Imp.	21	6.48	28	5.64	- .89	.3786
Doing Best/Not D.B.	41	5.66	8	7.75	- 1.70	.0952

Analysis of Subject Terminations From the Program

The concern addressed in this section involves whether there were major satisfaction differences between those who chose to drop-out of the Stress Reduction Program, and those who did not. Determining this may provide some insight as to why participants discontinued their involvement.

General characteristics of the drop-out group are as follows: twenty four were white, and three black; twenty four were male, and three female; sixteen were law enforcement officers and eleven were corrections officers. The mean age of those who dropped out was 32.07 years, and the mean age of those who did not drop out was 31.93 years. The mean number of years employed with the department was 5.6 for those who dropped out, and 5.96 for those who did not.

To answer the question of whether there were differences in initial satisfaction levels between the two groups, all subjects were stratified into two categories: those who dropped out, and those who did not. The mean levels of satisfaction on each pre-test PJSI variable was computed for the two groups, and was compared using two-sample t-tests. The results of these tests are summarized in Table XVI.

TABLE XVI
T-Tests of Drop-Outs vs. Non-Drop-Outs
on Pre-Test Questions 14 and 19

Variable	Mean Scores				t	p. < .05*
	N	Drop-Outs	N	Non-Drop-Outs		
Job Security	26	3.19	53	2.98	- .61	.5437
Fellow Officers	26	4.50	52	4.23	- .97	.3357
Promotional System	26	2.62	53	3.04	1.23	.2220
Academy Training	24	3.63	52	3.56	- .18	.8611
Overtime Pay	26	3.88	53	4.49	1.98	.0514
Excitement	26	4.27	53	4.79	2.05	.0442*
Salary	26	3.85	53	4.43	1.45	.1507
Equip. Maintenance	26	3.67	53	3.81	1.63	.1080
Top Administration	26	3.27	53	3.70	1.20	.2321
Immediate Superv.	26	4.12	53	4.68	1.76	.0828
Disc. System	26	2.65	53	3.08	1.31	.1948
Mid. Management	26	3.50	53	3.66	.60	.5511
In-Service Train.	26	2.65	53	3.42	2.16	.0338*
Amount Overtime	26	4.08	53	3.79	-1.00	.3202
Syst. Det. Wk. Schd.	26	3.65	53	3.91	.73	.4684
Personal App. Code	26	4.00	53	4.25	.74	.4619
Meth. Det. Days Off	26	3.77	50	4.04	.71	.4826
Perf. Eval. System	26	2.77	50	3.18	1.22	.2271
Free. to Make Dec.	26	3.81	53	4.49	2.20	.0307*
Meth. Deter. Assgts.	26	3.50	53	3.75	.75	.4547
Recog. fm. Superv.	26	2.81	53	3.36	1.50	.1389
Successful/Not Suc.	26	2.35	51	1.98	-1.35	.1812
Sad/Happy	26	4.96	49	5.31	.93	.3542
Not Important/Imp.	26	4.96	49	5.04	.21	.8370
Doing Best/Not D.B.	26	1.92	50	1.90	.07	.9410

Mean satisfaction scores for those who dropped out were lower than for those who did not on nineteen out of twenty-five variables (76%); mean satisfaction scores for the drop-outs were higher than for the non-drop-outs on twenty-four of the variables (24%). It may be concluded that the drop-outs were generally less satisfied at the time of pre-testing than those subjects who continued to participate in the program.

Significant differences between the two groups were found on three of the variables. Drop-outs were significantly less satisfied with Excitement, In-Service Training, and Freedom to Make Decisions. Of particular note is the higher level of dissatisfaction with In-Service Training. In that the Stress Reduction Program may have been viewed as a form of in-service training, the low satisfaction with this variable may have been an important factor in the subjects' dropping-out.

Summary

Analysis of Demographic Variables. Based on a stratified analysis of increases and decreases in satisfaction with the twenty-five PJSI variables during the intervention period, some generalizations may be made. It is emphasized that these generalizations are primarily for descriptive purposes. A summary of the number of times, and the percentages, that each strata increased, decreased or did not change levels of satisfaction on the PJSI variables is presented in Table XVII.

TABLE XVII

Pre- and Post-Test Satisfaction Differences By Strata

Strata	N	% of Decreases	N	% of Decreases	N	% of No Change
Black	14	56%	8	32%	3	12%
White	12	48%	11	44%	2	8%
Female	13	52%	12	48%	0	0
Male	15	60%	10	40%	0	0
Law Enforce.	8	32%	14	56%	3	12
Corrections	18	72%	7	28%	0	0
Older	9	36%	16	64%	-	-
Younger	16	64%	9	36%	-	-
Senior	12	48%	13	52%	-	-
Junior	13	52%	12	48%	-	-

The following observations may be made for the changes in the strata during the intervention period: 1) white satisfaction increased more often than black satisfaction; 2) female satisfaction increased more often than male satisfaction; 3) satisfaction in law enforcement officers increased much more often than in corrections officers; 4) satisfaction in older officers increased much more often than in younger officers; and 5) senior and junior officers increased satisfaction at approximately the same frequency. Of course, the converse of these observations may also be stated: black dissatisfaction increased more than white; male dissatisfaction increased more than female; corrections officer dissatisfaction increased more often than for law enforcement officers; younger persons increased dissatisfaction more often than older persons; and senior and junior dissatisfaction increased at approximately the same frequency.

The extent to which the changes on each of the PJSI variables by strata were significant was determined by using two-sample t-tests. Significant differences were found in all of the stratifications. Black satisfaction significantly decreased more than white satisfaction on variables of Overtime Pay, Excitement, System of Determining Work Schedules, and in perceptions of Happiness at Work. Female satisfaction significantly increased over male satisfaction in Job Security, but

significantly decreased for Salary and Equipment Maintenance. Correction Officer satisfaction significantly increased over Law Enforcement on the variable of Job Security, but significantly decreased for Academy Training and Overtime Pay. Younger officer satisfaction significantly decreased over older officer satisfaction with Overtime Pay, Mid-Management and Perceptions of Doing Their Best. Junior Officers significantly decreased satisfaction over more senior officers for variables of Immediate Supervisor and Mid-Management.

Analysis of Terminations From the Program. A comparison of the pre-test mean satisfaction scores for those subjects who dropped-out with those who did not reveals that drop-outs were generally less satisfied on the twenty-five PJSI variables. Significant differences between the two groups were found on three variables. Drop-outs were significantly less satisfied with variables of Excitement, In-Service Training, and Freedom to Make Decisions.

CHAPTER VII

SUMMARY, CONCLUSIONS, DISCUSSIONS AND RECOMMENDATIONS

In this chapter a summary of the purpose, methods and results of hypothesis testings are presented. Conclusions and discussions of the results of the hypothesis testings and interpretative data analysis are also included. Recommendations for future research are suggested.

Purpose

Research into the problem of stress experienced by law enforcement and corrections officers is still in the early stages of development. There is a need to develop an expanded empirical understanding of this stress, and of the effectiveness of different ameliorative techniques. The exploratory research conducted in this thesis investigated the effects of a Stress Reduction Program on the self-reports of job satisfaction in law enforcement and corrections personnel in a medium-sized sheriff's department.

Method

The experimental design of this study consisted of pre- and post-testing of eighty-eight randomly selected

subjects from both law enforcement and corrections divisions to determine the effects of a ten-month Stress Reduction Program on twenty-five self-reported job satisfaction and dissatisfaction variables. The program had four stress reduction intervention modes: physiological training, psychological training, a combination of physiological and psychological training, and professional training.

Three hypotheses were developed which posited that 1) the Stress Reduction Program would result in an overall increase of self-reported job satisfaction on the part of all subjects in the program, 2) the stress reduction program would result in within group increases of self-reported job satisfaction, and 3) there would be significant differences between the four intervention modes in increases of job satisfaction.

To test the first two hypotheses, t-tests of significance were conducted on pre- and post-test measures. To test the third hypothesis, an analysis of variance was computed on the mean differences in satisfaction from pre- to post-testing for the four intervention groups.

Additional interpretative analyses were conducted to determine whether there were any significant differences in satisfaction changes between subjects by race, sex, division, age, and seniority. Finally, the dif-

ferences in satisfaction on the pre-test instrument between subjects who dropped out of the program, and subjects who remained in the program were analyzed.

Results

The hypotheses were generally not supported. Null tests for within sample changes on the twenty-five variables were rejected only twice, and not in the expected direction. Participants reported significantly decreased satisfaction with Overtime Pay, and in their perceptions that they were Doing Their Best while at work. Null tests for within group changes were rejected on four variables, one in the expected direction, and three not in the expected direction. Subjects in the Physiological Group reported significant increases in Job Security, but significant decreases in perceptions of Doing Their Best. Participants in the Psychological Group reported decreased satisfaction with the System of Determining Work Schedules, and with the Method of Determining Assignments. Null tests for between group differences were not rejected for any of the variables.

Interpretative data analysis computed on variables of race, sex, division, age and seniority by two-sample t-tests on pre- and post-test mean differences revealed that

- 1) blacks significantly decreased their satisfaction in

comparison to whites on variables of Overtime Pay, Excitement, System of Determining Work Schedules, and Happiness at Work; 2) females significantly increased in satisfaction in comparison to males for Job Security, but significantly decreased for Salary and Equipment Maintenance; 3) corrections officers significantly increased satisfaction in comparison to law enforcement officers for Job Security, but significantly decreased for Academy Training and Overtime Pay; 4) younger officer satisfaction significantly decreased over older officer satisfaction with Overtime Pay, Mid-Management and Perceptions of Doing Their Best; and 5) junior officers significantly decreased satisfaction over more senior officers for variables of Immediate Supervisor and Mid-Management.

Conclusions

In that the research hypotheses were not supported, it is concluded that implementation of the Stress Reduction Program did not generally affect job satisfaction of the participants. It is also concluded that no one form of intervention was more powerful in affecting job satisfaction than another. Where significant changes were found for the three hypotheses, only one was in the expected direction of increasing satisfaction, and five were in the direction of decreased satisfaction.

The analysis of interpretative data suggests that participation in a Stress Reduction Program may have differently affected satisfaction levels on a number of variables for blacks in comparison to whites, women in comparison to men, corrections officers in comparison to law enforcement officers, younger in comparison to older officers, and senior in comparison to junior officers.

Discussion of the Results

Lack of Significance. In light of the above conclusions, several questions must be raised and addressed. First, why were there so few significant changes during the intervention period? And second, where significant differences were found, why were they in the unexpected direction of decreased satisfaction?

The Stress Reduction Program was a comprehensive, carefully planned experiment. Methods to reduce stress on the two major levels in which an individual may experience it -- physically and psychically -- were utilized. An extended period of time was allowed in order for the interventions to have a maximum impact upon participants. Subjects were carefully monitored prior to, during, and upon completion of the program. The interventions were carefully monitored throughout the experimental period

to ensure optimal consistency in the quality of the various modes.

There were, however, several limitations which may have been important factors in the apparent lack of impact upon participants. The first limitation involves the voluntary nature of the program. Success of a voluntary experiment necessarily depends upon strong internal motivation on the part of subjects. The extent to which subjects participated in this experiment was left to the discretion of the individual. Attending the psychological or professional group meetings, or exercising the prescribed number of hours was ultimately within the control of the subject. It may be that there were subjects who did not formally drop out, but who also did not adhere to the prescribed interventions. These persons may have been "in the program," without truly being participants. This possibility is evidenced by the fact that attendance at the various group meetings was somewhat low at times. The low attendance was despite the fact that deputies and corrections officers were allowed to attend the meetings during their regular duty hours -- should they be on duty -- and despite the fact that they were painstakingly reminded of meetings both by memo and by phone. Perhaps subject motivation to reduce stress was simply not strong enough to result in changes during the intervention period.

In that the Stress Reduction Program was an experiment, it was inappropriate to force participation upon individuals. It is possible, however, that should such a program be implemented as part of regular in-service training, and not as an experiment, greater impact may be effected. This, of course, is purely a matter of conjecture and speculation at this point.

Another limitation of the program may have been the time span in which it was conducted. The program was designed to allow time to first, raise the consciousness levels of the individuals in regards to stress, and second, to provide ample training and opportunity to reduce levels of recognized stress. The time period was also planned to allow for accurate measurements of true physiological and psychological changes. Maintaining interest and motivation in an experiment over a ten-month time period is a difficult task. Perhaps a shorter and more intensive design would have had a greater impact upon the participants.

Aside from limitations in the design of the experiment, there are other possible reasons as to why the subjects were generally not affected by the program. One of these relates to initial levels of satisfaction found in the participants. Subjects were generally slightly dissatisfied to moderately satisfied with the job variables measured.

If job satisfaction is a true index of stress, then it may be concluded that participants were not under extreme stress, but were only slightly stressed. To anticipate a major shift in satisfaction, or a major reduction of stress, in individuals who are only slightly dissatisfied or stressed may be an unrealistic expectation. Had the participants been under a great deal of stress, more significant changes may have resulted.

Another possible reason why the experiment may not have had much of an effect upon job satisfaction relates to the focus of the program. There is a major problem inherent in programs which attempt to reduce stress by manipulating the person under stress, rather than the stressor. A focus on the individual may be most appropriate when the stressors are perceived as uncontrollable, and least appropriate when they are viewed as controllable. The majority of job satisfaction variables analyzed in this thesis related specifically to controllable, inter-organizational, operational conditions of the job. If officers are dissatisfied or feeling stressed by these conditions, then a stress reduction program may help them cope with their responses to their dissatisfaction. It will probably not, however, change actual dissatisfaction with the actual conditions. For example, if officers are

generally dissatisfied with a system of determining work schedules, then perhaps the more appropriate focus is to change the system rather than the individual. It may be that the ultimate Stress Reduction Program is that which concentrates not upon the individual officers, but upon the controllable variables inducing stress.

While somewhat speculative, there is another possible explanation for the apparent lack of significance in the program. Many of the instruments developed to research stress have involved the measurement of subject responses to changes in life events.¹ It has been hypothesized that change is, in and of itself, a stressor.² Should this indeed be the case, then it would be expected that organizational changes would have an effect upon stress, and therefore upon job satisfaction as an index of stress.

The Washtenaw County Sheriff's Department is currently operated by a dynamic, future-oriented administration which has implemented a number of innovative programs within the department. In the last several years, major changes have either been made, or culminated in implementation and effectiveness. Some of these changes

¹Catherine E. Ross, and John Mirowsky II. "A Comparison of Life-Event-Weighting Schemes: Change, Undesirability, and Effect-Proportional Indices." Journal of Health and Social Behavior 20 (June 1979), p. 166.

²Ibid., p. 167.

include the development of an Assessment Center which recruits new officers in a more objective, standardized fashion. A new Promotional System was designed and implemented to ensure fairer, more objective and standardized procedures for promotion within the department. A permanent Personnel Development Committee, designed and coordinated by deputies, corrections officers, and administrators was established within the department to continuously upgrade the quality and operational efficiency of the officers. Included in this was the implementation of a standardized program of selecting Field Training Instructors, and training new recruits. A Special Operations Team was established to deal with volatile crisis situations in Washtenaw County, and entailed extensive internal and external training of members of the team.

The Social Justice Team Project also began operating in the department. The major purposes of the project were to effect both role changes and operational changes. One of the major changes was the implementation of a policy designed to train and sensitize the officers to the needs of mentally ill subjects with whom they interact, and also to improve the interagency cooperation with mental health services. Similar changes are also being reviewed for the handling of domestic disturbances, And of course, the Stress Reduction Program was in and of

itself a major innovation within the department.

One more aspect of change within the department stems from the fact that the period of experimental interventions spanned the year before an election. Any election implies the potential for change. While high standards are normally expected of officers in non-election years, it is a well-known phenomenon that as an election approaches, an especially high quality of performance is expected from officers.

The point of this discussion is that if change is indeed a stressor, then one may conjecture that the officers within the Sheriff's Department have been exposed to a number of potentially stress inducing conditions. The changes have resulted in an increase of productivity on the part of officers. It is possible that the combination of changes and increased productivity would have resulted in a greater decrease of satisfaction were it not for the Stress Reduction Program. The program may have maintained a level of satisfaction which would have otherwise decreased.

Unexpected Direction of Significance. Possible explanations for the unexpected significant decreases in satisfaction during the intervention period relate to the previous discussion of focus of the program. It is not

concluded that the Stress Reduction Program generally induced decreases in satisfaction with the variables. It is more likely that dissatisfaction with Overtime Pay, Systems of Determining Work Schedules and Assignments, and perceptions of how much effort officers were putting into their job was related to operational conditions within the department.

In regards to overtime pay, there were some policy changes within the department and this may have been the precipitating factor. There is, however, one possibility directly related to the Stress Reduction Program. If officers were on duty when the various group meetings were held, then they were allowed time off from their regular responsibilities to attend the meetings. However, if they were not on duty, then officers were expected to attend meetings on their own time without reimbursement. Subjects may have perceived the attendance at the meetings to be a form of overtime work, without pay, and perhaps this accounts for the decreased satisfaction.

In regards to work schedules and assignments, new schedules are arranged once every three months. It is most likely that officers who reported increased dissatisfaction may have been unhappy with their new schedules and assignments during the intervention period.

Interpretative Data. Some conclusions might be made as to which subjects were more positively or negatively affected during the course of the program. The most notable comparisons involve the high decreases in satisfaction for corrections officers when compared to law enforcement officers, and the high decreases in satisfaction for younger officers when compared to older officers.

During the course of the program, overall satisfaction for corrections officers decreased on 72% of the variables, and increased for law enforcement officers on 56% of the variables. It may be that law enforcement officers benefit more from involvement in a stress reduction program than corrections officers, and corrections officers may be negatively affected by involvement in the program. Younger persons also decreased satisfaction in 64% of the variables compared to an increase in satisfaction by older officers. The same conclusions could be drawn that older officers are more likely to be positively affected by involvement in the program, and younger officers more negatively affected. While not as dramatic in terms of differences, blacks appear to have been more negatively affected during the course of the program than whites, and men more than women.

The implications of these findings are important primarily as they would relate to future development of Stress Reduction Programs. It is possible that such

programs are inappropriate for corrections officers, despite the fact that they share many of the same stressors as law enforcement officers. Similarly, it is possible that younger officers are less receptive to stress training than older officers, and attempts to alleviate stress may have a paradoxical effect upon them.

Of course, there is a dilemma. One would assume that persons who are most dissatisfied would be the ones who would most need, and would most benefit, from a Stress Reduction Program. This brings us, again, to the problem of determining the relationship of external variables to the effects of the Stress Reduction Program. One can only speculate that the Stress Reduction Program may have paradoxically affected the participants. The decreased satisfaction may have been due to external circumstances.

Drop-Outs vs. Non-Drop-Outs. It is possible that persons who are less satisfied, and under more stress are the least amenable to stress reduction interventions. This is somewhat evidenced by the fact that those subjects who dropped-out were generally less satisfied on the PJSI variables than those subjects who remained in the program. Perhaps they are hesitant to consciously examine their feelings of dissatisfaction; initial recognition may serve to amplify the feelings rather than mitigate them.

Drop-outs were significantly less satisfied than non-drop-outs on variables of In-Service Training, and Freedom to Make Decisions. It is possible that the Stress Reduction Program was viewed as a type of In-Service Training, and this was a motivating factor in the subject's dropping-out of the program. Further, by dropping-out, it was one way in which officers could exercise their freedom to make decisions, and this too may have been a factor.

Recommendations

In some respects, the result of this research raises more questions than it answers. A major assumption behind the research is that officers are under stress, that the stress negatively affects them, and that directly addressing the problems through training mitigates the responses to stressors. Results of this research leads towards a reexamination of these assumptions.

The receptiveness to Stress Reduction Programs on the part of law enforcement and corrections officers should be examined. It may well be that they are not interested in programs to reduce their stress, but would rather deal with it on a personal, private level and not on an operational level.

A great deal of research needs to be done to determine

if corrections officers are also under stress. Even though they share many of the same occupational stressors as law enforcement officers, it may be that they do not perceive their work to be particularly stressful.

A better understanding needs to be reached of the relationship between job satisfaction and stress, between job satisfaction and stress reduction techniques, and between stress and stress reduction techniques. It is possible that an officer's stress level is reduced through various techniques, but the satisfaction level remains the same regardless. Research might be conducted which concentrates specifically on manipulation of organizational stressors, and the measurement of subsequent changes in levels of satisfaction.

Research should also be conducted to compare the effectiveness of short-term, intensive stress reduction programs to long-term, less intensive programs. One may prove to be more effective than the other.

Hans Selye notes that "life is largely a process of adaptation to the circumstances in which we exist."³ Stress is a natural by-product of existence, and it is "not even necessarily bad" but also the "spice of life."⁴ Hopefully, additional research will assist law enforcement and corrections officers to better adapt to those

³Selye, op. cit., 1978, p. xv.

⁴Ibid.

occupational stressors which induce distress, as well as to maximize the benefits from those experiences which promote personal and professional growth.

APPENDICES

APPENDIX A

MICHIGAN STATE UNIVERSITY
Washtenaw County Sheriff's Project
Informed Consent Form

Explanation of Project

The Washtenaw County Sheriff's stress conditioning project is an experimental program designed to reduce occupational stressors and improve officers' ability to resist the stresses that arise in police work. The project will entail (a) pre-testing participants on a battery of physical and psychological assessment procedures, (b) involvement in one of four ten-month training programs, and (c) post-testing of subjects on the same schedule of instruments.

The program is experimental in the sense that it seeks to establish the effectiveness of the four training programs. None has yet been proven to be valid, although all four are believed to be useful.

The pre- and post-tests will include (1) a stress test involving running on a treadmill under the appropriate supervision of a cardiologist, (2) a body composition evaluation which includes underwater weighing and body circumference measurements for the purpose of determining percent body fat, (3) a muscle strength test which includes strength measures for the upper body region, (4) a blood analysis which will be taken by a medical technologist for the purpose of assessing blood constituents and especially those related to cardiovascular risk factors, (5) a health hazard appraisal test which will be given by an M.D., and (6) four standardized, paper-and-pencil questionnaires that will test attitudes and outlook towards police stress. All data that we obtain from these tests will be coded, and the results will be discussed only in terms of coded data and group scores.

During the training portion of the program, you will be assigned to one of four different training methods, in which you will receive instruction and practice techniques of combatting stress. You will not be asked to do anything that is harmful or dangerous.

It is also important that you understand that we do not think there is anything wrong with you. This program is intended to be presented to normal police and correctional officers, to help them cope

with the normal pressures of their job. If you participate and the program is successful, you will then be in a better condition to practice your profession than most other officers in the country.

If you elect to participate in the program, all information we gather--from both the pre-test and the post-test--will be kept confidential. All data will be coded, including your identity. Results will be discussed and presented in terms of coded data and group scores.

If you choose not to participate, that fact too will be kept confidential. There will be absolutely no penalty for refusing this invitation.

The risks of participation will be minimal, as all the techniques that will be employed are standard procedures from other spheres of training and research. Possible immediate hazards could be slight skin abrasions resulting from electrode placement, small hematomas resulting from blood collection procedures, and local muscle soreness following routine exertion. No long range risks are foreseen.

Benefits to subjects who participate will be increased knowledge about themselves, increased ability for professional performance (assuming the program proves to be effective), and (depending on the training group) increased physical fitness or mental conditioning.

Participants Consent

I understand the nature of the stress conditioning program, as it was explained above.

I understand the risks of the program, as they were explained above.

I understand that I am free to refuse to participate and to withdraw from the experiment at any time, and that such refusal or withdrawal will not adversely affect any future considerations.

I would like to participate.

Date

Signature

Witness

APPENDIX B

CENTER FOR FITNESS AND SPORTS RESEARCH
EVALUATION AND TRAINING SERVICES

1. COMPREHENSIVE TESTING PACKAGE
*Includes 2,3,5, and 8
2. EXERCISE PERFORMANCE TEST (test time: about 2 hours)

* Resting 12-Lead ECG	* Attending Cardiologist
* Blood Pressure	* Computerized Data Output
* Oxygen Utilization Data	* Exercise Prescription, Counseling
3. BODY COMPOSITION ANALYSIS (test time: about 1 hour)

* Percent Body Fat	* Computerized Data Output
* Lean Body Weight	* Residual Lung Volume
* Ideal Body Weight	* Body Composition Counseling
4. DIETARY AND NUTRITIONAL COUNSELING (test time: about 1 hour)

* 5-Day Diet Inventory	* Saturated Fat Intake
* Average Daily Caloric Intake	* Refined Sugar: Starch Intake
* Cholesterol Intake	* Dietary Counseling Session
5. BLOOD PROFILE ANALYSIS (test time: 15 minutes)

* Standard Blood Chemicals	* Serum Triglycerides
* Serum Cholesterol	* Fasted Glucose Levels
6. BLOOD CARDIOVASCULAR DISEASE RISK ANALYSIS (test time: 15 min.)

* Above Blood Profile	* High and Low Density
* CV Risk Counseling	* Lipoprotein Analysis
7. MUSCLE STRENGTH TEST (test time: about 1 hour)

* Single Joint Tests	* Explosive Power
* Muscle Strength	* Opposing Muscle Imbalance
* Fatigue Rate	* Muscle Strength Counseling
8. PULMONARY FUNCTION TESTS (test time: about 30 minutes)

* Peak Flow Rate	* Residual Volume
* Total Lung Capacity	* Maximum Minute Ventilation
* Timed Vital Capacity	* Pulmonary Function Counseling
9. SUPERVISED PHYSICAL TRAINING PROGRAMS

* 16 Week Training Sessions	* Qualified Exercise Leaders
* 3 Hours per Week	* Exercise and Nutrition Seminars

Basic Training Package (includes 2, 3, 5, and 9)

Total Training Package (includes 2, 3, 4, 5, 7 8, and 9)

Continuation Plan (includes 9)

APPENDIX C

THE UNIVERSITY OF MICHIGAN
Department of Physical EducationINFORMED CONSENT FORM
Washtenaw County Sheriff's Project

Subjects participating in this project will be (1) pre-tested in the Center for Fitness and Sports Research, (2) involved in a 10 month training program, and (3) post-tested in the Center.

The pre-tests will include (1) a stress test which involves running on a treadmill under the appropriate supervision of a cardiologist, (2) a body composition evaluation which includes underwater weighing and body circumference measurements for the purpose of determining percent body fat, (3) a muscle strength test which includes strength measures for the upper body region, (4) a blood analysis which will be taken by a medical technologist for the purpose of assessing blood constituents and especially those related to cardiovascular risk factors, and (5) a health hazard appraisal test which will be given by an M.D. in the Department of Preventive Medicine. All subject's data will be coded and the results will be discussed in terms of coded data and group means.

During the training portion of the experimental protocol either one of the investigators or a qualified technician will be available for consultation with the subjects regarding their individualized fitness program. Standard exercise routines such as jogging, swimming, calisthenics, racket sports, team sports and others will be utilized on an individual selected basis. Individual participation in the fitness training will be kept confidential. The post-testing portion of the study (December, 1979) will be an administration of those tests that were conducted during the pretest. All subject's data will be coded and the results will be discussed in terms of coded data and group means.

The risks to the subjects will be minimal as all the techniques to be employed in this study are standard techniques in the area of exercise research. Possible immediate risk to the subject could be a slight skin abrasion from the

electrode placements, small hematomas resulting from the blood collection procedures, and local muscle soreness following the exercising portions of the study. No long range risks are expected to result from the procedures utilized in this study. The benefits to the subjects will be a knowledge of their cardiovascular system, and an increase in their physical exercising capacity due to the 10 month training program.

I understand the nature of the fatiguing and non-fatiguing exercise and training programs, the placement of the electrodes, and the procedures for the drawing of blood.

I understand the risks involved in the exercise (local muscle soreness), the placement of the electrode (skin abrasions) and the blood collection procedure (hematoma).

I understand that I am free to refuse to participate and to withdraw from the experiment at any time and that such refusal will not adversely influence future considerations.

Date

Signature

Witness

APPENDIX D POLICE JOB STRESS INVENTORY

21
1 1

Code Number

1. How long have you worked for the Washtenaw County Sheriff's Department?

 Years Months

2. Have you ever worked as a police officer in any other department(s)?

 1. Yes 2. No

If yes, for how long?

 Years Months

3. a. How long have you been on your present assignment?

 Years Months

- b. In an average week, how many hours do you usually work on the following types of assignments:

1. In a marked police car Hours
2. In an unmarked police car Hours
3. On a motorcycle Hours
4. In a police station or office Hours

- c. In an average week, how many hours do you usually work:

1. Alone Hours
2. With an assigned partner Hours
3. With more than one person Hours

4. In your job, do you usually have direct supervisory responsibility over other officers or civilian employees?

 1. Yes 2. No

- a. If yes, how many people do you usually supervise?
(FILL IN THE NUMBER OF PEOPLE)

 People

-3-

7. In the last month approximately how many hours of overtime did you work per week?

7 1 Hours per week

- a. Of those overtime hours, about how many hours per week did you want to work?

2 2 Hours per week

- b. How many hours of overtime would you like to work per week?

7 5 Hours per week

8. In addition to your job with the police department do you now: $\frac{2}{1} \frac{2}{2} \frac{1}{3} \frac{1}{4} \frac{1}{5}$

- a. Attend school/university 1. Yes 2. No

If Yes, how many hours per week? Hours per week

- b. Hold an off-duty police/security job? 1. Yes 2. No

If Yes, how many hours per week? Hours per week

- c. Hold another (non-police) off-duty job (including self-employed)?

 1. Yes 2. No

If Yes, how many hours per week? Hours per week

-4-

9. From a professional standpoint, how much do you like or dislike handling the following dispatches, situations, or duties? Use the following code:

1 = Dislike very much	4 = Like slightly
2 = Dislike moderately	5 = Like moderately
3 = Dislike slightly	6 = Like very much

For example, if you "dislike moderately" a certain situation, place a "2" in the blank to the left of it. If you "like very much" a situation, place a "6" in the blank.

_____ Domestic disturbance	_____ Robbery in progress
_____ Person with gun	_____ Taking rape reports
_____ Auto accidents	_____ Sudden death/D.O.A.
_____ Prowler	_____ Burglary in progress
_____ Shooting	_____ Offense incident reports
_____ Routine patrol	_____ Routine department paperwork
_____ Car check	_____ Another officer needs assistance
_____ Pedestrian check	_____ Unknown nature of call
_____ Delivering death message	_____ High speed auto chase
_____ Silent burglar alarms	_____ Mentally disturbed person
_____ Possible homicide	_____ Staying alert to the police radio
_____ Child beating	

10. From a personal standpoint, how much do you like or dislike handling the following dispatches, situations, or duties? Use the following code:

1 = Dislike very much	4 = Like slightly
2 = Dislike moderately	5 = Like moderately
3 = Dislike slightly	6 = Like very much

For example, if you "dislike moderately" a certain situation, place a "2" in the blank to the left of it. If you "like very much" a situation, place a "6" in the blank.

_____ Domestic disturbance	_____ Robbery in progress
_____ Person with gun	_____ Taking rape reports
_____ Auto accidents	_____ Sudden death/D.O.A.
_____ Prowler	_____ Burglary in progress
_____ Shooting	_____ Offense incident reports
_____ Routine patrol	_____ Routine department paperwork
_____ Car check	_____ Another officer needs assistance
_____ Pedestrian check	_____ Unknown nature of call
_____ Delivering death message	_____ High speed auto chase
_____ Silent burglar alarms	_____ Mentally disturbed person
_____ Possible homicide	_____ Staying alert to the police radio
_____ Child beating	

-5-

21-1-1

11. How tense or relaxed do you feel in handling the following situations or duties? Use the following code:

1 = Very tense	4 = Slightly relaxed
2 = Moderately tense	5 = Moderately relaxed
3 = Slightly tense	6 = Very relaxed

- _____ Domestic disturbance
- _____ Person with gun
- _____ Auto accidents
- _____ Prowler
- _____ Shooting
- _____ Routine patrol
- _____ Car check
- _____ Pedestrian check
- _____ Delivering death messages
- _____ Silent burglar alarms
- _____ Possible homicide
- _____ Child beating
- _____ Robbery in progress
- _____ Taking rape reports
- _____ Sudden death/D.O.A.
- _____ Burglary in progress
- _____ Offense incident reports
- _____ Routine department paperwork
- _____ Another officer needs assistance
- _____ Unknown nature of call
- _____ High speed auto chase
- _____ Mentally disturbed person
- _____ Staying alert to the police radio

-6-

12. In the next set of questions, assume you had the job you would most like to have. Use the following code:

1 = Rarely	4 = Fairly often
2 = Occasionally	5 = Very often
3 = Sometimes	

How often would you like to:

- ☐ Be able to predict what others expect of you on your job
- ☐ Experience a marked increase in how fast you have to think
- ☐ Have a chance to develop new talents
- ☐ Remain seated
- ☐ Experience a sharp increase in work load
- ☐ Have the opportunity to be creative
- ☐ Be certain about what your job responsibilities were
- ☐ Do different things each day
- ☐ Work in the same location
- ☐ Know how well you did at the end of the day
- ☐ Be certain about what others expect of you on the job
- ☐ Experience a marked increase in the amount of concentration required on your job
- ☐ Repeat the same activities over and over
- ☐ See the results of your work

13. In the following question, use this code:

1 = Very little	4 = Much
2 = Little	5 = Very much
3 = A moderate amount	

If you could have the job you would most like to have, how much:

- ☐ Would you like to decide with others what part of a task you will do
- ☐ Responsibility would you like to have for the morale of other officers
- ☐ Time would you like to have to do all your work
- ☐ Responsibility would you like to have for the well-being of other officers
- ☐ Time would you like to have to think and contemplate
- ☐ Would you like to participate with others in making decisions that affect you
- ☐ Free time between heavy work load periods would you like to have
- ☐ Would you like to participate with others in determining the way things are done on your job
- ☐ Freedom would you like to have in setting your own work hours and days off

-7-

14. How satisfied or dissatisfied are you with the following elements of your job as a police officer? Use the following code:

1 = Very dissatisfied	4 = Slightly satisfied
2 = Moderately dissatisfied	5 = Moderately satisfied
3 = Slightly dissatisfied	6 = Very satisfied

_____ Job security 1	_____ Middle management 12
_____ Fellow officers 2	_____ In-service training 13
_____ Promotion system 3	_____ Amount of overtime 14
_____ Academy training 4	_____ System of determining work schedules 15
_____ Overtime pay 5	_____ Personal appearance code 16
_____ Excitement 6	_____ Method of determining days off 17
_____ Salary 7	_____ Performance evaluation system 18
_____ Equipment maintenance 8	_____ Freedom to make decisions 19
_____ Top administration 9	_____ Method of determining assignments 20
_____ Immediate supervisor 10	_____ Recognition from supervisors 21
_____ Disciplinary system 11	

15. Below are some questions about the future of your job as a police officer. Use the following code:

1 = Very uncertain	4 = Slightly certain
2 = Moderately uncertain	5 = Moderately certain
3 = Slightly uncertain	6 = Very certain

How certain are you about:

_____ What your future career picture looks like

_____ The opportunities for promotion and advancement which will exist in the next few years

_____ Whether your job skills will be of use and value five years from now

_____ What your responsibilities will be six months from now

-8-

24 1 1 1

16. Now think about your present job as a police officer. Use the following code to describe your job:

1 = Rarely	4 = Fairly often
2 = Occasionally	5 = Very often
3 = Sometimes	

How often do you feel that you:

- _____ Are able to use your skills from your previous experience and training
- 7 _____ Are certain about what others expect of you on the job
- _____ Are certain about what your job responsibilities are
- _____ Can predict what others will expect of you on your job in the future
- 9 _____ Are able to use your skills and knowledge
- _____ Are given a chance to do the things you do best
- _____ Get conflicting orders from superiors
- _____ See the results of your work
- _____ Have feelings of pressure from having to please too many bosses
- 15 _____ Have superiors giving you things to do which conflict with other things you have to do
- _____ Experience a sharp increase in work load
- _____ Notice a marked increase in amount of concentration required on your job
- _____ Have a marked increase in how fast you have to think
- _____ Have too little authority to carry out the responsibilities assigned to you
- 20 _____ Know what opportunities for advancement or promotion exist for you
- _____ Have too heavy a work load
- _____ Are able to satisfy the conflicting demands of various people over you
- _____ Are fully qualified to handle your job
- 25 _____ Don't know how your supervisor evaluates your performance
- _____ Have the information necessary to do your job
- _____ Have too much influence over the lives of other people
- _____ Are able to influence the decisions of your immediate supervisor which affect you
- _____ Have so much work that you can't do as good a job as you would like
- 30 _____ Have to do things on the job that are against your better judgment
- _____ Repeat the same activities over and over
- _____ Have a chance to develop new talents
- _____ Remain seated
- _____ Have the opportunity to be creative
- _____ Do different things each day
- 35 _____ Work in the same location
- _____ Know how well you did at the end of the day

-9-

17. On the next items, use this code:
- 1 = Very little
 - 2 = Little
 - 3 = A moderate amount
 - 4 = Much
 - 5 = Very much

In your job as a police officer, how much:

- _____ Responsibility do you have for the morale of other officers
- 31 _____ Do you participate with others in determining the way things are done on your job
- _____ Freedom do you have in setting your own work hours and days off
- 40 _____ Time do you have to do all your work
- _____ Responsibility do you have for the well-being of other officers
- _____ Do you decide with others what part of a task you will do
- _____ Free time do you have between heavy work load periods
- _____ Do you participate with others in making decisions that affect you
- 55 _____ Time do you have to think and contemplate

18. In answering each of the following questions, use this code:

- 1 = Very much less than I ought to get
- 2 = Somewhat less than I ought to get
- 3 = Slightly less than I ought to get
- 4 = Slightly more than I ought to get
- 5 = Somewhat more than I ought to get
- 6 = Very much more than I ought to get

- _____ Compared to other people where you work who do a job similar to yours, how fair is your pay?
- 77 _____ Compared to other people where you work who do a job different from yours, how fair is your pay?
- _____ Compared to other people who do not work where you work but who have skills similar to yours, how fair is your pay?
- 59 _____ Compared to other people where you work who do a job different from yours but who have an educational background similar to yours, how fair is your pay?

19. Below are some phrases which indicate how you might see yourself in your work. For example, if you think that you are very "successful" in your work, put a circle around the number right next to the word "successful." If you think that you are not at all successful in your work, circle the number next to the words "not successful." If you think you are somewhere in between, circle the appropriate number.

Successful	1	2	3	4	5	6	7	Not successful
Sad at work	1	2	3	4	5	6	7	Happy at work
Not important at work	1	2	3	4	5	6	7	Important at work
Doing my best	1	2	3	4	5	6	7	Not doing my best

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20. The following questions concern your relationships with other people.
Use this code:

1 = Rarely	4 = Fairly often
2 = Occasionally	5 = Very often
3 = Sometimes	

- a. How often do the following people go out of their way to make your job easier for you?

_____ Your immediate supervisor	_____ Other people at work
_____ Your spouse, or if not married, your closest friend of the opposite sex	_____ Other relatives
	_____ Close friends

- b. How often can you have meaningful talks with the following people about your personal problems?

_____ Your immediate supervisor	_____ Other people at work
_____ Your spouse, or if not married, your closest friend of the opposite sex	_____ Other relatives
	_____ Close friends

21. Please think now about the type of work you do. Use this code:

1 = Very unlikely	4 = Slightly likely
2 = Moderately unlikely	5 = Moderately likely
3 = Slightly unlikely	6 = Very likely

_____ Knowing what you know now, how likely is it that you would again take a job as a police officer?

_____ If a friend of yours expressed an interest in becoming a police officer, how likely is it that you would advise against it?

22. Please indicate the degree to which you agree or disagree with the following statements. Use this code:

1 = Strongly disagree	4 = Slightly agree
2 = Moderately disagree	5 = Moderately agree
3 = Slightly disagree	6 = Strongly agree

_____ My work is interesting to do

_____ I often have to "bend" department policies and procedures in order to get my job done

_____ My family takes pride in the work I do

_____ There's pretty good sharing of information among the officers on all three shifts

_____ I like the amount of work I'm expected to do

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1 = Strongly disagree	4 = Slightly agree
2 = Moderately disagree	5 = Moderately agree
3 = Slightly disagree	6 = Strongly agree

_____ To be married to a police officer is often difficult
 15 _____ Most of the time there is not much tension between me and my children
 _____ I feel bored with the work I have to do
 _____ The officers who work the same shift with me often get a chance to discuss
 15 _____ common problems
 _____ Department policies are too strict to let me do my job properly
 _____ I am satisfied with the pace of my work
 _____ My family is often worried that something might happen to me while I'm at work
 _____ My children and I don't get along very well
 _____ The work on my job is dull
 15 _____ The department's job promotion policies are basically good
 _____ I am happy about my current work load
 _____ Other people give my children a hard time because I am a police officer
 _____ Some of the best qualified people can't get promoted under the current system
 _____ Many of the department's regulations are unrealistic
 15 _____ Families of police officers are expected by the community to behave better
 _____ than other families
 _____ Overall, my job has a negative effect on my home life
 _____ This department is a good one to work for
 _____ I don't receive enough praise for the work I do
 30 _____ My family is no more concerned about my safety than they would be if I
 _____ were not a police officer
 _____ My department is too much like a military organization
 _____ Nobody seems to notice when I do my job well
 _____ Most citizens have a great deal of respect for the police
 _____ My job requires me to do too much paperwork
 _____ I feel I am getting ahead in the department
 35 _____ My progress toward promotion is satisfactory
 _____ Citizens usually report the crimes they observe
 _____ My department does a poor job in maintaining communications equipment
 _____ Many citizens believe that investigations of police misconduct are usually
 _____ biased in favor of police
 40 _____ The public is generally eager to cooperate with the police
 _____ Police vehicles are kept in good mechanical condition
 _____ My department does a good job in providing the equipment I need
 _____ The relationship between citizens and police in this city is a good one
 _____ Many citizens believe that police officers are people who like power and
 _____ tend to abuse it

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- | | |
|-------------------------|----------------------|
| 1 = Strongly disagree | 4 = Slightly agree |
| 2 = Moderately disagree | 5 = Moderately agree |
| 3 = Slightly disagree | 6 = Strongly agree |

- ☐ I sometimes try to get even, rather than forgive and forget
☐ I thrive on challenging situations
☐ In comparison to most people I know, I'm very involved in my work
☐ There have been occasions when I felt like smashing things
☐ In general, I approach my work more seriously than most people I know
☐ I sometimes get resentful when I do not get my way
☐ The more challenges I have, the better
☐ I have to spend too many hours in court
☐ The courts are often too lenient with accused offenders
☐ Court cases are usually scheduled at convenient times for me
☐ I don't get enough compensation for my court appearance
☐ I usually don't have to wait very long in court for a case to be called
☐ I am sometimes irritated by people who ask favors of me
☐ Most lawyers try to make officers look foolish
☐ Bail is usually set too high
☐ I never hesitate to go out of my way to help someone in trouble
☐ Most judges treat officers with respect
☐ Juries are often prejudiced against police officers
☐ I have never deliberately said something that hurt someone's feelings
☐ Plea-bargaining should be eliminated
☐ There is a big difference between whether a person is really guilty and what the court decides
☐ I am always courteous, even to people who are disagreeable
☐ My immediate supervisor keeps me well informed
☐ The officers I work with don't get much chance to talk with each other
☐ My immediate supervisor is willing to listen to suggestions
☐ I don't feel there is enough communication among the officers on different shifts
☐ Officers in this department are quickly informed about policy changes
☐ No matter who I am talking to, I am always a good listener
☐ My immediate supervisor will back me up when I need it
☐ Department policies are communicated clearly to all members of the department
☐ I don't feel totally comfortable talking to my immediate supervisor

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23. In the past year, have you had any vehicular accidents while on police duty?

_____ 1. Yes _____ 2. No _____

If Yes, a. How many accidents have you had on-duty? _____ Accidents

b. In how many accidents were you found to be at fault by the department _____ Accidents

c. How many accidents involved emergency situations or high speed chases? _____ Accidents

24. In the past year, have you had any vehicular accidents while off-duty?

_____ 1. Yes _____ 2. No _____

If Yes, a. How many accidents have you had off duty? _____ Accidents

b. In how many accidents were you found to be legally at fault? _____ Accidents

25. The following questions concern your appearances in court as a police officer.

a. On the average, how many regular duty hours per week do you spend in court?

_____ Hours per week

b. On the average, how many hours per week do you spend in court during which you are not normally on duty?

_____ Hours per week

26. What kind of effect do your work hours have on each of the following aspects of your life? Use this code:

1 = Very negative 4 = Slightly positive
2 = Moderately negative 5 = Moderately positive
3 = Slightly negative 6 = Very positive

_____ Recreation	_____ Eating habits	_____ Friendships with other police officers
_____ Family life	_____ Ability to stay alert	_____ Friendships with persons who aren't police officers
_____ Sleep	_____ Social life	_____ Ability to deal with household chores
_____ Holidays	_____ General energy level	_____ Ability to perform personal errands
_____ Digestion	_____ Ability to go to school	
_____ Sex life	_____ Ability to hold a second job	

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27. What kind of effect do the days of the week that you normally work have on the following aspects of your life? Use this code:

1 = Very negative	4 = Slightly positive
2 = Moderately negative	5 = Moderately positive
3 = Slightly negative	6 = Very positive

_____ Sleep	_____ Ability to stay alert	_____ Friendships with other
39 _____ Sex life	45 _____ General energy level	51 _____ police officers
_____ Digestion	_____ Recreation	_____ Friendships with
_____ Holidays	_____ Ability to go to school	_____ persons who aren't
_____ Social life	_____ Eating habits	_____ police officers
_____ Family life	_____ Ability to hold a se-	_____ Ability to deal with
_____	56 _____ cond job	_____ household chores
		_____ Ability to perform
		61 _____ personal errands

28. The following questions concern your health.

- a. In an average week, how many hours do you spend in physical conditioning (jogging, weight lifting, exercises, etc.)?

_____ Hours per week

- b. In an average week, how many hours do you spend actively engaged in sports activities (playing softball, tennis, golf, bowling, etc.)?

_____ Hours per week

29. How much of the time do you have the following feelings while you are at work? Use this code:

0 = Never	3 = A good part of the time
1 = A little of the time	4 = Most of the time
2 = Some of the time	5 = All of the time

I feel:

_____ Nervous	_____ Good	_____ Blue
65 _____ Sad	64 _____ Depressed	68 _____ Aggravated
_____ Jittery	_____ Angry	_____ Cheerful
_____ Calm	_____ Fidgety	_____ Irritated or annoyed
_____ Unhappy	67 _____	_____
63 _____		

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30. Think now about your health in general.

a. During the past six months would you say your health has been (CHECK ONE):

- | | |
|--|---|
| <input type="checkbox"/> 1. Very bad | <input type="checkbox"/> 4. Slightly good |
| <input type="checkbox"/> 2. Moderately bad | <input type="checkbox"/> 5. Moderately good |
| <input type="checkbox"/> 3. Slightly bad | <input type="checkbox"/> 6. Very good |

b. How does your health now compare with your health when you became a police officer? (CHECK ONE)

- | | |
|--|---|
| <input type="checkbox"/> 1. Very much worse | <input type="checkbox"/> 5. Slightly better |
| <input type="checkbox"/> 2. Moderately worse | <input type="checkbox"/> 6. Moderately better |
| <input type="checkbox"/> 3. Slightly worse | <input type="checkbox"/> 7. Very much better |
| <input type="checkbox"/> 4. The same | |

31. During the past month how often have you used each of the following?

0 = Never
1 = Once

2 = Twice
3 = Three or more times

- | | |
|---|---|
| <input type="checkbox"/> Antacids | <input type="checkbox"/> Medication to give you pep |
| <input type="checkbox"/> Laxatives | <input type="checkbox"/> Cough or cold medicine |
| <input type="checkbox"/> Tranquilizers | <input type="checkbox"/> Sleeping pills |
| <input type="checkbox"/> Aspirin or headache medicine | <input type="checkbox"/> Other medicine |

32. On an average day, how many of each of the following do you usually drink:

- | | |
|--------------------|----------------------------------|
| a. Bottles of beer | <input type="checkbox"/> Bottles |
| b. Glasses of wine | <input type="checkbox"/> Glasses |
| c. Shots of liquor | <input type="checkbox"/> Shots |
| d. Cups of coffee | <input type="checkbox"/> Cups |

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33. On an average day, how many of each of the following do you smoke?

a. Cigarettes	Cigarettes
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	19
20	20
21	21
22	22
23	23
24	24
25	25
26	26
27	27
28	28
29	29
30	30
31	31
32	32
33	33
34	34
35	35
36	36
37	37
38	38
39	39
40	40
41	41
42	42
43	43
44	44
45	45
46	46
47	47
48	48
49	49
50	50
51	51
52	52
53	53
54	54
55	55
56	56
57	57
58	58
59	59
60	60
61	61
62	62
63	63
64	64
65	65
66	66
67	67
68	68
69	69
70	70
71	71
72	72
73	73
74	74
75	75
76	76
77	77
78	78
79	79
80	80
81	81
82	82
83	83
84	84
85	85
86	86
87	87
88	88
89	89
90	90
91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

25

b. Cigars	Cigars
-----------	--------

11

c. Pipesful of tobacco	Pipesful
------------------------	----------

1

34. Of the five people on the department you work with most often, how many have serious problems with the following: (IN THE SPACE NEXT TO EACH PROBLEM, PLEASE WRITE A NUMBER FROM 0 TO 5 TO INDICATE HOW MANY OF THOSE PEOPLE HAVE A SERIOUS PROBLEM)

Alcohol

Finances

35

Marriage

Drugs

Children

Neighbors

Health

35. How many officers on this department have you known who have attempted or successfully committed suicide?

Officers

24

36. How many officers on this department have you know who have had one or more heart attacks?

Officers

—

- a. If you have known officers who have had heart attacks, how many of these officers had attacks during regular, work hours?

Officers

—

37. When you joined the department, what was your marital status: (CHECK ONE)

1. Never married

5. Separated

2. Married, never divorced or widowed

6. Divorced

3. Remarried after divorce

7. Widowed

4. Remarried after being widowed

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38. a. Has your marital status changed since joining the department? (CHECK ONE)

1. Marital status has not changed (have not been married, separated divorced, or widowed since joining the department)
2. Have been married for the first time
3. Have been married after a divorce
4. Have been married after being widowed
5. Have separated (but not divorced)
6. Have divorced
7. Have been widowed

b. If you have ever been divorced, are you now paying:

- | | | |
|----------------------|------------------------|----------------------|
| 1. Alimony | 2. Property Settlement | 3. Child support |
| <u> </u> 1. Yes | <u> </u> 1. Yes | <u> </u> 1. Yes |
| <u> </u> 2. No | <u> </u> 2. No | <u> </u> 2. No |

39 a. If you are now married, does your spouse currently hold a job? (CHECK ONE)

1. No
2. Yes, part time
3. Yes, full time

b. If Yes, how important is your spouse's income for the maintenance of your household? (CHECK ONE)

- | | |
|---|---|
| <u> </u> 1. Very unimportant | <u> </u> 4. Slightly important |
| <u> </u> 2. Moderately unimportant | <u> </u> 5. Moderately important |
| <u> </u> 3. Slightly unimportant | <u> </u> 6. Very important <u> </u> |

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40. Before you joined the department, what was the highest level of formal education you had completed? That is, when you became a police officer, was your education: (CHECK ONE)

_____ (01) Eighth grade or less
 _____ (02) Some high school, but not a graduate
 _____ (03) Graduate from high school or General Education Diploma (G.E.D.)
 _____ (04) Some technical school, but not a graduate
 _____ (05) Graduate from technical school
 _____ (06) Some college courses, but did not graduate
 _____ (07) Graduate from junior college
 _____ (08) Graduate from college
 _____ (09) Some graduate courses in college
 _____ (10) Graduate degree

41. Since joining the department, how much additional formal education have you had? That is, after you became a police officer, have you: (CHECK ONE)

_____ (01) Had no additional formal education
 _____ (02) Taken some high school courses, but did not graduate
 _____ (03) Graduated from high school or General Education Diploma (G.E.D.)
 _____ (04) Taken some technical school courses, but have not graduated
 _____ (05) Taken some additional college courses, but have not graduated
 _____ (06) Graduated from technical school
 _____ (07) Graduated from junior college
 _____ (08) Graduated from college
 _____ (09) Taken some graduate college courses, but have not received a graduate degree
 _____ (10) Obtained a graduate degree

42. How important do you think your department considers it that an officer go to school in order to be promoted?

_____ 1. Very unimportant	_____ 4. Slightly important
_____ 2. Moderately unimportant	_____ 5. Moderately important
_____ 3. Slightly unimportant	_____ 6. Very important

43. How many children do you now support? _____ Children

44. Other than your spouse and children, how many people depend upon you as their primary source of support?

_____ People

This completes the questionnaire. Thank you for your cooperation. If you have any comments about this questionnaire or its contents please write those comments on the back of this page.

APPENDIX E

INSTRUCTIONS FOR COMPLETING QUESTIONNAIRES



THOMAS R. KINION
SHERIFF

QUARTERMASTER
UNDERMATE

U.S. DEPARTMENT OF DEFENSE
OFFICE OF THE INSPECTOR GENERAL
1115 ARMY ROAD, WASHINGTON, D.C. 20304-1115

Instructions for Completing Questionnaires

We are asking you to complete these paper-and-pencil tests so that we can obtain some background information on participants at the beginning of the stress program. This information will help us in the direction of the training, as well as in its evaluation. After the program has run its course, we will compare this data with later information to determine which method of stress conditioning works best.

As you fill out the questionnaires, please follow the instructions on the face of each test, plus the following guidelines:

1. Use a pencil to answer the questions. If you make a mistake or want to change your response, erase completely and indicate the correct answer clearly. These questionnaires will be computer coded by clerical personnel, and it will help them substantially if you are clear.
2. You may ignore any small, handwritten numbers on the test forms. These are directions for computer coding.
3. DO NOT PUT YOUR NAME ON THE TEST FORMS. We are making every effort to protect your identity and privacy. You will be given a three-digit code number. PLEASE PUT THIS CODE NUMBER ON THE TOP OF THE FIRST PAGE OF EVERY TEST.
4. Thank you for your cooperation. We hope you enjoy the testing process as much as possible, and we look forward to working with you in the program.

APPENDIX F
ANALYSIS OF VARIANCE TABLES

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TABLE F.1

Mean, Standard Deviation, and Analysis of Variance of Question 14.1
Job Security

Total Sample	Group			
	A	B	C	D
\bar{X}	- .15	1.36	- .23	.67
s.d.	1.28	1.45	1.92	2.19
N	13	14	13	12

Source	df.	s.s.	m.s.	F	p
Between Groups	3	22.81	7.60	2.54	.0677
Within Groups	48	143.88	2.99		
Total	51	166.69			

TABLE F.2

Mean, Standard Deviation, and Analysis of Variance of Question 14.2,
Fellow Officers

Total Sample	Group			
	A	B	C	D
\bar{X}	- .38	.79	0	-.08
s.d.	.96	1.53	1.21	1.44
N	13	14	12	12

Source	df.	s.s.	m.s.	F	p
Between Groups	3	10.16	3.39	1.98	.1297
Within Groups	47	80.35	1.71		
Total	50	90.51			

TABLE F.3
Mean, Standard Deviation, and Analysis of Variance of Question 14.3
Promotion

Total Sample	Group			
	A	B	C	D
\bar{X}	- .69	- .14	- .85	.5
s.d.	1.44	1.96	9.99	1.76
N	12	14	13	12

Source	df.	s.s.	m.s.	F	p
Between Groups	3	9.63	3.21	.99	.4077
Within Groups	48	156.43	3.26		
Total	51	166.06			

TABLE F.4
Mean, Standard Deviation, and Analysis of Variance of Question 14.4,
Academy Training

Total Sample	Group			
	A	B	C	D
\bar{X}	-1.08	- .21	0	.17
s.d.	1.73	1.72	1.15	.94
N	12	14	13	12

Source	df.	s.s.	m.s.	F	p
Between Groups	3	11.22	3.74	1.81	.1578
Within Groups	48	96.94	2.06		
Total	51	108.16			

TABLE F.5
Mean, Standard Deviation, and Analysis of Variance of Question 14.5
Overtime Pay

Total Sample	Group			
	A	B	C	D
\bar{X}	- 1.00	- .43	- .46	.17
s.d.	2.08	1.79	.88	1.19
N	13	14	13	12

Source	df.	s.s.	m.s.	F	p
Between Groups	3	8.50	2.83	1.15	.3388
Within Groups	48	118.33	2.47		
Total	51	126.83			

TABLE F.6
Mean, Standard Deviation, and Analysis of Variance of Question 14.6,
Excitement

Total Sample	Group			
	A	B	C	D
\bar{X}	- .31	- .43	- .54	.33
s.d.	1.80	.85	1.13	1.23
N	13	14	13	12

Source	df.	s.s.	m.s.	F	p
Between Groups	3	5.65	1.88	1.13	.3465
Within Groups	48	80.10	1.67		
Total	51	85.75			

TABLE F.7

Mean, Standard Deviation, and Analysis of Variance of Question 14.7,
Salary

Total Sample	Group			
	A	B	C	D
\bar{X}	.15	.36	-.23	0
s.d.	.69	1.39	.83	1.35
N	13	14	13	12

Source	df.	s.s.	m.s.	F	p
Between Groups	3	2.48	.83	.67	.5749
Within Groups	48	59.21	1.23		
Total	51	61.69			

TABLE F.8

Mean, Standard Deviation, and Analysis of Variance of Question 14.8,
Equipment Maintenance

Total Sample	Group			
	A	B	C	D
\bar{X}	-.15	0	.56	- 1.67
s.d.	1.41	1.18	1.51	1.90
N	13	14	13	12

Source	df.	s.s.	m.s.	F	p
Between Groups	3	3.33	1.11	.49	.6901
Within Groups	48	108.59	2.26		
Total	51	111.92			

TABLE F.9
Mean, Standard Deviation, and Analysis of Variance of Question 14.9
Top Administration

Total Sample	Group			
	A	B	C	D
\bar{X}	.15	.21	-.92	-.67
s.d.	1.14	1.19	1.71	1.72
N	13	14	13	12

Source	df.	s.s.	m.s.	F	p
Between Groups	3	13.03	4.34	2.05	.1191
Within Groups	48	101.64	2.12		
Total	51	114.67			

TABLE F.10
Mean, Standard Deviation, and Analysis of Variance of Question 14.10,
Immediate Supervisors

Total Sample	Group			
	A	B	C	D
\bar{X}	-.62	.29	-.23	0
s.d.	1.50	2.13	1.30	.85
N	13	14	13	12

Source	df.	s.s.	m.s.	F	p
Between Groups	3	5.82	1.94	.81	.4922
Within Groups	48	114.24	2.38		
Total	51	120.06			

TABLE F.11
Mean, Standard Deviation, and Analysis of Variance of Question 14.11,
Disciplinary System

Total Sample	Group			
	A	B	C	D
\bar{X}	.54	-.21	-.67	0
s.d.	1.05	1.19	1.83	1.71
N	13	14	12	12

Source	df.	s.s.	m.s.	F	p
Between Groups	3	9.43	3.14	1.47	.2237
Within Groups	47	100.25	2.13		
Total	50	109.69			

TABLE F.12
Mean, Standard Deviation, and Analysis of Variance of Question 14.12
Middle Management

Total Sample	Group			
	A	B	C	D
\bar{X}	.15	.14	0	.50
s.d.	1.41	1.46	1.08	1.51
N	13	14	13	12

Source	df.	s.s.	m.s.	F	p
Between Groups	3	3.52	1.17	.62	.6040
Within Groups	48	90.41	1.88		
Total	51	93.92			

TABLE F.13

Mean, Standard Deviation, and Analysis of Variance of Question 14.13,
In-Service Training

Total Sample	Group			
	A	B	C	D
\bar{X}	- .15	.36	- .62	- .50
s.d.	.90	2.02	1.61	1.98
N	13	14	13	12

Source	df.	s.s.	m.s.	F	p
Between Groups	3	7.69	2.56	.90	.4490
Within Groups	48	136.98	2.85		
Total	51	144.67			

TABLE F.14

Mean, Standard Deviation, and Analysis of Variance of Question 14.14,
Amount Overtime

Total Sample	Group			
	A	B	C	D
\bar{X}	- .38	.71	- .54	- .33
s.d.	1.26	2.40	.88	.89
N	13	14	13	12

Source	df.	s.s.	m.s.	F	p
Between Groups	3	2.77	.92	.40	.7554
Within Groups	48	111.90	2.33		
Total	51	114.67			

TABLE F.15

Mean, Standard Deviation, and Analysis of Variance of Question 14.15,
System Determining Work Schedules

Total Sample	Group			
	A	B	C	D
\bar{X}	0	-.21	0	-.08
s.d.	1.00	1.12	1.29	1.16
N	13	14	13	12

Source	df.	s.s.	m.s.	F	p
Between Groups	3	42	.14	.11	.9563
Within Groups	48	63.27	1.32		
Total	51	63.69			

TABLE F.16

Mean, Standard Deviation, and Analysis of Variance of Question 14.16,
Personal Appearance Code

Total Sample	Group			
	A	B	C	D
\bar{X}	-.08	.43	.31	.75
s.d.	.49	1.16	1.38	1.42
N	13	14	13	12

Source	df.	s.s.	m.s.	F	p
Between Groups	3	9.94	3.31	2.43	.0764
Within Groups	48	65.37	1.36		
Total	51	75.31			

TABLE F.17

Mean, Standard Deviation, and Analysis of Variance of Question 14.17,
Method Determining Days Off

Total Sample	Group			
	A	B	C	D
\bar{X}	.38	.29	-.07	.08
s.d.	2.06	1.07	1.61	.79
N	13	14	13	12

Source	df.	s.s.	m.s.	F	p
Between Groups	3	2.28	.76	.35	.7878
Within Groups	48	103.77	2.16		
Total	51	106.06			

TABLE F.18

Mean, Standard Deviation, and Analysis of Variance of Question 14.18,
Performance Evaluation

Total Sample	Group			
	A	B	C	D
\bar{X}	-.25	.14	.17	.80
s.d.	.97	1.66	.72	1.32
N	12	14	12	10

Source	df.	s.s.	m.s.	F	p
Between Groups	3	6.75	2.25	1.47	.2352
Within Groups	44	67.23	1.53		
Total	47	73.98			

TABLE F.19

Mean, Standard Deviation, and Analysis of Variance of Question 14.19,
Freedom to Make Decisions

Total Sample	Group			
	A	B	C	D
\bar{X}	-.54	.21	-.46	.08
s.d.	1.13	1.48	.66	1.44
N	13	14	13	12

Source	df.	s.s.	m.s.	F	p
Between Groups	3	5.71	1.90	1.27	.2943
Within Groups	48	71.74	1.49		
Total	51	77.44			

TABLE F. 20

Mean, Standard Deviation, and Analysis of Variance of Question 14.20,
Method Determining Assignments

Total Sample	Group			
	A	B	C	D
\bar{X}	.08	.21	.46	-.25
s.d.	1.26	1.53	1.27	1.29
N	13	14	13	12

Source	df.	s.s.	m.s.	F	p
Between Groups	3	3.30	1.10	.61	.6131
Within Groups	48	86.76	1.81		
Total	51	90.06			

TABLE F.21
 Mean, Standard Deviation, and Analysis of Variance of Question 14.21,
 Recognition from Supervisors

Total Sample	Group			
	A	B	C	D
\bar{X}	.38	.39	.23	-.42
s.d.	.87	1.20	1.74	1.83
N	13	14	13	12

Source	df.	s.s.	m.s.	F	p
Between Groups	3	4.90	1.63	.77	.5138
Within Groups	48	101.16	2.12		
Total	51	106.06			

TABLE F.22
 Mean, Standard Deviation, and Analysis of Variance of Question 19.1
 Successful/Not Successful

Total Sample	Group			
	A	B	C	D
\bar{X}	-.17	.46	0	0
s.d.	1.03	1.05	.74	.85
N	12	13	12	12

Source	df.	s.s.	m.s.	F	p
Between Groups	3	2.78	.93	1.07	.3711
Within Groups	45	38.90	.86		
Total	48	41.67			

TABLE F.23

Mean, Standard Deviation, and Analysis of Variance of Question 19.2,
Sad at Work/Happy at Work

Total Sample	Group			
	A	B	C	D
\bar{X}	- .36	- .43	- .67	.33
s.d.	2.38	2.03	.72	1.61
N	11	14	12	12

Source	df.	s.s.	m.s.	F	p
Between Groups	3	4.39	1.46	.46	.7144
Within Groups	45	144.31	3.21		
Total	48	148.69			

TABLE F.24

Mean, Standard Deviation, and Analysis of Variance of Question 19.3,
Not Important at Work/Important at Work

Total Sample	Group			
	A	B	C	D
\bar{X}	- .45	- .57	- .50	.92
s.d.	1.86	2.06	1.73	2.68
N	11	14	12	12

Source	df.	s.s.	m.s.	F	p
Between Groups	3	18.62	6.21	1.38	.2604
Within Groups	45	202.07	4.49		
Total	48	220.69			

TABLE F.25

Mean, Standard Deviation, and Analysis of Variance of Question 19.4,
Doing Best/Not Doing Best

Total Sample	Group			
	A	B	C	D
\bar{X}	.18	1.50	.75	-.17
s.d.	.75	2.14	1.82	2.25
N	11	14	12	12

Source	df.	s.s.	m.s.	F	p
Between Groups	3	15.35	5.12	1.47	.2363
Within Groups	45	157.05	3.49		
Total	48	172.41			

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