The differences of individuals with type A and type B behavior patterns and the women's awareness seminar on self-actualization and flexibility

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THE DIFFERENCES OF INDIVIDUALS
WITH TYPE A AND TYPE B BEHAVIOR PATTERNS
AND THE WOMEN'S AWARENESS SEMINAR
ON SELF-ACTUALIZATION AND FLEXIBILITY

A Dissertation
Presented to the
Faculty of the School of Education
College of William and Mary in Virginia

In Partial Fulfillment
Of the Requirements for the Degree
Of Doctor of Education

by
Carolyn A. Glass
May, 1981
We the undersigned do certify that we have read this dissertation and that in our individual opinions it is acceptable in both scope and quality as a dissertation for the degree of Doctor of Education.

Accepted May 1981 by

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The thrust of creative energy is always weakened by repetitive urgency.

Ray H. Rosenman

Out of life's school of war: What does not destroy me, makes me stronger.

Friedrich Nietzsche

True growth is made possible by a belief in miracles.

Carolyn A. Glass
The Differences of Individuals
with Type A and Type B Behavior Patterns
and the Women's Awareness Seminar
on Self-Actualization and Flexibility
Chapter 1

Introduction

Whether he was a witch doctor, shaman, or Hippocrates, the father of medicine, all had a following of patients who sought their advice and treatment on matters of personal and familial illnesses. Traditionally, it has been the medicine man who prescribed treatments for diseases and ailments but throughout the centuries the practice of medicine has become more and more specialized. With the proliferation of knowledge aided by advanced technology, an in depth study of various parts of the body has been made possible but perhaps at the cost of losing sight of the whole human subject to whom these parts belong. This is not only a current problem for Plato said over 2400 years ago "that as you ought not to attempt to cure the eyes without the head, or the head without the body, so neither ought you to attempt to cure the body without the soul; and this is the reason why the cure of many diseases is unknown to the physicians of Hellas, because they are ignorant of the whole, which ought to be studied also; for the part can never be well unless the whole is well" (Plato, p. 3, 1952).

Many of the procedures of modern medicine at present have been unable to cure our major diseases and other areas of knowledge, i.e., psychology, sociology, and education, are investigating contributing factors to illnesses as well. The appearance of wellness clinics, preventive medicine programs, stress management workshops, just to name a few, who incorporate a staff of professionals from various disciplines, points to a manifestation of a changing attitude towards health care in general. The man's media via popular magazine articles, newspapers, and television
from documentaries to soap operas provide health quizzes, self-help
guides, and advertisements for wellness experiences, i.e., a 5 day well-
ess retreat at La Crosse, Wisconsin in Next magazine, March 1980. Even
the institutions of higher learning which have in the past been basically
research oriented or solely involved in training practitioners are shar-
ing their information with the public, i.e., Harvard Medical School's
Health Letter.

This new approach to health care has been termed by such writers as
Kenneth Pelletier as holistic medicine or holistic health. It is an
attempt to consider the whole person in reference to the state of health
or illness the person presently experiences. This is not only limited to
the professional who is to treat the person but is also an attempt to ed-
ucate the person as to the responsibility he/she has for his/her own
health. Making the public aware of how they can influence their own
health also means that many of our educational institutions will have to
train their students in new ways in order to involve the whole person.
Abraham Maslow suggested in 1969 that the humanizing of any content --
math, astronomy, physics -- could be done effectively but would require
a reorientation perhaps beginning in kindergarten (Maslow, 1978).

One of the main issues that the holistic approach to health care is
addressing is the division between the mind and body. Western philosophy
has taught us that the body belongs to the American Medical Association,
the mind to the American Psychological Association, and the spirit to the
church. With all of this neatly packaged, there has been nothing left
for us to understand on a personal level (Brown, 1980). Though there
have been investigations into the relationship between the mind and body,
most of them have been confined to medicine and to the training of the professional with little or no attempt made to educate the public. Recently, however, community-wide health education projects aimed at reducing the incidence of heart disease have been conducted in California (Meyer, Nash, McAlister, Maccohy, and Farquhar, 1980). Models such as these suggest perhaps a change in our approaches to combating diseases.

Historically, the awareness that behavior and disease are interrelated is as old as the practice of medicine but the systematic analysis and formal interest in behavioral medicine is fairly recent (Pomerleau, 1979). There have been several related fields which predate the recent behavioral medicine interest that have sought to understand the mind/body dichotomy.

The field of psychosomatic medicine is concerned with the relationship between psychosocial and physiological variables in disease. It is not so much associated with a specific methodology but rather a broad group of interests. It has recently been described as a "biopsychosocial" model that encompasses all health and disease (Weiner, 1977). Its conceptual origins are in the psychoanalytical theories of Freud and therapy, in the past, has sought hypothetical underlying causes during psychological treatment (Pomerleau, 1979).

Medical psychology is another field which uses psychological principles and techniques in diagnosis and assessment of physical illness. Various activities are involved in understanding illness in its psychological and social contexts by using psychometric assessment, personality inventories, and projective tests (Olbrisch, 1977).

Behavior therapy and behavior modification emphasize a more specific
type of intervention as well as a research methodology and a strategy for assessment. Behavior modification uses principles derived from the experimental analysis of behavior formulated by B. F. Skinner and the social learning theory of Bandura. These procedures are used to modify maladaptive behaviors or inculcate more adaptive behaviors and are typically used in rehabilitative or educational institutions. Behavior therapy consists of activities that involve a contractual agreement between patient and therapist in order to modify a problem behavior (e.g., techniques of Wolpe). The methodology is more congruent with the ideas of behavioral medicine even though it traditionally has been more concerned with neurosis and affective disorders rather than disease (Pomerleau and Brady, 1979).

Many of the major diseases have been treated or studied by professionals who have been trained in disciplines, like the above, which take into account the influence of mind on the body and the body on the mind. But still we have not seemed to be able to reduce the rising incidence of such illnesses as heart disease or cancer. Perhaps what we have failed to do is enlist the aid of the patient in helping with his own health. After all the Western culture has taught us that we have little control over our health and our illnesses are treated externally by the "helper" who we turn to in times of crises.

Coronary Heart Disease (CHD) which continues to be the leading cause of death in the U. S. is one disease that has captured the interests of researchers in many disciplines. Ray Rosenman and Meyer Friedman, both cardiologists, have been the leaders in investigating not only the physiological aspects of the coronary prone individual, but have identified
Rosenman and other researchers refer to the psychological factors as the Type A-B behavior pattern. This is seen as an overt behavior pattern but not as a theoretical base as to the dynamics of the personalities who display these behaviors. Many researchers have attempted to modify Type A behavior in terms of various psychological theories, i.e., Rational Emotive Therapy and other forms of behavior modification. These will be described and evaluated in Chapter 2, Review of the Literature.

Rosenman suggested that before a lasting change in Type A behavior could occur, a philosophical change would need to take place. Both RET and behavior modification seem to be creating an immediate change in behavior but research has not shown this change to be long lasting. He further proposed that the various concepts of humanistic psychology may be effective in a program for creating a philosophical change but these programs should not be rigid or stereotyped. For a program to be successful it must take into account the social, economic, and intellectual background of the person. While some find behavior self-management sufficient, others may require more inspiring guidance. However, it does seem likely that the principles, ideals, and concepts from all of these sources may be necessary in order to effect philosophical re-orientation (Rosenman and Friedman, 1977).

With the recognition of the Type A-B behavior pattern as an important factor in the etiology of heart disease many types of intervention techniques have appeared recently but few are trying to effect a philosophical change. A firm psychological basis has not been established as to the dynamics of the personality types studied. Rosenman believes that the
Type A individual may need to be re-educated in order to change his ways and save his life.

This study aims to present an educational model that attempts to provide a change in philosophy concerning taking responsibility for one's own life which includes health care.

**Statement of the Problem**

The existence of Type A-B behavior pattern was discovered through observations made initially by Rosenman and Friedman of their cardiac patients. They have not claimed a theoretical base for the causation of the personality types, but consider the behavior to be a covert behavior style that is activated in certain situations. The presence or absence of these behaviors led to the classification of individuals on a continuum between Type A and B.

The present emphasis on wellness or holistic health has charged the public with taking more responsibility for their own health and health care. But with so much knowledge available via the mass media, it is often confusing and perplexing for the general public to know where or how to begin to acquire the knowledge needed for personal health care. Along with the added knowledge is the problem of how to evaluate the new information then how to change a lifestyle that may threaten your health.

Heart disease has been identified as the number one killer of Americans and as such is the subject of much research from many disciplines. With the discovery of a personality component connected with the disease, psychologists have begun to investigate various theories and therapeutic techniques that may explain this behavior and decrease its frequency.

This study looks at the Type A-B behavior pattern within the frame-
work of humanistic psychology. In particular, persons placing along the continuum between Type A and B are evaluated in terms of Abraham Maslow's self-actualizing person and their degree of flexibility or rigidity in facing life's problems.

Rosenman (1979) has suggested that humanistic psychology may provide a method for understanding and modifying Type A behavior. In what ways this type of approach can be helpful is yet to be identified. It was felt that health information, both psychological and physical, could best be provided in an atmosphere conducive to discussion and self-examination such as is emphasized by the therapeutic techniques of humanistic psychology. It has been stated that psychological education in general is concerned with the full development of the human potential by focusing on decision making, self-concept, self awareness, values, and interpersonal skills leading to self-actualization (Ivey and Alschuler, 1973; Shostrum, 1976).

The purpose of this study is to first, assess the difference between Type A's and B's on self-actualization and flexibility. And second, to determine if and how an intervention designed to increase self-actualization will effect the subjects.

**Need for the Study**

Most of the research on Type A-B behavior pattern has been predominantly conducted with male subjects. Now that more women are entering the work force, it has been predicted that the coronary heart disease rate will increase to the level experienced by men (Arehart-Treichel, 1980). The Framingham study found, however, that many housewives also were found to exhibit Type A behavior (Haynes, et. al., 1979). Since heart disease does happen to both the male and female population, it is
imperative that we study both populations in order to understand the processes involved more fully.

For Type A behavior to be observed it must be provoked by some occurrence in the environment. In his survey of the research on coronary prone behavior, Glass (1977) identified the need for coordinating psychological variables with the conditions that increase proneness for coronary artery disease (CAD) and coronary heart disease (CHD). The two variables that appear to be promising are psychological stress and Type A behavior. A part of the process to expand self-awareness was the dissemination of information regarding the dangers of stress and the Type A behavior pattern.

This intervention model provided the participants with the knowledge of whether they may be at greater risk of having CHD or CAD by way of psychological measures. They also were given the opportunity to investigate other diseases which seem to relate to certain lifestyles. They were encouraged to become more self-aware in all areas of their lives by structured group activities and peer support groups. Loeffler and Fiedler (1979) found that the systematic/developmental intervention designed by counselors, facilitates the personal growth of women on increased self-esteem and competence through self-awareness, skills development, cognitive changes, and overt behavioral changes.

**Theoretical Rationale**

The theoretical base for the intervention is founded upon the principles of self-actualization. The self-actualizing person is seen as one who has developed his/her personality from the deficiency problems of youth, and from the neurotic "unreal" problems, so that he/she is better able to
face and tackle the "real" problems of life. He/she is seen as more autonomous, creative, has an accurate perception of reality, spontaneous, and more problem-centered. He/she shows a continued appreciation for nature and the basic elements of life, needs more privacy, enjoys more long-lasting interpersonal relationships, is able to perceive the fusion of polarities, and has more peak experiences (Maslow, 1968, 1970).

The neurotic person is caught up in "shoulds" and "musts" and has these as driving forces in his/her life. Whether it is the form of self-effacing behaviors or resignation, the person is not reaching for his/her full potential but repeats unendingly a cycle of ineffectual behaviors. These behaviors ultimately lead to a miserable existence for the person and those who interact with him/her (Horney, 1950). Unable to break the cycle, the person continues to repeat the inappropriate behavior throughout his/her life.

The Type A behavior pattern demonstrates more of the characteristics of the neurotic in his/her lack of ability to get the most from his/her environment without detrimental consequences to his/her health and his/her social interactions. A dearth of information was available about individuals with Type A behavior pattern in the past due to their avoidance of psychological helpers. As in the other areas of their lives, they felt they had to exhibit absolute confidence in the integrity of their emotional faculties (Friedman and Rosenman, 1974). This is congruent with their attempts at being seen as perfect in all aspects by others.

Humanistic psychology incorporates many concepts from the European existential philosophy that deals with bridging the gap between human aspirations and limitations, actuality and potentiality (Maslow, 1968).
The Type A person reacts as if he/she had no limitations and sees his/her potentiality to be limited to a narrow range of behaviors dictated by the culture or significant external forces. His/her self-esteem is forever in question depending upon others evaluation of his/her performance.

The Type A person acts as if everything and everyone "should" behave in a certain manner and continue to be that way indefinitely. When events do not happen the way they "should", he/she reacts with aggression or ultimately with a sense of total helplessness. He/she must be in control at all times for the esteem of self and others. It is as if he/she has been frozen in time, influenced by the past, and fearful of the future. Whereas, for Maslow, self-actualization is meaningless without a currently active future. He states, "we must realize that only the future is in principle unknown and unknowable, which means that all habits, defenses and coping mechanisms are doubtful and ambiguous since they are based on past experience. Only the flexible creative person can really manage the future, only the one who can face novelty with confidence and without fear. I am convinced that much of what we now call psychology is the study of the tricks we use to avoid the anxiety of absolute novelty by making believe the future will be like the past" (1968, p. 16). The flexibility needed to face changing events appears to be underdeveloped in the personality of the Type A person.

Type B's have been described as free of hostility and are more oriented towards intrinsic goals. He/she contributes to more of a creative output and is not driven by competitive urges in order to win the approval of others. He/she understands his/her strengths and weaknesses and selects life goals which usually transcend social or material success
This is generally a description of the self-actualizer or one who is open to growth in that direction.

Though the Type A-B classification does not have a theoretical base, this study examines those personality variables that relate to the self-actualizing person. The process of becoming more self-actualizing implies that one become more self-aware in all aspects of his/her life which includes health consciousness. By being instructed in ways to change a certain dimension of one's life it is hoped that the process has generalizability to other areas as well.

**Sample**

The women who participated in the experimental groups were students at Thomas Nelson Community College (TNCC) who were enrolled in a three hour credit course classified as General Studies 199-Women's Awareness Seminar. The control group was drawn from women enrolled in a one credit course classified as General 100-Orientation. Both experimental and control groups consisted of women who had self-selected to take the courses. The similarity of the populations was due to the fact that both courses were graded, usually taken by new students, and self-selected according to interest and time preferences.

Thomas Nelson Community College, which is located in Hampton, Virginia, has an enrollment of approximately 6000 students. The college aims to provide an educational atmosphere which is cognizant of the needs of the community. The women's awareness seminar was developed as an outgrowth of the interest expressed by women and the community college's dedication to making courses concerning relevant issues available to the public.
Data Gathering Procedures

Subjects in the experimental groups took part in a ten week women's awareness seminar. Twelve women were in experimental group I, 18 were in experimental group II, and 37 were in the control group. The experimental groups were not randomly selected but self-selected according to their time preferences due to scheduling. Experimental group I met in the evening once a week for three hours and experimental group II met twice a week during the morning for one hour and a half. The experimenter met with the orientation class at the beginning of the ten weeks and explained her need for women volunteers. Those women interested met with the experimenter where a brief description of the study was given. Those agreeable to participation, remained for pretesting.

The students in the experimental groups received a brief description of the study and how the women's awareness seminar would be conducted during the first class session. Any students who wished to drop the class were given the opportunity to leave.

All students were told that this was a study to see how this quarter affects their attitudes on handling stress and personal growth. The instruments were presented at the beginning and the end of the quarter with the exception of the Jenkins Activity Survey for Health Prediction which was given only once to identify Type A and B individuals.

Definition of Terms

The following terms are defined operationally in order to facilitate
consistency in interpretation.

Self-Actualization

Self-actualization is a concept developed by Abraham Maslow to describe a person who is living a more enriched and fully functioning life than the average person. Such a person is seen as utilizing and developing his/her unique potentials, free of the emotional turmoil and inhibitions of those less self-actualizing. Operationally, self-actualization is what the Personal Orientation Inventory measures (Shostrum, 1974).

Rigidity

Rigidity refers to the degree to which an individual approaches problems in a deliberate, cautious, worrying, industrious, guarded, methodical, and rigid manner. The person may also be overly deferential to custom, tradition, and authority. Operationally, rigidity is indicated by a low score on the flexibility scale of the California Psychological Inventory (Gough, 1975).

Flexibility

Flexibility refers to the degree to which an individual is insightful, adventurous, confident, humorous, rebellious, assertive, idealistic, and egoistic. The person may be highly concerned with personal pleasures and diversions. Operationally, flexibility is indicated by a high score on the California Psychological Inventory (Gough, 1975).

Type A Behavior Pattern

Type A behavior pattern refers to an overt behavior pattern found to be associated with coronary heart disease. Individuals with Type A behavior, under provoking conditions, usually exhibit the following traits: a sense of time urgency and impatience, free-floating hostility
(which may be suppressed), competitiveness, a sense of helplessness when unable to control events, and the inability to relax without guilt (Friedman and Rosenman, 1974). Operationally, Type A behavior is indicated by relevant scores on the Jenkins Activity Survey for Health Prediction.

**Type B Behavior Pattern**

Type B behavior pattern refers to an overt behavior pattern which helps to protect individuals from coronary heart disease. Type B persons are free of most of the traits exhibited by Type A individuals when presented with the same or similar provoking circumstances (Friedman and Rosenman, 1974). Operationally, Type B behavior is indicated by relevant scores on the Jenkins Activity Survey for Health Prediction.

**Arteriosclerosis**

Arteriosclerosis is the accumulation of plaque in the arteries that causes the vessels to lose their elasticity. Commonly referred to as hardening of the arteries (Rosenman and Friedman, 1974).

**Atherosclerosis**

Atherosclerosis is a form of arteriosclerosis. "Technically, it is defined as an arterial deposit that initially contains chiefly cholesterol and fat but later also contains calcium and is subject to internal ulceration. If the atherosclerotic process is well localized, it is frequently referred to as an atherosclerotic plaque"(Friedman and Rosenman, 1974, p. 302).

**Limitations**

One of the major limitations of the study is the precise classification of individuals as either Type A or B. MacDougall and Dembroski (1979) found that the Jenkins Activity Survey (JAS) for Health Prediction
correlated relatively weakly with the structured interview, an overt interview method developed by Rosenman and Friedman, but its validity increased when used with several scales from the Adjective Check List (ACL). A stronger classification could have been determined by using the structured interview and having interrater agreement on the designation of A and B types and variations along the continuum.

Because the population was self-selected, it is not clear that these groups represent the typical community college female student. Thus, generalizability to other community college females or females in general is questionable. Perhaps the findings of this study can be generalized to other women at TNCC taking the Women's Awareness Seminar and orientation when age is included as a control factor.

General Research Hypotheses

Hypothesis 1

Before treatment, individuals in experimental and control groups with Type B behavior will be significantly greater self-actualizers and more flexible than Type A individuals on pretest measures of the POI and CPI.

Hypothesis 2

After intervention, individuals in the experimental group will show a greater increase in self-actualization and flexibility than individuals in the control group by comparison of pre- and posttest measures of the POI and CPI.

Hypothesis 3

After intervention, Type A's and Type B's in the experimental group will show a significant increase in self-actualization and flexibility
as compared to Type A's and B's in the control group. This change will be measured by comparing pre- and posttest scores of the POI and CPI.

Plan of Presentation

This study will be presented in a five chapter format. Chapter one includes the introduction, statement of the problem, need for the study, theoretical rationale, and hypotheses. Chapter two contains a review of methodology. Chapter four includes an analysis of the results. Chapter five concludes the study by giving the results, establishing conclusions, and presenting recommendations.
Chapter 2

Review of the Literature

This chapter is divided into five sections to examine the research which contributes to an understanding of the rationale for the experiment performed: (a) the history of coronary heart disease and Type A-B behavior pattern, (b) Type A testing, (c) intervention models and methods, (d) a model for increasing self-actualization, and (e) group research.

The History of Coronary Heart Disease and Type A-B Behavior Pattern

Coronary Heart Disease (CHD) and Coronary Artery Disease (CAD) continue to be the leading cause of death in the United States and other industrialized societies. In most cases, CHD results from a progressive narrowing of the coronary arteries due to the atherosclerotic process and other complications such as thrombosis, myocardial infarction, and arrhythmic sudden death (Rosenman, Friedman, and Chesney, 1979). This narrowing or occluding of the arteries probably begins for many people early in their lives but nobody is sure about what causes this to take place. It is likely, however, that over 100 million Americans already have some degree of CAD (Friedman and Rosenman, 1974).

Despite the fact that vascular disease was considered a great killer, it became common to consider a stroke or a heart attack, not as a disease, but a demonstration of the aging process. Prior to World War II, there were occasional reports of young men under forty having heart attacks but those were usually related to syphilis or inflammation of the arteries. Then the ubiquitous nature of heart disease began to manifest itself in that cases were reported of men under twenty years of age (Lamb, 1975).
During World War II the opportunity arose to observe heart attacks in young men in the armed services. Yater and others from the Army Institute of pathology, studied 866 cases of young men between the ages of 18 and 39 who had heart attacks. Of these, 450 had been reported to be in good health prior to their death. Heart examinations of these men revealed typical changes in the major arteries of the heart muscle. Sixty-four of these men were between the ages of 18 and 24 and 200 were 29 years or less. Even though it was still apparent that heart disease was less common among men below the age of 35, these studies did much to demonstrate that the heart attack is indeed a function of a diseased heart (arteries, valves, etc.) and not just a manifestation of aging (Lamb, 1975).

Autopsies and other studies made during World War II and the Korean War confirmed that coronary atherosclerosis (fatty deposits in the arteries) began at an early age. How it occurred was still unknown.

Studies were made during the Korean War of young soldiers killed in combat at an average age of twenty-two. When arteries were dissected, fatty deposits were found in over seventy per cent to the degree that would cause blockage. These were not the arteries of sedentary middle-aged men, but young, healthy individuals supposedly in excellent health. Researchers became aware from the results of studies like these that the process involved in heart disease may be a silent one with all external evidence of good health (Lamb, 1975).

Epidemiologists trace the beginnings of the spreading heart disease problem to the 1920's in the United States (Anderson, 1973). Since then, mortality rates have drastically increased. For example, between 1940
and 1950, the rate for white males, ages 35 to 64, increased by 23% (Borhani, 1966). "Cardiovascular diseases (including stroke) now accounts for approximately 55 per cent of all deaths in the United States, ..." (Lynch, 1977, p. 17). Not only does one out of two Americans die of circulatory disease but many are permanently crippled with chest pains, nonfatal heart attacks and other disorders (Lamb, 1975).

The economic impact of a disease of such magnitude affects health care costs for those stricken and their families. Aside from this, the earning capacity ceases not only during illness but often for months or even years later (Lamb, 1975).

Following a heart attack, many victims are changed into permanent patients just living in continual fear until the next attack. They slow down their activities and lose much of their desire to achieve. Even their colleagues may inadvertently reinforce the permanent cripple image by treating them kindly and cautiously. For many patients, the period after a coronary episode becomes a time of waiting for death (Albrecht, 1979).

**Frequency of Heart Disease: Males vs. Females**

The frequency of coronary artery disease increases with age and the complications associated with it such as heart attacks. Though heart attacks are not unusual for men between 30 and 40 years of age, after age 35 the likelihood sharply increases (Lamb, 1975). In the United States men have heart attacks at three times the rate of women. It has been estimated by some statisticians that the average "healthy" male has one chance in four of having a heart attack before age 65 (Albrecht, 1979). The men most susceptible are those between 50 and 60 years of age, but
after 60 the percentage of those having heart attacks sharply declines (Lamb, 1975).

Most of the research on heart disease in the past has primarily centered around male subjects but females are not immune to the disease. There is a distinct difference in the susceptibility to heart attacks. Prior to menopause, in white American females, there is usually little evidence of CAD unless the woman has diabetes, hypertension, or kidney disease.

The heart attack rate for women appears to be increasing. Between the ages of thirty and forty-five men have heart attacks thirteen times as often as women but from forty-five to sixty-two the ratio is only two to one. After age sixty-five, the frequency of heart attacks for white men and women are similar (Lamb, 1975).

While conducting a study on the role of dietary factors in CHD with a group of volunteers from the San Francisco Junior League and their husbands, Friedman and Rosenman (1974) observed that women suffered significantly less heart disease than men. When they learned that the dietary intakes were the same for the husbands and wives studied, they began questioning whether female sex hormones may provide some kind of protection for women. For a number of years some medical practitioners had assumed that sex hormones offered protection to females due to the observations that:

After a woman has gone through menopause and ceases to create the same amount of female hormones, there is an acceleration of coronary artery disease. Women who have had artificial removal of their ovaries likewise demonstrate an increased
frequency of coronary artery disease as compared to normal females in the same age group. (Lamb, 1975, p. 17)

This protection apparently afforded women by their sex hormones, was not supported by laboratory investigations. The female laboratory animal was as susceptible to experimentally induced coronary disease as male animals. Even more relevant was the finding that white women of various countries other than the United States were as likely to have CHD as their husbands. Studies made by Japanese epidemiologists since their liberation from domestic isolation after World War II found that the incidence of coronary disease among them quadrupled (Pelletier, 1977).

In several separate studies done in the United States, black women were found to be slightly more susceptible than black men to heart disease (Friedman and Rosenman, 1974). Why American black women are more susceptible than white women still remains an enigma. Since high blood pressure and kidney disease are more common in young black women than other American women, they are thought to be important factors (Lamb, 1975).

If women were not protected by their sex hormones, then what accounted for the differences in incidence of heart disease between white American men and women? It was proposed that perhaps the differences in diet may set females apart from their male counterparts. Further studies proved this to be unfounded but other factors began to emerge which suggested that it was her lack of exposure to the socioeconomic milieu and associated stress of the male that protected her (Friedman and Rosenman, 1957). Their suspicions were strengthened when they found that serum cholesterol levels fluctuated in many individuals, sometimes greatly, and
that sharp rises were found to occur in situations where a threat was perceived in relationship to an occupational deadline (Friedman and Rosenman, 1958; Grundy and Griffin, 1959). A study comparing nuns and women working outside a sheltered environment, found the working women to have higher blood pressure (Kunin and McCormack, 1968).

When the first studies were being made to test the idea that the work environment may contribute in some way to CHD, women were not found in as great a number in as many work areas as they are today. Also, the connection between stress and disease is a recent phenomenon for many health researchers.

A preliminary study made by the National Institute for Occupational Safety and Health (NIOSH) in Cincinnati, believes that organizations are paying higher prices for occupational stress than they realize. The results of their study of 130 job classifications, identified forty as being high stress jobs. The following list (for example) indicates the top ten highest stress jobs found in the state of Tennessee in 1977: Health technicians, waitresses, practical nurses, assembly line inspectors, musicians, public relations officials, clinical laboratory technicians, dishwashers, warehousemen, and nurses' aides. A large number of these jobs are female-dominated occupations and these studies found that women reported more stress related disorders than men (Albrecht, 1979).

For 20 years, studies were made of the rate of heart attacks between men and women in Brooklyn. At the beginning of the study, men had heart attacks twelve times more frequently than women under age 51. But between 1967 and 1971, men had only four times that observed in women. The increased use of cigarettes by women was considered to be a major contrib-
The question became even larger in scope when researchers examined cross-cultural studies and found that when members of less affluent cultures (male or female) were transplanted to western cultures and adopted new living behaviors, their incidence of CAD increased. Studies of four thousand Japanese men migrating to California and Hawaii showed a substantial increase in the rate of CHD, along with an increase in serum cholesterol, dietary fat intake, and obesity (Marmot and Syme, 1976).

The search for answers as to why some people are more susceptible to heart disease than others has produced a wealth of research. It was believed that if the right factors or combination of factors could be clearly defined that the disease would be controlled or eradicated. The results of this search have produced a list of contributing factors but what the right combination of factors is or whether all the factors have been discovered remains unsolved.

**Traditional Risk Factors**

Accumulating evidence points to the belief that CHD has a multifactorial etiology. A large body of biochemical, clinical, and epidemiological research indicate that environmental factors play a dominant role in the CHD epidemic (Epstein, 1965). Major influence has been assigned to various factors, but their connection with CHD remains unclarified.

Foremost among these factors are age, sex, positive family history, levels of serum cholesterol and blood pressure, cigarette smoking, impaired vital capacity, glucose intolerance, overweight, and physical inactivity. Among all
known coronary heart disease risk factors, age, sex, levels of serum cholesterol and blood pressure, cigarette smoking and physical inactivity are the most powerful predictors, in terms of a conditional probability, of developing CHD. (Amsterdam, Wilmore, and DeMaria, 1977, p. 11)

Great advances have been made from the studies of risk factors but still it has been difficult to predict new cases of CHD using various combinations of these factors. Many victims of CHD do not exhibit high levels of these factors, differences in physical activity or different dietary practices as compared to those who remain free of the disease in longitudinal studies (Mann, 1977). In many cases, CHD remains rare in populations that are at high levels on certain risk factors (Bruhn and Wolf, 1970). Standard risk factors are also not valid predictors of CHD in all cultural settings. When comparing the Framingham, Massachusetts residents' rate of CHD with that of residents in Honolulu, Puerto Rico, and Yugoslavia, different combinations of risk factors were found to be related to different rates of CHD in different populations (Keys, 1970; Gordon, Gardia-Palmieri, Kagan, Kannel, and Schiffman, 1974).

There remains little evidence that just by changing the diet, improving physical activity, or by eliminating one or more standard risk factors that the primary rate of CHD or rates of recurring coronary morbidity will be reduced (Rosenman, Friedman, and Chesney, 1979). Since the traditional risk factors proved to be far from the final explanation for the epidemic of CHD, additional factors have continued to be sought and investigated, i.e., personality factors. Even though investigations continue into other causative agents of CHD, it is important to not
diminish the knowledge that has been gained concerning the relationship of the traditional risk factors not only to heart disease but other diseases as well. Many physicians feel that the first step to helping a person recover from CHD is to get him/her to decrease the behavioral excesses in his/her life (A Start At, 1975).

**Type A Behavior Pattern**

In a search for contributing causes for CHD, a large body of research has been conducted to identify and isolate the psychosocial factors that influence the risk of CHD (Glass, 1977; Jenkins, 1971). A wide variety of social, psychological, demographic, and emotional factors have been investigated, including religion, social class, occupation, anxiety, neuroticism, life events and change, emotional loss, life satisfactions and dissatisfactions, geographic mobility, and others. However, the vast majority of these involve retrospective studies which were subject to methodological errors with mixed evidence as to an association of these factors with CHD. Some of the studies did show that certain of these factors predispose individuals to a higher risk of having CHD (Jenkins, 1971, 1976; Lehman, 1967). The vast array of psychosocial factors has been critically reviewed by Jenkins, et. al. The purpose of their study was not to discuss all of the factors but to concentrate on the particular personality and behavioral traits which appeared to be related to CHD.

The historical findings in regard to any identified psychological factors are rather limited. The descriptions of individuals, particularly younger ones with various forms of heart disease, i.e., angina pectoris, seem to present a consistent picture (Rosenman, Friedman, and Chesney, 1979). Hunter (1729-1793), a physician afflicted with angina
pectoris, once stated that his life was "in the hands of any rascal who chooses to annoy me". Over a period of 20 years, Osler observed the behavior of many of his cardiac patients and wrote in 1897, "I believe that the high pressure at which men live and the habit of working the machine to its maximum capacity are responsible for (arterial degeneration) rather than excesses in eating and drinking . . ." (Jenkins, 1975). The first psychiatrists to study patients with CHD were the Menningers. Their research revealed that their patients with CHD had strong aggressive tendencies (Menninger and Menninger, 1936). Many other researchers began observing similar psychological traits found among CHD patients. A complete historical background is given by Friedman, 1969.

Little attention was given to these early investigations, perhaps because the findings were presented mainly in psychiatric parlance or studies were not thoroughly pursued. Also, few cardiologists read psychiatric journals or considered the role that the environmental milieu might play in the formation of the personality facade that they observed in their patients (Rosenman, Friedman, and Chesney, 1979).

In the 1950's, Rosenman and Friedman, both cardiologists, became interested in studying the psychological factors associated with CHD. Prior to this time, they had concentrated on the standard risk factors when treating their patients. In retrospect, they recalled their confusion when faced with reviewing research for writing articles when many studies indicated that neither fat intake or various diets could explain CHD developing in certain persons. Likewise, from their own practice, there were too many inconsistencies found in the habits (eating, exercise, etc.) of their patients. They began to believe that something else
must be operating, but what? (Friedman and Rosenman, 1974).

One particular incident occurred that started Rosenman and Friedman thinking about the behavior of their patients. They had called in an upholsterer to fix the seats of the chairs in their reception room. After inspecting the chairs he asked them what kind of practice they had. They replied that they were cardiologists and why he had wanted to know. "Well," he replied, "I was just wondering, because it's so peculiar that only the front edge of your chair seats are worn out." Later they reflected on this remark many times and what it indicated about the behavior of CHD patients (Friedman and Rosenman, 1974).

Many years of research followed which led them into a new orientation toward their younger (under age 60) CHD patients. They concluded that those with CHD did possess, to a greater or lesser degree, a specific pattern of overt behavior which they termed the Type A Behavior Pattern. From their observations it was clear that this pattern did not follow the clinical onset of CHD but preceded it (Rosenman, Friedman, and Chesney, 1979).

**Definition of Type A Behavior Pattern**

Type A Behavior Pattern (TABP) is a particular action-emotion complex which is exhibited or possessed by an individual who is engaged in a relatively chronic and excessive struggle to obtain a usually unlimited number of things from his environment in the shortest period of time or against the opposing efforts of other things or persons in this same environment. Thus this chronic struggle may consist of attempts to achieve or do more and more in less and less time or of a chronic conflict with one or a
group of persons. In either case, however, the person afflicted with this behavior pattern never despairs (despite the intensity or duration of the conflict) of losing the struggle. He thus differs sharply from the subject with classic anxiety state who, finding or believing his challenges or afflictions overwhelming, seeks therapeutic solace and reassurance from his physician, his psychiatrist or his interested friends. In short, the Type A person usually confidently advances to grapple with his challenges; the subject with a true anxiety neurosis despondently retreats before his. (Rosenman, Friedman, and Chesney, 1979, p. 6)

It is believed that the western culture fosters this type of behavior for it rewards those who can perform, think, communicate and in general have a more aggressive attitude towards life. This style of life does not stem solely from a personality defect but is activated by challenges which arise in a particular environmental milieu. Those people who are most susceptible to these conditions elicit the Type A response. Thus, it is important that the environmental milieu be considered as a part of the response. It is conceivable that if the milieu were severe enough, that any individual, regardless of his/her basic personality, might so react that Type A behavior would appear. Likewise, if the challenges or conflicts were removed, TABP may disappear (Friedman and Rosenman, 1974).

As the study of the TABP has continued since the original formulation, researchers are finding other facets to the psychological concomitants to CHD. Matthews and Saal (1978) investigated the relationship of TABP to other measures of job involvement and motivation constructs of 94 male subjects enrolled in general or abnormal psychology courses at Kansas
State University. They used the Thematic Apperception Test (TAT) and the Mandler Test Anxiety Questionnaire as indices and compared these to the scales of the Jenkins Activity Survey (JAS) and the stress interview. They concluded that those subjects with the highest JAS Type A scores were high on need to achieve and low on need to avoid failure. However, Pattern A as measured by the JAS or stress interview, in this college population, was unrelated to achievement, power, or affiliation. This study points out the importance of considering combinations of constructs in understanding TABP.

Psychological stress has been found related to CHD in a number of ways. Lazarus (1966, 1975) defines stress as the threat of anticipation of any future harm, whether physical, i.e., electric shock, or psychological, i.e., loss of self-esteem. Stress is seen not solely as stimulus or response with respect to both sets of factors. While certain life events have a universal appraisal as stressful, such as the death of a loved one, an assessment of the individual's appraisal processes is still essential to a firm designation as to whether the event is stressful or benign (Glass, 1977),

"Three general classes of psychological stressors have been studied in connection with coronary disease: (1) general dissatisfaction with various aspects of life; (2) chronic or relatively long-term life events experienced by the individual as stressful; (3) acute life events, defined by the individual (as well as by the culture) as stressful" (Glass, 1977, p. 12). Wolf (1969) found job dissatisfaction and inability to derive pleasure from leisure activities related to myocardial infarction and sudden death.
Levi (1965) studied 20 healthy female office clerks in order to determine if their adrenalin and noradrenalin levels would be affected during pleasant and unpleasant states. The women were shown four different types of motion pictures on 4 consecutive days. The movies ranged from bland natural-scenery films to aggression-provoking films. The aggression and amusing films were accompanied by significant increases in both adrenalin and noradrenalin. The anxiety-provoking film raised the level of both catecholamines to levels above all previous films. Thus, it was concluded that the intensity of the emotional arousal is an important factor in the excretion of these hormones.

A study of 20 U. S. navy underwater demolition trainees over a 2 month period was made to determine the correlation between serum cholesterol levels and self-reported intensities of various mood states. Significant negative correlations were found between cholesterol levels and feelings of arousal, motivation, and happiness. Consistent positive correlations were found between cholesterol levels and feelings of anger, depression, fear, and lethargy (Rahe, Rubin, Gunderson, and Arthur, 1971).

Studies such as these demonstrate that during certain mood states the body responds by increasing the hormone levels of the catecholamines. When the hormones are needed for an emergency, they prepare the body for activation and then are used by the flight or fight response. When the individual is able to act, the hormones are utilized by the body then eliminated. When the individual responds to a stimulus by excreting hormones but does not eliminate them in some physical manner (flight or fight), apparently they wreak havoc within the individual's internal environment. Repeated activation of hormones throughout the day and during
a lifetime has been shown to relate to the onset of various diseases --- among them CHD (Selye, 1976).

Adrenalin prepares the individual by stimulating the heart, dilating the arteries leading to the heart and muscles, mobilizing glucose, and immobilizing the gut. Noradrenalin acts as a vasoconstrictor with some exceptions, e.g., raises both systolic and diastolic blood pressure and dilates coronary vessels. Both hormones raise the oxygen consumption, increase the plasma level of fatty acids and mobilize fat (Frankenhaeuser, 1971). Along with the discharge of catecholamines, is also an increase in platelet aggregation or blood clotting. Type A's engaged in an active struggle to control their environment (in a competitive situation) showed an increase in platelet aggregation time as well as an increase in noradrenalin. Type B subjects, who responded more passively to the situation, did not show a similar rise in either blood clotting time or noradrenalin output. In fact there was a slight decrement in noradrenalin (Friedman, Byers, Diamant, and Rosenman, 1975). Thus, Type A's who respond to many events throughout the day in a manner that stimulates the adrenals, subjects their system to a chemical imbalance with little time for recovery before the next event. Physiologically, the demand for homeostasis demands extra work for their internal organs. Eventually some part of the system breaks down from overwork, i.e., the heart.

A survey of the literature by Glass (1977) as to the prevailing descriptive characteristics of the Type A individual, found four consistent traits: (1) competitive achievement striving; (2) exaggerated sense of urgency; (3) aggressiveness and hostility; and (4) a sense of helplessness in uncontrollable situations. Other studies have shown Type A's to
be concerned with the number of achievements or things they possess, hyperalert, well-planned and orderly, self-controlled, self-confident, prefer to work alone when challenged, deeply involved in their vocation, unable to relax away from work, self-involved, outgoing, with excessive striving for achievement. Achievement-oriented A's often deny failure, deny illnesses such as CHD, have a strong desire to control their environment, and report greater job dissatisfaction and conflicts (Rosenman, Friedman, and Chesney, 1979).

Type B's are far more relaxed, satisfied, easy going, and unhurried. They may also have drive and be competitive, but it is not monitored by a stopwatch or a calendar. Their goals are more well thought out and they are not comparing their number of achievements against their peers. They are free of hostility, understand their strengths and weaknesses, and work for personal satisfaction and not competitively like A's to overcome someone else. Their self-worth comes from knowing and working towards life goals which usually transcend social or material success. They often meditate and take time for quiet contemplation and relaxation. Type B's contribute to a more creative output since they take the time when confronted with a task to weigh all sides and think things through. The Type A person's eagerness to get things done may cause him/her to respond in a rote fashion which may cause errors in judgment (Friedman and Rosenman, 1974; Pelletier, 1977).

**Relationship of Type A Behavior Pattern to Occurrence of CHD**

The Western Collaborative Group Study (WCGS) was initiated in 1960-61 with 3,524 men employed in the San Francisco Bay area. It was one of the first major prospective epidemiologic studies that sought the rela-
The relationship between twenty-one risk factors, considered singly and in various combinations. The emergence of new CHD was checked annually and in a follow-up exam in 1965. Among the risk factors chosen were: serum cholesterol levels, hypertension, cigarette smoking, occupational status, socio-economic status, and certain psychological factors. The psychological factors (anxiety, depression, aggression, etc.) chosen for inclusion in the WCGS had been an accumulation of observations that Rosenman and Friedman had made about their patients' mental health after they had had some form of heart disease (Rosenman, Friedman, Straus, Jenkins, Zyzanski, and Wurm, 1970).

The final follow-up report of the WCGS was published in 1975 (Rosenman, Brand, Jenkins, Friedman, Straus, and Wurm, 1975). Of the initially 3,154 healthy subjects in 1960-61, CHD had occurred in 257 during the 8 1/2 year follow-up. This incidence was significantly associated with: (1) CHD in the subjects' parents; (2) reported diabetes; (3) current cigarette smoking; (4) elevated blood pressure at intake; and (5) elevated serum levels of cholesterol, triglycerides, and lipoprotein ratios. There was also a significant relationship between the amount of schooling and CHD, with higher rates found among those with a high school education or less (Glass, 1977).

Men judged to have Pattern A Behavior had more than twice the rate of new CHD as men judged to have Pattern B. Analysis indicated that a higher rate still prevailed in Type A's where subjects were stratified according to the risk variables mentioned earlier. The relative risk ratio for A's and B's was 1.87 for those in the age range of 39 to 49 and 1.98 in those 50 to 59. It was concluded that the predictive rela-
tionship of Pattern A to CHD cannot be explained solely by other risk factors; Pattern A seemed to have an independent pathogenic influence (Glass, 1977; Rosenman, et al., 1975).

The classification of subjects into Type A or B was made by way of a stress interview which was developed by Rosenman and Friedman and administered by two cardiologists in a double-blind situation. Though they earlier in their investigations emphasized the importance of Type A behavior as the primary factor in the causation of CHD, they have more recently included the big three risk factors. This change has come about due to the work of researchers at the National Heart and Lung Institute and the American Heart Association. The Type A person now includes one who tends to be a heavy smoker, has high blood pressure, and high cholesterol, while the Type B has none of these (Lamb, 1975).

The prospective study at Framingham (Haynes, et al., 1979) created a multivariate risk equation for prediction of CHD, based on standard risk factors (Haynes, Levine, Scotch, Feinleib, and Kannel, 1978). "Multiple logistic analysis of the direct association between CHD incidence and behavior pattern gives an approximate relative risk of 1.9 (P < .0006) and 2.1 (P < .0015) for Type A compared to Type B men, aged 39 - 49 and 50 - 59 years, respectively" (Rosenman, Friedman, and Chesney, 1979). The risk seems to be associated directly with Type A and does not decrease in older men.

Assessment of Type A Behavior Pattern

The two most commonly used methods for assessing TABP are the structured interview (SI) and the Jenkins Activity Survey (JAS). Other assessment measures have been developed and will only be mentioned briefly.
The large body of research conducted using either the SI or the JAS, to date, lends them to be the favored instruments in determining Type A or B status of subjects.

The Structured Interview

The structured interview was developed by Friedman and Rosenman to assess the action-emotion complex found associated with TABP. They observed that Type A's are not all aggressively operating against time to the same degree and that the behavior may not be apparent at all unless the individual is challenged by the environment. For example, a hurried, hard-driving, competitive, aggressive newspaper editor might not exhibit TABP when hospitalized for a minor illness (Friedman and Rosenman, 1977).

The SI was so designed as to provide a suitable challenge in order to study the response style of the individual. The content of the answers of the subjects are of far less concern than the style in which they answer though both are considered. The characteristics of TABP which are assessed are verbal reports, voice stylistics (rapid, loud and explosive speech), and certain psychomotor manifestations (drumming on the table, continually moving a foot, etc.). The interview requires from 10 to 15 minutes for administration, and is usually tape-recorded for independent raters (Rosenman, Friedman, and Chesney, 1979; Glass, 1977).

The original classification system employed five categories of behavioral patterns. Fully developed Type A's were classified as A-1, and as A-2 if TABP was exhibited to a lesser degree. Type B subjects were classified B-4 if they exhibited B behavior to an extreme degree and B-3 if to a lesser degree. Type X indicated those who had equivalent components of A and B behaviors. Recently, however, Types B-3 and B-4 have
been combined into a single B designation, since the former subdivisions were not found to differ on physiological measures and CHD (Rosenman, 1979).

One particular strength of the SI is its' ability to predict CHD as demonstrated by prospective studies like the WCGS. Some of the problems encountered by the administration of the SI is the training required and the personal stylistics of the interviewer. Scherwitz, Berton, and Leventhal (1977) proposed that the behavior typing was too holistic and subjective. It was felt that interviewers vary in their ability to ask questions and at the same time integrate cues for assessing the behavior patterns observed. A more objective, empirical criteria was suggested, i.e., voice stylistics as measured by tape recordings or audio-visual aids. Voice stylistics were found to be the best discriminators for behavior typing by the SI.

The SI is currently being investigated as new components are elucidated through research. Though it was not originally conceived of as a methodology that could be qualified, various areas are being studied. In one instance, speech characteristics are being tape-recorded and studied by Schucker and Jacobs at the National Institute of Health. Videotapings are also being used so that psychomotor and other behavioral manifestations can be viewed to improve assessment by independent raters (Rosenman, 1979). The classification of subjects by the SI should improve as new components are added.

The Jenkins Activity Survey

The best studied paper and pencil questionnaire for assessment of TABP is the Jenkins Activity Survey (JAS). It was designed specifically to classify individuals along the A/B dimensions, and was developed from
an item pool derived from the SI as well as clinical experience. It provides a composite Type A scale and three factor-analytically derived subscales: Hard-Driving, Speed and Impatience, and Job Involvement (Zyzanski and Jenkins, 1970).

The JAS was originally developed for the WCGS. Behavioral ratings made by the SI and the JAS corresponded 73 percent of the time in comparing those at intake and at the first follow-up 12 to 20 months later (Rosenman, et al., 1975).

The validity of the JAS is based upon its agreement with the SI and its ability to predict CHD. A 70 percent agreement was found between the JAS and SI in the Belgian multifactorial Heart Disease Prevention Project but a significantly lower agreement in other studies, e.g., WCGS, Houston, St. Petersburg, Florida (Rosenman, Friedman, and Chesney, 1979). Studies at Duke University Medical Center did not confirm previous findings of a relationship between scores of the JAS and the extent of severity or extent of arteriographically determined CHD. The results, however, could be due to the fact that the JAS was originally standardized on an urban, male population while most of the patients in this study were from a rural setting (Blumenthal, et al., 1978).

The original version of the JAS was not suitable for a college population but a modified version has been designed for young men and women attending college. Form C has been used in many studies with college students. Matthews and Saal (1978) found only a 42 percent agreement rate between the JAS and the SI. They concluded that the JAS and SI are measuring independent facets of TABP. Dembroski, MacDougall, Shields, Petitto, and Lushene (1978) studied 50 male college students in order to
determine their psychomotor performance in response to challenge. They were administered both the JAS and the SI. Results demonstrated a 66 percent agreement between the two when the interview is used as the criterion and the JAS is split into low- and high-scoring subgroups in proportions similar to those seen for B and pooled A categories of the SI. The JAS further showed good agreement in identifying interview Type A's (77 percent), but poor in classifying Type B's (36 percent).

Sixty male students at the University of Texas at Austin were recruited from a pool to participate in a test to examine the relationship between stress levels and learned helplessness in human subjects. Form C of the JAS was used to classify the subjects. The students were subjected to loud noise bursts and were placed in experimental situations where they could either terminate the noise or were unable to do so. Under controllable and moderate stress the A's learned to escape quicker than Type B subjects. Whereas under high stress the tendency was reversed. The A's did not rate the noise more unpleasant than the B's, but did rate themselves more helpless than B's under high stress. Analysis of the JAS scales, showed that the Speed and Impatience scale may be the most important one in determining the relationship between TABP and learned helplessness (Krantz, Glass, and Snyder, 1974). Glass, Snyder, and Hollis (1974) also found students who scored high on the A-B scale and S scale of the JAS were more time urgent and made more mistakes on a task requiring a low rate of response for reinforcement.

Although Type A is associated with the incidence of CHD in women (Haynes, et al., 1979), very little is known about the possible differences in the dynamics of the pattern between the sexes. MacDougall,
Dembroski, and Musante (1979) compared several self-report measures of Type A behavior with the SI. One hundred forty-nine male and 84 female students were assessed using the SI, JAS, Gough Adjective Checklist (short form), Thurstone Temperament Schedule, and Framingham Scale. Results found the JAS to correlate weakly with behavioral assessments made with the SI. Both the Gough and the Thurstone scales correlated stronger with the SI than the JAS. The Framingham scale correlated better for women than men. Since Haynes et al. (1979) found the same results, it is possible that it may not be unique to this sample. The investigators suggested that the JAS not be used alone at this time but either in conjunction with the SI, Gough Adjective Checklist, or Thurstone scales.

**Type A Intervention Models and Methods**

The discovery of the TABP is a recent phenomenon and as such much is still to be learned about the psychological factors related to it. Since it is such a relatively new discovery, various methods of modifying this behavior are being sought with no method as yet prescribed. Perhaps the different modification techniques are as variable as the Type A population.

Since most of the research on CHD has been with men, the modification methods have primarily sought male participants as will be reflected by the following review of research.

**Reducing the Standard Risk Factors**

For CHD patients in general, interventions have been aimed at reducing the standard risk factors. Individuals who have hypertension are known to be at greater risk of having CHD than those who do not have the problem. A variety of treatment approaches based on behavioral methods have been reported to reduce arterial pressure in some people. These
include autogenic training, biofeedback, yoga exercises, and progressive relaxation. Metronome-conditioned relaxation (MCR) is a behavioral procedure which is designed to specifically induce deep muscle relaxation. It can easily be applied by means of a tape recording. Subjects using this form of relaxation showed a significant reduction in blood pressure when MCR was instituted. One subject was even able to discontinue his hypertensive medication after six months (Benson, Shapiro, Tursky, and Schwartz, 1971; Brady, Luborsky, and Kron, 1974).

Historically, the relaxation response has typically been elicited in a religious context. Studies of the cultures who are known to meditate or relax regularly, in the relationship to their low CHD rates, have given scientists pause for consideration. Blood pressure is known to remain lower in meditators as well as a simultaneous decrease in the body's metabolism, heart rate, and breathing rate. These changes are physiologically different from sitting quietly or sleeping. Learning how to elicit this response is of great benefit to those under stressful situations or who already have a form of CHD (Benson, 1976; Brown, 1980). Results of a 10 week study of various forms of relaxation therapy for hypertensive veterans, showed that the therapist-conducted therapy group had the greatest changes in systolic and diastolic blood pressure readings even at a six month follow-up (Brauer, Horlick, Nelson, Farquhar, and Agras, 1979).

Various diets and specific weight reduction plans have resulted in an abundance of self-help books and residential programs designed to aid CHD individuals. An example of such a program is the Pritikin Research Foundation which conducts a 26-day residential program in Santa Barbara,
California. This program is designed to change the lifestyle and attitudes toward diet and exercise of the public in general. Pritikin (1980) cites many case studies in his text as evidence that his treatment is effective in reducing any further obstruction of arteries and improving cardiac functioning.

Meyer and Henderson (1974) conducted a study of the Stanford Heart Disease Prevention program. They designed a program for reducing the standard risk factors by using behavioral techniques. Two hundred forty people volunteered for the program from an industrial setting. The treatment groups involved: (1) 12 behavior modification sessions using self-control techniques in a group setting from 2 to 3 hours each; (2) individual counseling sessions with a health educator, 15 minutes each; and (3) a 20-minute counseling session with a physician. All treatments lasted for eleven weeks and had a follow-up evaluation after 3 months. The greatest change in goal behaviors (decreased fat and cholesterol intake, lower calorie intake, increase in physical activity, and reduced or terminating smoking) was found as a result of the behavior modification group.

Farquhar, Maccoby, Wood, et. al. (1977) replicated the Stanford study in three California towns matched for demographic variables. Two of the towns received a multimedia campaign on cardiovascular disease over a 2-year period. Results showed the greatest decrease in cardiovascular risk factors in the cities which had received the information. After a 3-year follow-up, knowledge of risk factors was still highest in the treated towns, but some individuals had resumed their old habits.

Other educators and researchers are looking at community efforts like the Stanford programs as perhaps the model for future public health
strategies. Though studies like this are expensive, compared to the rising cost of health care, it has been found to be usually cost-effective. There is a growing dissatisfaction with the efficacy of professional and institutional methods of delivering psychological and preventive medical services. The results obtained from the success of group therapy, peer counseling, and self-help groups, may signal a need for a change in service delivery (McAlister, Puska, Koskela, Pallonen, Maccoby, 1980).

**Modification of Type A Behavior Pattern**

Cardiologists and epidemiologists have been slow to accept the idea that TABP may have a causal relevance for the incidence of CHD. Recent confirmations by the Framingham and cross-cultural studies appear to be changing their views somewhat. Also there has been little success from programs that have been solely concerned with altering the standard risk factors. Most researchers are convinced that eliminating or altering the standard risk factors is important in preventing CHD, but it appears that this may need to be initiated at a younger age, such as adolescence or younger. However, any program is incomplete that does not also aim to modify the TABP (Rosenman, Friedman, and Chesney, 1979).

A general aim in the treatment and prevention of CHD is, in addition to altering dietary and smoking habits, to correct the pathogenic lifestyle of TABP. Since eliminating all uncontrollable aversive life events is probably an unattainable goal, the important consideration is how the individual deals with these events. Pattern A may be adaptive for initial confrontations, but in the long run, the individual is at considerable health risk. A major change in coping would thus seem to be indicated
but whether this can occur is another matter. Research has shown that TABP is probably learned by individuals who are genetically predisposed to shaping processes that contribute to the emergence of hard-driving and time-urgent modes of coping (Glass, 1977a, 1977b).

One approach to the modification of TABP has been used by Suinn and associates (1971). This Cardiac Stress Management Program (CSMP) included procedures to teach coping strategies for stress: Visuo-Motor Behavior Rehearsal (VMBR) and Anxiety Management Training (AMT). Briefly, AMT involves training subjects to be aware of physical arousal cues and then teaching them to relax. VMBR is a covert rehearsal procedure that assists subjects in learning non-Type A behaviors.

On the premise that stress management derived from AMT was a crucial factor in the success of the CSMP, another study was undertaken using only AMT with Pattern A subjects. The Spielberger State-Trait Inventory-State (STAI-S), the State-Trait Inventory-Trait (STAI-T), and the JAS were administered before and after treatment. Results demonstrated a significant decrease in STAI-S and STAI-T scores for treated subjects as compared with controls. The JAS A/B score did not show a complete change-over from Pattern A to Pattern B. It was concluded that AMT was effective in training subjects in stress management (Suinn and Bloom, 1977).

There is some evidence that clinical and psychopharmacological techniques might be effective in reducing TABP. It has been suggested that the administration of psychotropic drugs of the sedative type might inhibit the emotional and muscular tension found in A's. B-adrenergic blocking agents, i.e., propranolol may be useful in helping persons with TABP cope with psychological stress. The blockade of beta receptors by
these type drugs would diminish the release of catecholamines which A's are known to secrete profusely during uncontrollable stress (Glass, 1977b).

The use of group therapy for modifying TABP has been recommended by a number of researchers and clinicians. Rosenman and Friedman (1977) suggest that one of the best ways for the Type A to really see what his/her behavior is like, is to have him/her in the presence of others who have similar characteristics. Since Type A's are great deniers and rationalizers, it is often difficult for them to admit to having any traits that are seen as unfavorable by others. Voice recordings or videotapes can also demonstrate the time-urgency or hostility they exhibit. Many Type A's have been found to harbor feelings of anxiety and depression which are often suppressed. As counseling continues and Type A's are able to separate and identify their personality components apart from their jobs, they may become consciously aware of affective disorders which were hidden. Since this discovery tends to be upsetting to many, additional therapy is often necessary. A philosophical change seems to be crucial to the modification of TABP. The humanistic psychology approaches may be beneficial to some individuals in facilitating a philosophic change. Various kinds of group therapy have been successful in treating clinical and non-clinical populations with TABP.

Jenni and Wollersheim (1979) found that self-perceived levels of TABP were more effectively reduced by cognitive therapy based on the principles of rational emotive therapy than stress management training. Roskies (1978a) used both psychoanalytically oriented group therapy and behaviorally oriented training for reduction of anxiety and tension in Type A's. The psychotherapy program centered on the Type A's need for
control and mastery of their environment. It was believed that the theme repeated by Type A's was a family constellation of striving for maternal love together with guilt feelings due to the ambition facet of paternal identification.

The behavioral approach used deep muscle relaxation and monitoring of tension levels. The results indicated that the behavioral group was the most successful in reducing anxiety, life satisfactions, blood pressure, cholesterol levels, and psychological symptoms. In another study with a nonclinical population, Roskies, et al. (1978b) found that modification could be accomplished with healthy subjects but with more difficulty than post-infarction groups.

Many different therapy modalities have been investigated with Type A subjects. A great number appear to have used behavior modification techniques. The results proved successful over the short-term but whether they will afford long-term changes is yet to be determined. Rosenman and Friedman (1977) have suggested that a basic philosophical change is indicated if the Type A is to be permanently affected. Other treatment forms then seem to be worthy of investigation that have not previously been tried. A variety of therapeutic techniques may be necessary for modification of TABP due to the differences in individuals who exhibit the behavior pattern, i.e., education, socioeconomic levels, ethnic affiliation, etc.

A Model for Increasing Self-Actualization

Research has shown that many behavior modification techniques have been tried with Type A's and many have been successful. But still there remains a lot to learn about the TABP and the environments which stimulate
the activation of this behavior. Friedman and Rosenman have suggested that perhaps the humanistic psychology approach may be helpful to certain individuals with TABP. Little has been done to study individuals Typed A/B or a mixture of the two, in terms of the humanistic concept of self-actualization. This section will provide the theoretical basis for a model developed to understand the TABP according to the principles of individual growth via self-actualization.

Maslow's Theory

Maslow's subject for study was motivation. All men are motivated, he said, by needs which are arranged in a hierarchy. These he called instinctoid needs, namely, physiological needs, the need for safety, need for love, belonging, and identification, and need for respect and self-esteem. Taken together, the instinctoid needs constitute the basic deficiency needs. The highest need is of a different type; it is the need for growth and self-actualization. Since the needs are found in a hierarchy, the ordering is important. The lower ones are more potent when unsatisfied; and the higher ones are more potent when the lower ones are satisfied (Maslow, 1968, 1970). When the basic or instinctoid needs are deprived, illness can result, i.e., neuroses usually involves unsatisfied needs. Neurosis is seen as a failure of personal growth. However, with conflict there is also a sign of relative health. Even though the person is frightened and does not trust himself/herself, he/she is reaching out in a timid, ineffectual way towards actualization (Maslow, 1971).

Likewise, when the basic needs are met, the higher needs demand satisfaction. This produces a condition characterized by a feeling of lack, void, or desire to do something more than is presently being done. In
the language of the existential philosophers, it is an "existential vacuum" or search for meaning in life (Maslow, 1970). "That most of us function most of the time on a level lower than that of self-actualization he called the psychopathology of normality" (Loevinger, 1976, p. 140).

Maslow believed that our culture promotes satisfying the basic needs while the higher needs are largely ignored. So it is seen as normal to want to satisfy the basic needs and stop there. When individuals are aware of their need for growth they are sometimes at a loss as to how to fulfill that need or are led to believe that they should be satisfied with what they have at the moment. The existential emphasis on the authentic person has shed light on the phoniness of living only by fear and illusions produced by the past. The incongruity of being aware of both views creates an ever present anxiety for someone who is suffering from a higher needs deficit. The psychopathology of the average person is so widespread that we do not notice it until we study people who are fulfilling their higher needs (Maslow, 1968, 1970).

Maslow set out to study as many self-actualizing persons as possible. At first he studied college students, but when he found the rate to be about one per 1,000 students, he picked cases among friends and acquaintances. Because many of his friends were embarrassed by requests to study them, he finally turned to public figures and literary characters (Loevinger, 1976). He estimated that only about 1 percent of the population could be classified as being self-actualizers. But he believed that we could use self-actualizing people as biological assays in that their greater sensitivity and perception might help us to get a better report on reality (Maslow, 1968). Loevinger (1976) points out that most of
Maslow's actualizers were over 50 years old. She sees that failure to coordinate his ideas with a developmental scheme as a weakness to his theory for good adjustment or good psychic health can occur at any age but maturity cannot. "What is needed is a concept of good adjustment or of psychic health that applies irrespective of age in order to clarify the relationship of maturity to psychic health" (p. 142).

Maslow defined the characteristics of self-actualization as: not an end state but a process of development; having a more efficient perception of reality; having the capacity for spontaneity, simplicity, and naturalness; focusing on problems outside of self; having the quality for detachment and the need for privacy; having availability to the inner life; having the capacity for both abstractness and concreteness; having greater autonomy and sense of identity apart from cultural norms; having a tolerance for ambiguity; having a philosophical, unhostile sense of humor; being able to discriminate between good and evil; having deeper and more profound interpersonal relations with others; having a kind of creativeness or originality; having gemeinschaftsgefühl or a feeling for mankind; having guilt and a sense of responsibility; having peak experiences; being able to transcend contradictions and polarities (Maslow, 1970).

If so few people are able to self-actualize but all have this innate need for growth and self-actualization, what prevents them from reaching the higher needs? Maslow believed that the basic reason why someone fails to reach the self-actualization is ignorance. A blindness to future possibilities, change, development, or potentialities leads to a status quo philosophy in which "what is" (being all there is or can be)
must then be taken as the norm. Also under hard or bad environmental conditions (prison, concentration camp, starvation, plague, terror, absence of value systems, breakdown of value systems, hopelessness, etc.) people usually move away from the higher needs and towards the lower needs. However, it is not known why a few people under these same conditions move towards the higher needs (Maslow, 1971).

Maslow (1971) advocated that education was the primary way whereby the individual and ultimately the society could be made aware of the benefits of self-actualization. Along with Freud, he proposed that "the more he knows about his own nature, his deep wishes, his temperament, his constitution, what he seeks and yearns for and what really satisfies him, the more effortless, automatic, and epiphenomenal becomes his value choices" (p. 107).

The true goals of education, family training, and psychotherapy, or self-development were to be discovered by studying psychologically healthy individuals. The motivational lives of healthy people were revealed as striving for growth needs while the motivational lives of others centered around the basic needs (Maslow, 1968). In order to increase the health of someone, the task is to move him/her towards the higher needs or B-values (Maslow, 1971). In growth-motivated people there is no coming to rest, for gratification breeds increased not decreased motivation, heightened not lessened excitement. Therefore, they want more and more, i.e., education (Maslow, 1968).

The sick person, it is assumed, would prefer a healthier state of affairs if he/she ever experienced it. The task of the counselor or therapist is to help foster self-actualization, not cure a disease. The
humanistic helper needs to shift his/her emphasis to a more Taoistic one. "Taoistic means asking rather than telling. It means nonintruding, non-controlling. It stresses noninterfering observation rather than a controlling manipulation. It is receptive and passive rather than active and forceful" (Maslow, 1971, p. 14).

The therapist or counselor helps the client search for oughtness via facticity. The values quest is a quest for knowledge, facts, the truth, and information within the defined sciences. The process of therapy and goals of therapy are indistinguishable (Maslow, 1971). "The immediate goal of therapy is to find out what the person is; the process of therapy is also finding out what the person is . . . Become what thou art! The description of what one ought to be is almost the same as the description of what one deeply is" (Maslow, 1971, p. 108).

Maslow (1971) believed that neurosis was a powerful destroyer of the efficiency needed to make choices. Psychological ill health could be defined by the degree of choosing that which is "bad" for the organism, i.e., drugs, alcohol, bad diet, bad friends, bad job. Many psychiatrists, psychologists, and biologists have come to assume that practically all diseases, and perhaps even all diseases without exception, can be called psychosomatic or organismic. If one pursues the physical illness far enough, one will find social variables, intrapsychic, or intrapersonal variables or determinants. Even broken bones can be related to the accident-prone person and his/her attraction for the accident-fostering environment. Maslow, thus, advises the scientist, therapist, or educator to be more holistic in helping individuals move towards self-actualization.
The therapist must first be a healthy person before he/she attempts to help others. The more the person is in touch with his/her own struggles and peak experiences, the more he/she is able to see the other as he/she is. To come to terms with his/her own strengths and weaknesses and accept them so that he/she can accept the strengths and weaknesses of others. And by realizing when he/she is projecting, he/she can recognize projection in others. By being a flexible, rather than a rigid person, the therapist can foster flexibility in others (Maslow, 1968).

The assessment of the client or clients is important as to where they are on the needs hierarchy. Therapy for those with lower deficit needs will be interpersonal, for help must come from others. Whereas, therapy with actualizers will focus on problem-solving but the problems will be solved by them in an intrapersonal manner (Maslow, 1968).

The self-actualization process is on-going and fluid and never ends until death. For the healthy individual the conative, cognitive, affective, and motor are less separated and more synergic. His/her spontaneous responses are as capable, efficient, and right as if thought of in advance. Rationality is no longer at the top but integrated. The ability to dip into the preconscious and unconscious without fear is actively exercised (Maslow, 1968). Having a society of people who fit the above description was the ultimate dream of Abraham Maslow. His own life exemplified the continuous movement towards greater self-actualization.

Holistic Health

The holistic health movement has sought to integrate mind, body, and spirit when referring to illness or optimal health. Kristein, Arnold, and Wynder (1977) suggest that health care is being less cost effective possibly
because the emphasis is on disease rather than health care. In 1950, Americans spent 4.6 percent of their gross national product (GNP) on health and in 1975, nearly twice as much, 8.3 percent. Medical care is now the second largest industry (1977). Various solutions have been proposed such as third party medical insurance to provide incentives for physicians to economize on treatment components. Though the main emphasis has been on restraining present medical practices, what is clearly called for in the future is the identification of environmental and behavioral risks for chronic diseases and susceptible individuals. Once these have been identified then preventive measures can be taken through lifestyle management (Pomerleau and Brady, 1979).

The call for preventive medicine and personal health care practices is reflected by the proliferation of books, articles, health journals, and media presentations aimed at educating the public. "Ultimately, the solution to the present crisis in health care involves individual responsibility" (Pelletier, 1979, p. 7). But how to educate the public as to how to assume that responsibility is another matter. Not only is the mass of information overwhelming, but research is still continuing as to what the exact contributing factors are that lead to certain diseases, i.e., role of diet in heart disease.

Pelletier (1979) states that the major block to getting people to implement a preventive program is that it requires a lifestyle change. The impediment appears to be the difficulty in persuading individuals to sustain new behaviors which are not obvious in short-term effects. He believes that crisis intervention medicine and holistic medicine need to work together in bringing together an enrichment of both.
The health practitioner should be someone who is willing to take responsibility for his/her own health. In order to guide someone else, it is prudent that the teacher, physician, therapist, etc. be aware that he/she is also a model. This is not to say that he/she must be well versed in all aspects of medicine, nutrition, exercise, or pathology. But that he/she has an open, questioning attitude and a willingness to investigate ways to improve his/her own physical and mental condition (Pelletier, 1977, 1979).

Health education models have been tried with whole communities as has been cited previously (Farquhar, et al., 1978). It has been proposed that the trend of the future in health care is to get the general public to assist in their own preventive measures. Though it has been suggested by many, the question remains as how to best implement this major task. The fact that education is compulsory in this country indicates that the schools will be a primary target. Just how and what we can do for the adult population now remains a matter for speculation and research trials.

Group Psychotherapy

Rosenman and Friedman (1977) suggested that group therapy would be one effective way to educate individuals to the dangers rendered by the TABP and other standard risk factors. Structured groups have successfully demonstrated that behavior modification techniques, e.g., progressive relaxation methods, can be used to teach Type A's how to change some of their behaviors.

Structured Groups

There are many different approaches to group therapy, but the structured group seems to lend itself to both personal growth and the dissemi-
nation of information that comprises an educational model. "Structured groups should not be viewed as merely a contemporary extension of the human potential movement, although some roots may be perceived therein. Rather, these approaches should be viewed as educational tools whose implementation at the appropriate point in the evolution of an individual's development can facilitate positive growth" (Drum and Knott, 1977, p. 13-14).

A structured group is defined as "a delimited learning situation with a predetermined goal, and a plan designed to enable each group member to reach this identified goal with minimum frustration and maximum ability to transfer the new learning to a wide range of life events" (Drum and Knott, 1977). Several studies have suggested that there is a relationship between group member satisfaction and task ambiguity. Jurma (1978) found that "structuring leader behavior can increase group morale by decreasing perceptions of failure, but task nature determines how much discussants believe they can improve on future tasks" (p. 133). Task ambiguity was not preferred by students, and suggested that group tolerance for ambiguity was low. Clear cut tasks in ad hoc conditions provided the most satisfaction. Group members appear to rate highly variables both external and internal to the group (Jurma, 1978).

Ware and Barr (1977) compared the effects of structured and unstructured groups on measures of self-concept and self-actualization. The 9-week group exercise consisted of 19 male and 18 female freshmen volunteers from introductory and experimental psychology classes. The subjects were randomly assigned to one of three groups: two experimental (structured and unstructured), and one control group. The Personal
Orientation Inventory (POI), the Tennessee Self-Concept Scale (TSCS), the Marlowe-Crowne Social Desirability Scale, and the Rotter Locus of Control Scale were used as pre and posttest measures. Results indicated that both experimental groups, whether structured or unstructured, reported a higher degree of agreement with the values of the self-actualizing person than the control group. The structured group showed a greater trend towards giving socially desirable responses, partially explained by the implicit communication of the group leaders.

The structured group approach was first described in the 1950's by the work of T-groups and laboratory training. Unfortunately, many such groups received poor acceptance due to the lack of well-controlled experiments (Ware and Barr, 1977). It appeared to some that the structured leader was zealously clutching a bag of gimmicks into which they delved whenever the proceedings were slowing down. Many structured groups have evolved since the early ones and report success with their techniques, e.g., Gestalt therapy (Yalom, 1975).

Lieberman, Yalom, and Miles (1973) studied the impact of the structured group exercise on group outcomes. They concluded that the members of structured groups regarded their leaders as more competent, effective, and perceptive than those members where structure was slight. However the members of structured groups had a lower outcome than members of low exercise groups. The high exercise group had fewer changes in the significant direction, fewer total changes, and their changes tended to be short-term instead of long term.

Life Theme Groups

The life theme group is "designed to provide the opportunity for in-
dividuals to examine and grapple systematically with important intra-
personal issues of day-to-day living" (Drum and Knott, 1977, p. 29).
Beginning with adolescence, the person is increasingly required to search
inwardly for answers and often with little preparation. The choices he/
she makes depend on how life themes have been resolved, e.g., sexuality,
personal values, morality. Some people move through life obsessed by a
particular life-theme and unable to change in regard to new information

Life theme groups provide the opportunity to: (1) examine basic
values and beliefs; (2) understand their style of relating to themselves;
and (3) clarify the reasons why they relate to others in specific ways
(Drum and Knott, 1977). "A life theme consists of a problem or set of
problems which a person wishes to solve above everything else and the
means the person finds to achieve the solution" (Csikszentmihalyi and
Beattie, 1979). A problem need not be conscious to be so classified nor
the solution actively pursued. If the person invests his/her attention
in a certain direction, it meets the definition. Focus on a problem is
usually accompanied by a set of strategies or beliefs about how to solve
it (Csikszentmihalyi and Beattie, 1979).

The goal of life theme groups is not just to examine or clarify
specific life themes, but to lead towards a resolution of themes. The
purpose of the resolution is to release individuals from the shackles of
an unexamined life and to redirect their efforts in more personally re-
warding ways. Some examples of life theme groups are: values clarifica-
tion, male/female consciousness raising, and self-esteem (Drum and Knott,
1977).
The core elements of life theme groups include: (1) a clear purpose; (2) a focus on interpersonal knowledge rather than acquisition of skills; (3) increased self-awareness so as to relate to others flexibly rather than role dependent; (4) exercises designed to direct or guide self-inquiry; (5) values orientation; and (6) a time limit, typically from one to six sessions (Drum and Knott, 1977).

Csíkszentmihalyi and Beattie (1979) studied how cultural inheritance affects life themes. They studied both (15) professional and (15) blue-collar workers (males) between the ages of 36 and 75 years of age who lived and worked in Chicago. They found that the existential issues confronting the two groups were very similar but the way they subjectively formulated their problems was very different. The professionals tended to generalize their personal stress into more or less global stress, while the blue-collar workers tended to respond to stress in a more personal and concrete way. They concluded that it is important for group leaders to be cognizant of cultural differences in life theme groups.

Women's Groups for Personal Growth

Hall (1975) studied life stages in married women and found that a person's stage in life may have more to do with her behavior than chronological age. The woman's life stage was more related to her role pressures, i.e., work, home, self, and time, and provided either satisfaction or conflict. Age and number of roles were not as strongly related to these variables as was life stage. The impact of various sources of conflict in different life stages was reported and forms of organizational, career support oriented towards life stages was suggested. The life
theme group format provides an opportunity for women to investigate their own life stages and concomitant conflicts experienced.

Ruble, Croke, Frieze, and Parsons (1975) conducted two field studies to examine to what extent women's study courses are effective in changing sex-role attitudes in college women. Results showed that women's sex-role beliefs are identifiable and that awareness of sex discrimination and traditional beliefs regarding the proper roles for men and women are more susceptible to influence than any other variables.

Loeffler and Fiedler (1979) designed, implemented, and evaluated an intervention to promote psychological growth in women. The focus was on increasing self-esteem through self-awareness, skills development, and cognitive and overt changes. The studies were designed primarily to evaluate the effectiveness of counselor-designed classes. Results indicated that the counselor intervention was effective on all outcomes for the intervention groups.

Group therapy with women has proven to be effective in changing sex role attitudes and facilitating personal growth. Another aspect of the structured group is the opportunity to form support groups for goal-setting and subsequent reinforcement. Lynch (1977) suggests that human companionship is important in the time of stress. Those who are deprived of companionship tend to have more illnesses and have a shorter life-span. Studies have found that under experimentally produced stressful situations, those people who had a companion present were mentally healthier than those alone. Also, those who were passively listening had a similar rise in blood pressure and the amount of fatty acids in the blood stream as their partners. It can be concluded that the human being is very physi-
ologically responsive to the presence of others, though the responses may not be obvious. Forming support groups may provide the needed companionship while the group member is struggling with growth and the pain which may accompany it.

**Summary**

The TABP appears to have a strong influence on the occurrence of CHD. Just what that influence is and how it interacts with other factors (genetic, environmental, or psychosocial) has been and continues to be the subject of a wealth of research. The main body of research on the TABP has accumulated over the past 20 years, partially due to the pioneering work of Rosenman and Friedman. Most of the studies have been with males and little is known about the female Type A.

Several assessment measures have been developed to identify the TABP but the JAS and SI remained the most frequently used and studied. After identification was made possible, different modification methods emerged. Behavior modification techniques are the most frequently studied with other methods, i.e., humanistic psychology approaches, suggested as alternatives.

Maslow's self-actualization concept provides a possible means of formulating an intervention model. Group therapy, in general, has been suggested for reaching larger groups of people in order to educate them as to how to take responsibility for their physical and psychological health. Increasing self-awareness will hopefully lead to greater self-actualization. Women's groups have been effective in producing a greater change toward self-awareness and self-actualization.
Chapter 3
Methodology

This study was undertaken to determine the relationship between the actualizing process and a humanistically oriented intervention model. Chapter three covers the research methodology used in this investigation. These methods include: (a) population and selection of the sample, (b) procedures, (c) instrumentation, (d) research design, (e) statistical analysis, and (f) hypotheses.

Population and Selection of the Sample

This study was conducted at Thomas Nelson Community College (TNCC) in Hampton, Virginia during the winter quarter of the 1980 academic year. TNCC is centrally located on the metropolitan peninsula, bordered by the York and James rivers. The college population is composed primarily of residents of the cities of Hampton, Newport News, Williamsburg, and the counties of James City and York. The purposes and definition of a community college are included in the handbook and reads:

A community college is a comprehensive institution of higher education offering programs of instruction generally extending not more than two years beyond the high school level. The programs normally include, but are not limited to, general education, liberal arts and sciences, continuing adult education, preparatory programs, special training programs to meet the economic needs of the region in which the college is located, and other services to meet the cultural and educational needs of the region. (TNCC Gator Aid, 1980, p. 9)

To meet the goals of the community college, various programs are
offered for post-high school students. The programs are also available to adults as well as the traditional college age student. An extensive student services program is maintained to help each student make sound decisions regarding his/her educational, occupational, and personal objectives. The program includes a counseling center which offers academic advising, vocational guidance, placement testing, and personal counseling.

In keeping with the changing demands of the society and the immediate community, the college provides a continuing education program. This program offers courses, seminars, and other skills training which furnishes outlets for retraining and readjustment in employment, training for new jobs, or enrichment for those who are seeking additional knowledge for personal growth (TNCC Bulletin of Information, 1979-1980).

The subjects for this study included female students who were enrolled in General 199-Women's Awareness Seminar (WAS) and General 100-Orientation. The WAS is a three hour credit elective course open to all female students. The Orientation class is a one credit hour course required for graduation. It was primarily designed to deal with such problems as adjustment to college, future planning, services available to students, and good study habits. The WAS and Orientation classes were designed, implemented, and facilitated by members of the counseling staff. The similarities of the two populations can be attributed to the fact that both courses were graded, usually taken by new students, and students were self-selected according to interest and time preferences.

The experimental group for this study was students enrolled in two sections of General 199-WAS. The students for the control group were
drawn from a large orientation class described as General 100-Orientation (one credit).

From the two sections of General 199, 30 students formed the experimental group, and 37 students from General 100 formed the control group. Pretreatment data collected on all subjects included: name, age, race, occupation, number of years in school, and curriculum of study at TNCC.

Mean Age
(N = 12) Experimental Group I = 30
(N = 18) Experimental Group II = 28
(N = 37) Control Group = 29

Racial Composition
Experimental Group I = White 8 Black 4
Experimental Group II = White 8 Black 10
Control Group = White 29 Black 7 Spanish 1

Procedures
The data gathering procedures, treatment of subjects, and ethical safeguards and considerations are discussed below.

Data Gathering
The 12 TNCC women enrolled in the WAS, that met once a week from 7:00 to 10:00 p.m., were designated as experimental Group I. The 19 women enrolled in the WAS that met twice a week from 9:30 to 11:00 a.m. were designated as experimental Group II. Grades for the students taking the WAS were determined by completion of the course requirements, attendance, and classroom participation. Both groups were told that they were part of an experiment including an explanation of the research and pro-
cедures (Appendix A). The experimental Groups I and II received the same intervention procedures.

The students for the control group met only once at the beginning of the quarter. At the conclusion of the all-day program, the women students were invited to participate in a research study. They were told that their participation would fulfill one of the requirements included in the self-paced packet. The student volunteers reported to a separate room with the experimenter. The volunteers composed the control group which had 42 members. Pretreatment data were collected on all subjects to include: name, age, curriculums, occupation, race, and number of years in school.

Three pretest measures were administered to both the experimental and control groups at the beginning of the quarter. This involved in-class administration of the Personal Orientation Inventory (POI), the flexibility scale of the California Psychological Inventory (CPI) and the Jenkins Activity Survey (JAS). The standard administration instructions were given for each test. During the 10-week intervention period, the experimental groups were exposed to experiential exercises, lectures, films, and the formation of support groups, all designed to improve self-actualization.

At the completion of the 10 weeks, both experimental and control groups completed posttest measures which included the POI and the flexibility scale of the CPI. The JAS was not repeated since it was only used for identification and classification of Type A/B subjects.

Treatment Procedures

After populations were obtained and testing completed, treatment was
given in a uniform manner. Two female counselors served as co-facilitators for both experimental groups. One counselor was a facilitator for both the evening and morning sections while the other co-facilitator for the morning session was different from the co-facilitator in the evening. The intervention materials were supplied by the experimenter and she served as a co-facilitator, trainer, and lecturer to both sections on several topics, i.e., psychological types and illnesses (for the syllabus and handouts used see Appendix A).

Ethical Considerations and Safeguards

During the first class meeting of the women's awareness class, the students were advised as to the nature of this study. A syllabus was provided that included a list of tests that were to be administered and when. It was announced that participation in the study was completely voluntary and in no way affected their course grade. Anyone who had any serious objections to the course material or the testing procedures as outlined, was given the opportunity to drop the course and take it at a later date. A permission form was provided for their signature for those who agreed to participate in the study (Appendix B).

Since this is a three credit hour graded course, the syllabus included the requirements for a student's desired achievement level which also demonstrated that the psychological tests given did not influence their grades.

Students were advised that their test scores would remain confidential and only discussed between the experimenter and the student. At the conclusion of the study, the students were notified by mail and a time was suggested when the experimenter would meet with individuals for the
interpretation of test results and the findings of the study in general. All individual tests were destroyed at the conclusion of the study and no one but the experimenter had knowledge of individual performances.

The experimenter met with the women volunteers from the self-paced orientation class and told them generally that the study was in connection with the women's awareness class. They would not receive the class activities but would take the pretests that morning and posttests 10 weeks later. The members of this class would comprise the control group at this time but they were invited to join the next women's awareness class if they were interested. A permission form was provided for their signature if they agreed to be a part of the study.

The control group was advised that the completion of psychological tests would count as fulfillment of their personal projects which was a part of the self-paced packet. It was emphasized that their performance on the tests would not affect their grades in any way.

Members of the control group were told that they would be advised by mail at the completion of the study as to where and when they could receive their test results and interpretations as well as results of the study in general. The test scores were to be kept confidential between the experimenter and the student. Individual tests would be destroyed at the conclusion of the study.

Instrumentation

The instruments used as criterion and covariate measures were chosen to: (1) establish whether the intervention model used for treatment affects self-actualization, flexibility, and synergy, and (2) as identification and classification measures for the Type A Behavior Pattern (TABP).
They will be discussed in the following order: (a) the JAS, (b) the POI, and (c) the CPI flexibility scale.

The Jenkins Activity Survey

The JAS was developed by C. D. Jenkins, Ray H. Rosenman, and S. J. Zyzanski in 1972. It was designed to classify individuals along the Type A/B dimension, being developed from an item pool that was taken from the structured interview (SI) questions and clinical experience. It provides a composite Type A scale and three factor-analytically derived subscales: Job Involvement, Speed and Impatience, and Hard-Driving. Testing time is from 15 to 20 minutes (Jenkins, 1979).

The item pool was first administered in 1964 to a group of 120 male employees who had already been identified as to their behavioral type by the SI, conducted at intake of the Western Collaborative Group Study (WCGS). The first edition (1965) of the JAS was completed by 92 percent of the participants in the follow-up exam (1965) of the WCGS. Of the 2,951 men, those who were consistently classified as Type A or Type B in both the 1960 and 1962 WCGS structured interviews, were divided into three comparable groups. The responses of group one subjects to each of the 61 items on the 1965 JAS were optimally scaled according to Fisher's method. This procedure gives weights to response alternatives of an item and supplies maximum distinction between criterion groups and allows the weighted scores to be treated as a continuous measure. When the weighted items discriminated significantly between the two behavior types, the items were then retested with group two subjects following the same procedure. The items that survived this cross-validation were then subjected to a discriminant function program (Jenkins, 1979).
A discriminant function equation of 19 items was found to have the best combination of prediction of types. It was then retested and validated on an independent sample of 419 men who comprised group three. The scores for all 2,951 men were found to be approximately normally distributed. They were transformed to have a mean of 0.0 and a standard deviation of 10.0. Results demonstrated that about 90 percent of those who scored 10 or more points in either direction were classified identically by the JAS and SI. The intermediate zone or those scores closest to the mean were found to be the most unstable for classification, both for the JAS and SI. For all persons, a 73 percent agreement was found between the 1965 JAS and the 1960 and 1962 structured interviews (Jenkins, 1979). A second edition was developed in 1966.

Other editions of the JAS have been developed in order to include a broader range of populations, particularly women. Form C, which is one of the later editions, was used for this study. This form is recommended for use with student populations as well as other adults. (For development of Form C, see Appendix F).

The internal consistency reliability coefficients for the Type A scale, based on Kendall's tau b one-year test-retest coefficients and estimates derived from the squared multiple correlation (SMC) coefficient, were .83 and .85 respectively. The two methods were so highly comparable that only the SMC estimates were used for the remaining scales. The four JAS scales whose uniform reliability coefficients, ranging from .73 to .85 (Jenkins, 1979).

The test-retest reliability of the JAS reflects both change over time and differences between forms. The core questions remained similar even though there were modifications of each successive version. Most of
the observed coefficients fall between .60 and .70 for retest intervals of from one to four years. The four-year test-retest coefficient of .64 approximates that of alternate forms of test-retest reliability, for only six items were found in common between the two Type A scales. When the same JAS edition was administered after a four to six month interval, retest coefficients ranged from .65 to .82 (Jenkins, 1979). Jenkins, Rosenman, and Zyzanski (1974) found that 90 percent of over 2000 persons who took the JAS in 1965 and again in 1969 had less than a 10-point difference in their Type A/B scores.

The validity of the JAS has been established in several ways. Initially, the content validity for the instrument was developed by the formation of questions that would distinguish persons classified as Type A or Type B on the basis of the SI. The first evidence of the criterion validity was the agreement between interview ratings and the JAS. Additional evidence comes from prevalence studies of coronary heart disease (CHD), as indicated by significant differences in the Type A scores of individuals with or without a history of CHD. Predictive studies have shown that those with higher JAS scores are more likely to have CHD (Jenkins, 1979).

Studies using the JAS with college populations have been reviewed in Chapter 2.

Personal Orientation Inventory

The POI was developed in 1963 by Everett L. Shostrum and was designed to measure the construct self-actualization. The instrument consists of 150 paired statements which allows the subject to select the statement most like himself. These statements reflect both value and behavior judgments that are viewed as important in the process of self-actualization. Testing time is approximately 30 minutes. The test is
recommended for use with subjects in grades 9-16 and adults.

The POI is composed of two major scales and two subscales. The items on the inventory are scored twice, once for either of the major scales, Time Competence (23 items) or Inner Directed Support (127 items), and then a second time to determine the scores for each subscale. Time Competence (Tc) serves as a measure of the extent to which one is oriented to the present, and the Inner Directedness (I) is a measure of the extend to which one is primarily oriented towards self (Shostrom, 1966).

The two major scores are clinically interpretable in relative terms and the scores for Tc and I can be represented as ratios. However, the manual recommends that for correlational or other statistical analyses that scores from the Tc and I scales be used in preference to the ratio scores (Shostrom, 1966).

"The major psychometric data reported in the manual are test-retest correlations and normative data. The reliability coefficients range from a moderate .55 to a good .85" (Buros, 1972, p. 508). Shostrom (1964) reported the test-retest reliability coefficients of the POI to be .91 to .93.

The most important test of the validity of the POI is that it is capable of discriminating between individuals who have been observed to have attained high levels of self-actualization from those who have not attained such development. Results of a study by Shostrom (1964) indicated that the POI significantly discriminates between clinically judged self-actualizers and non-self-actualizers on 11 of the 12 scales (Shostrom, 1966).

Concurrent validity was determined by correlating the instrument
with the Minnesota Multi-Phasic Personality Inventory (MMPI) scales. Results showed that the two instruments were not measuring the same aspects of mental health but several scales (Depression, Psychasthenia, and Social I. E.) did appear to have meaningful relationships (Shostrom, 1966).

In summary, the POI lacks some desirable properties as an inventory because of the overlap of its subscales. However, its two major scales, Tc and I, are free of this problem if used by themselves. A number of studies indicate that the inner support scale measures feelings, attitudes, and values appropriate to Maslow's concept of self-actualization, but that persons scoring high on these values or attitudes are not necessarily utilizing all of their capacities in a way consistent with complete self-actualization (Bloxom, in Buros, 1972).

Numerous studies have been conducted using the POI to evaluate the effectiveness of varying types of group counseling (Ilardi and May, 1968; Johnson, 1976; Hines, 1978). Other studies investigated the efficacy of using the POI with college students. When instructed to "fake good", the students did not produce profiles like those of self-actualized persons. The authors suggest that their results added confidence in using the POI with college students (Foulds and Warehime, 1971).

**California Psychological Inventory**

The California Psychological Inventory (CPI) was developed in 1957 by Harrison G. Gough. This instrument is designed to survey the individual from a social interaction point of view. It is particularly valuable as a research tool when the purpose is to examine social living and interaction. Testing time varies from 45 minutes to one hour and may be
influenced by motivation and reading ability (Gough, 1957).

The inventory contains 480 questions which must be answered true or false. The results are interpreted on a profile which yields 18 scales. The inventory was designed for normal individuals though 178 items were derived from the MMPI. Norms for the CPI were developed from combining available samples into a single composite for each sex. Standard scores were established from a sample of 6,200 male subjects and 7,150 female subjects. These totals included a wide range of ages, socioeconomic groups, and geographical areas (Gough, 1957). Tables are provided for comparisons of groups.

The majority of the scales were developed empirically. This method defines first the criterion dimension which is sought. The scale used for this study was the Flexibility (Fx) scale with the Psychological-Mindedness (Py) scale used as filler items.

Two reliability studies using the test-retest method are available with high school students and prisoners. The students, who took the tests one year apart, scored on the Fx scale .67 for females (N = 125) and .60 for males (N = 101). The prisoners were retested from 7 to 12 days apart and correlations of the Fx scale were found to be approximately .73 (N = 200) (Gough, 1957).

The validity problems of scales are often difficult to summarize. They are usually validated against subjective ratings of the trait. Those given in the manual were a result of cross-validation studies made with the inventory. The Fx scale correlated .48 with the staff's rating of rigidity among 40 University of California graduate students. An assessment of 40 University of California medical seniors, revealed a
correlation of -.36 with the staff's rating of rigidity. The Fx corre-
lated -.58 with the California F scale, in a college class of 180 students (Gough, 1957).

In summary, the CPI shares with the MMPI and the Strong Vocational Interest Blank (SVIB) the virtue that the inventory has enough empirical research to allow the user to evaluate the probable utility of his/her predictions in various settings, e.g., industry, educational, and clinical. The strongest point of the CPI is the very sizeable and widely varied norm groups (Goldberg, in Buros, 1972).

Research Design

This study employs a Compromise Experimental Group-Control Group Design (Kerlinger, 1973, p. 342).

\[
\begin{align*}
\text{Yb} & \quad X & \quad \text{Ya} \quad \text{(Experimental)} \\
\text{Yb} & \quad \sim X & \quad \text{Ya} \quad \text{(Control)}
\end{align*}
\]

Because it was not possible to randomly assign subjects to groups due to the conditions under which this study was conducted, the Compromise Experimental-Control Group Design was necessary.

The pretest-posttest design required treatment for the experimental group and no treatment for the control group. Treatment, the active variable, consisted of the intervention model designed by the experimenter. The intervention model was presented to the experimental group during a 10-week period. The control group engaged in routine requirements for the orientation class during the same time period.
This design allows for groups which are assembled naturally, such as classrooms, and as similar as availability permits but not so similar that one can dispense with the pretest. The more this similarity can be confirmed by pretest scores, the more the design is controlling the main effects of history, maturation, testing, and instrumentation, in that any difference between pretest and posttest measures (if greater than control group) cannot be explained by main effects of these variables such as would be found affecting both the experimental and control group (Campbell and Stanley, 1963).

A source of internal validity of this design is interactions involving maturation. Any effort to explain a pretest-posttest gain specific to the experimental group in terms of extraneous factors like history, maturation, or testing, must hypothesize an interaction between these variables and the specific selection differences that distinguish the groups (Campbell and Stanley, 1963).

The sources of external invalidity are concerned with the interaction of testing and X, selection and X, and reactive arrangements. It is possible that the experimental effect may be specific to the populations that are repeatedly tested. The selection and X interaction points to the possibility that the effects of the experimental variable may be specific to this particular sample and that the naturally occurring population may not have been as responsive to some more general universe of interest. Thus, meaning that this may be a biased sample. Further considerations should be given to whether the populations for study are reactive in the sense that they are atypical of the universe to which one wants to generalize (Campbell and Stanley, 1963).
For statistical purposes, the three research hypotheses are stated as:

**Hypothesis 1:**

\[ H_1 = \mu_1 < \mu_2 \]

**Hypothesis 2:**

\[ H_1 = \mu_1 > \mu_2 \]

**Hypothesis 3:**

\[ H_1 = \mu_1 > \mu_2 \]

Statistical tests of significance for the research hypothesis involved one-way analysis of variance and the t-test (See Figure 1).

The effects of the independent variable, age and pretest scores were used as covariates to control for any imbalances between the groups.

**Assigned Variables**

The assigned variables in this study were age and pretest scores. The need for controlling for age was established both for the Type A/B classification and the theory of self actualization. Because of the restriction of having to use available intact classes, pretest scores were necessary to increase the likelihood that the groups were the same.

**Research Hypotheses and Statistical Methods**

The research hypotheses and the statistical methods used to analyze the treatment of the data will be the following.

**Hypothesis 1.** Before treatment, individuals with Type B behavior pattern will be significantly greater self-actualizers and more flexible than Type A individuals on pretest measures of the POI and the CPI.
## Treatments

<table>
<thead>
<tr>
<th>Group I</th>
<th>Group II</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intervention Model</strong></td>
<td><strong>Control</strong></td>
</tr>
</tbody>
</table>

### Hypothesis 1

1. $X_1 X_2 X_3$
2. $X_1 X_2 X_3$

### Hypothesis 2 (T-Test)

1. $Y X_3$
2. $Y X_3$

### Hypothesis 3

1. $X_1 X_2 X_3 Y$
2. $X_1 X_2 X_3 Y$

---

$X_1 =$ Pretest Scores  
$(H_1 T_C, H_2 I, H_3 Fx)$  
$X_2 =$ Type A or B  
$X_3 =$ Age  
$Y =$ Posttest Scores  
$(H_1 T_C, H_2 I, H_3 Fx)$

---

**Figure 1.** One-Way Analysis of Variance Paradigm and Student's T-Test
To test this hypothesis the one-way analysis of variance was used. This test was used since more than two means were to be tested for significance. The dispersion among the means is then compared with the dispersion within the classifications. If the former variance is found to be greater than the latter, the classification represents different populations. The F value determines whether the ratio of the two variances could be attributed to chance (Kerlinger, 1973).

Age was included as a control variable as a result of research findings related to Type A/B behavior and self-actualization. In the development of the JAS, Jenkins (1979) found no Type A correlation with age at intake for men in the WCGS between the ages of 39 and 59. However, when the age range was broadened to include persons as young as 20-25 years, a modest inverse correlation with age has been observed. Age, then, does not seem to be a biasing factor except for study populations that include a wide range of ages including young people.

Most of Maslow's (1970) self-actualizers were found to be over the age of 50 years. Though he attempted to study self-actualization among college students, he found actualizers were represented by less than one percent of the population. However, Loevinger (1976) believes that self-actualization may occur at any age and that Maslow's designated self-actualizers as limited to older individuals, is a weakness of his theory.

**Hypothesis 2.** After intervention, individuals in the experimental group will show a greater increase in self-actualization and flexibility than individuals in the control group by comparison of pre-and posttest measures of the POI and CPI.
Student's t-test was used to test this hypothesis. The "t" is generally applicable to a normally distributed random variable where the mean is known and the population variance is estimated from the sample. The observations (before and after test scores) were paired to reduce extraneous influences on the variable being measured. Thus, pairing reduces the effect of subject-to-subject reliability. The correlation between the paired samples, $X_1$ and $X_2$, must be positive in order for the pairing to be effective. A two-tailed test is called for when the assumption is made that the means are not equal (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975).

A further analysis of variance was performed to compare the differences between the experimental and control groups on posttest scores by group while covarying for age.

**Hypothesis 3.** After intervention, Type A's and Type B's in the experimental group will show a significant increase in self-actualization and flexibility as compared to Type A's and B's in the control group. This change will be measured by comparing pre-and posttest scores of the POI and CPI.

A one-way analysis of variance was performed for posttest scores by Type with age and pretest scores as covariates (for explanation see Hypothesis 1).

The POI, Type, and CPI test scores are operationally defined as follows: The two POI scales used were the Time-Competence($T_C$) and Inner-Directedness($I$) scales. A standard mean found on the profile is 50 with a standard deviation of 10 points. Low scores are designated as below 50.
and high as 60 or above on both of these scales. An extreme high score may indicate faking by someone who has knowledge of the theory. Most self-actualizers were found to score between 50 and 56 on both scales.

The CPI scale used was Flexibility (Fx). A standard mean of 50 is represented on the profile with a standard deviation of 10. High scorers (60 or above) are seen as more flexible. Low scorers (40 or below) are seen as rigid and unable to adapt to change.

The Type A scale of the JAS was used to classify Type A's and B's. In order to increase the accuracy of this classification, only the top 30 percent of the subjects (70th percentile and above) were considered to be Type A's. Likewise, the lower 30 percent (30th percentile and below) were considered to be Type B's.

All statistical procedures used to test hypotheses employed the ANOVA and T-Test subprograms of the Statistical Package for the Social Sciences (SPSS), Second Edition (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975). The William and Mary computer, IBM 370, Model 158, was used to process all statistical information. All the hypotheses were tested at the .05 level.

Summary

An intervention program was designed to increase the self-actualization and flexibility of treated subjects. The subjects who received the treatment were women enrolled in General 199-WAS. Women enrolled in General 100-Orientation served as the control group.

The study was conducted during a 10-week quarter with all subjects receiving both pre- and posttests at the beginning and completion of the
quarter. The data collecting procedures were fully explained to the subjects, their written agreement to participate obtained, and each individual's test scores were returned and interpreted.

Three instruments were administered for assessment purposes, namely, the JAS, POI, and CPI. An analysis of the data was made in terms of each hypothesis.
Chapter 4

Results

The results of this investigation are presented in this chapter by hypotheses. Statistical findings will be reviewed and interpreted for each hypothesis, while redundant explanations of procedures will be avoided. The frequency distributions and descriptive statistics of the population by age are found in Appendix C.

Hypothesis 1

Before treatment, individuals in experimental and control groups with Type B behavior pattern will be significantly greater self-actualizers and more flexible than Type A individuals on pretest measures of the POI AND CPI.

One-way analysis of variance resulted in finding no significant difference between Type B's and Type A's on measures of self-actualization (Tq and I scores) and flexibility. Each pretest score was classified according to type while covarying for age. The means for each analysis by type are found in Appendix E. Presented in Tables 1, 2, and 3 is the relevant information on each analysis of variance.

No difference was found in Pretest Tq scores for A's or B's, F = (1,37) = 1.483 p<0.231. Table 1 also includes Beta values of 0.19 indicating 81% of the variance was explained by Type after age was taken out. Age appears to make no difference.

No difference was found in pretest I scores for A's and B's, F = (1,37) = 0.217 p<0.644. After adjustments for Type, the Beta value of 0.08 indicated that 92% of the variance was explained by Type after
### Table 1

Hypothesis 1--One-Way Analysis of Variance for Pretest Time Competence Scores by Type Covarying for Age

<table>
<thead>
<tr>
<th>Source of variance</th>
<th>Sum of squares</th>
<th>Degree of freedom</th>
<th>Mean square</th>
<th>F</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>285.797</td>
<td>1</td>
<td>285.797</td>
<td>1.552</td>
<td>0.221</td>
</tr>
<tr>
<td>Within</td>
<td>6813.457</td>
<td>37</td>
<td>184.147</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between</td>
<td>273.109</td>
<td>1</td>
<td>273.109</td>
<td>1.483</td>
<td>0.231</td>
</tr>
<tr>
<td>Interaction</td>
<td>558.910</td>
<td>2</td>
<td>279.455</td>
<td>1.518</td>
<td>0.233</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Covariate</th>
<th>Raw regression coefficient</th>
<th>Beta values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>0.274</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td></td>
<td>0.19</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) Amount of variation removed by covariates.

\(^b\) Main effects.
Table 2
Hypothesis 1--One-Way Analysis of Variance for Pretest Inner-Directedness Scores by Type Covarying for Age

<table>
<thead>
<tr>
<th>Source of variance</th>
<th>Sum of squares</th>
<th>Degree of freedom</th>
<th>Mean square</th>
<th>F</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression^a</td>
<td>36.998</td>
<td>1</td>
<td>36.998</td>
<td>0.436</td>
<td>0.513</td>
</tr>
<tr>
<td>Within</td>
<td>3136.502</td>
<td>37</td>
<td>84.770</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between^b</td>
<td>18.395</td>
<td>1</td>
<td>18.395</td>
<td>0.217</td>
<td>0.644</td>
</tr>
<tr>
<td>Interaction</td>
<td>55.393</td>
<td>2</td>
<td>27.697</td>
<td>0.327</td>
<td>0.723</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Covariate</th>
<th>Raw regression coefficient</th>
<th>Beta values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>0.098</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>0.08</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

^a Amount of variation removed by covariates.
^b Main effects.
Table 3
Hypothesis 1--One-Way Analysis of Variance for Pretest Flexibility Scores by Type Covarying for Age

<table>
<thead>
<tr>
<th>Source of variance</th>
<th>Sum of squares</th>
<th>Degree of freedom</th>
<th>Mean square</th>
<th>F</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>289.174</td>
<td>1</td>
<td>289.174</td>
<td>1.972</td>
<td>0.169</td>
</tr>
<tr>
<td>Within</td>
<td>5426.688</td>
<td>37</td>
<td>146.667</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between</td>
<td>334.089</td>
<td>1</td>
<td>334.089</td>
<td>2.278</td>
<td>0.140</td>
</tr>
<tr>
<td>Interaction</td>
<td>623.266</td>
<td>2</td>
<td>311.633</td>
<td>2.125</td>
<td>0.134</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Covariate</th>
<th>Raw regression coefficient</th>
<th>Beta values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>0.275</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td></td>
<td>0.24</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[a\text{Amount of variation removed by covariates.}\]
\[b\text{Main effects.}\]
age was taken out.

No difference was found in pretest Fx scores for A's or B's, $F(1, 37) = -2.278 \ p < 0.140$. The Beta value of 0.24 indicated that 76% of the variance was accounted for after age was removed.

The above three analyses found that there was no difference in A's and B's on pretest $T_c$, I, or Fx scores. Also, age did not make a difference in the variance. The hypothesis was rejected at the .05 level.

**Hypothesis 2**

After intervention, there will be a significant difference between the experimental group and the control group which is indicative of increased self-actualization and flexibility.

This hypothesis dealt with group change in self-actualization ($T_c$ and I scores) and flexibility (Fx score). Samples were paired on pretest-posttest variables for both the experimental and control groups separately then compared with the total group scores.

A t-test was performed for all groups and the statistical results can be found in Tables 4, 5, and 6. Pre- and posttest comparisons for the experimental group revealed no significance for $T_c$, I, or Fx scores, representing the following t-values according to scores:

- Pre-$T_c$/ Post-$T_c$ = t-value $-0.51 \ (p < 0.611)$.
- Pre-I/ Post-I = t-value $-0.67 \ (p < 0.507)$.
- Pre-Fx/ Post-Fx = t-value $-0.90 \ (p < 0.376)$. 
Table 4

Hypothesis 2—T-Test for Difference between Experimental Group
Pretest-Posttest Scores on Time-Competence, Inner-Directedness, and Flexibility

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of Cases</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>(Difference) Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Tc</td>
<td>30</td>
<td>41.8667</td>
<td>11.924</td>
<td>-0.7333</td>
</tr>
<tr>
<td>Post-Tc</td>
<td></td>
<td>42.6000</td>
<td>11.257</td>
<td></td>
</tr>
<tr>
<td>Pre-I</td>
<td>30</td>
<td>45.5333</td>
<td>8.780</td>
<td>-1.3000</td>
</tr>
<tr>
<td>Post-I</td>
<td></td>
<td>46.8333</td>
<td>11.064</td>
<td></td>
</tr>
<tr>
<td>Pre-Fx</td>
<td>30</td>
<td>51.6000</td>
<td>12.417</td>
<td>1.8000</td>
</tr>
<tr>
<td>Post-Fx</td>
<td></td>
<td>49.8000</td>
<td>13.063</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of Cases</th>
<th>T Value</th>
<th>Degrees of Freedom</th>
<th>2-Tail Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Tc</td>
<td>30</td>
<td>-0.51</td>
<td>29</td>
<td>0.611</td>
</tr>
<tr>
<td>Post-Tc</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-I</td>
<td>30</td>
<td>-0.67</td>
<td>29</td>
<td>0.507</td>
</tr>
<tr>
<td>Post-I</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Fx</td>
<td>30</td>
<td>0.90</td>
<td>29</td>
<td>0.376</td>
</tr>
<tr>
<td>Post-Fx</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 5
Hypothesis 2—T-Test for Difference between Control Group
Pretest-Posttest Scores on Time-Competence,
Inner-Directedness, and Flexibility

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of Cases</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>(Difference) Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Tc</td>
<td>37</td>
<td>39.9459</td>
<td>14.116</td>
<td>-2.6216</td>
</tr>
<tr>
<td>Post-Tc</td>
<td></td>
<td>42.5676</td>
<td>13.656</td>
<td></td>
</tr>
<tr>
<td>Pre-I</td>
<td>37</td>
<td>43.9459</td>
<td>9.899</td>
<td>-1.5405</td>
</tr>
<tr>
<td>Post-I</td>
<td></td>
<td>45.4865</td>
<td>12.242</td>
<td></td>
</tr>
<tr>
<td>Pre-Fx</td>
<td>37</td>
<td>51.5676</td>
<td>11.112</td>
<td>0.7568</td>
</tr>
<tr>
<td>Post-Fx</td>
<td></td>
<td>50.8108</td>
<td>10.085</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of Cases</th>
<th>T Value</th>
<th>Degrees of Freedom</th>
<th>2-Tail Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Tc</td>
<td>37</td>
<td>-1.64</td>
<td>36</td>
<td>0.109</td>
</tr>
<tr>
<td>Post-Tc</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-I</td>
<td>37</td>
<td>-1.01</td>
<td>36</td>
<td>0.321</td>
</tr>
<tr>
<td>Post-I</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Fx</td>
<td>37</td>
<td>0.59</td>
<td>36</td>
<td>0.556</td>
</tr>
<tr>
<td>Post-Fx</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 6
Hypothesis 2—T-Test for Difference between Control Group

Pretest-Posttest Scores on Time-Competence,
Inner-Directedness, and Flexibility

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of Cases</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>(Difference) Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-TC</td>
<td>67</td>
<td>40.8060</td>
<td>13.119</td>
<td>-1.7761</td>
</tr>
<tr>
<td>Post-TC</td>
<td></td>
<td>42.5821</td>
<td>12.546</td>
<td></td>
</tr>
<tr>
<td>Pre-I</td>
<td>67</td>
<td>44.6567</td>
<td>9.378</td>
<td>-1.4328</td>
</tr>
<tr>
<td>Post-I</td>
<td></td>
<td>46.0896</td>
<td>11.662</td>
<td></td>
</tr>
<tr>
<td>Pre-Fx</td>
<td>67</td>
<td>51.5821</td>
<td>11.623</td>
<td>1.2239</td>
</tr>
<tr>
<td>Post-Fx</td>
<td></td>
<td>50.3582</td>
<td>11.433</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of Cases</th>
<th>T Value</th>
<th>Degrees of Freedom</th>
<th>2-Tail Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-TC</td>
<td>67</td>
<td>-1.63</td>
<td>66</td>
<td>0.107</td>
</tr>
<tr>
<td>Post-TC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-I</td>
<td>67</td>
<td>-1.19</td>
<td>66</td>
<td>0.237</td>
</tr>
<tr>
<td>Post-I</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Fx</td>
<td>67</td>
<td>1.08</td>
<td>66</td>
<td>0.283</td>
</tr>
<tr>
<td>Post-Fx</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Thus, the experimental groups did not evidence change in self-actualization or flexibility as measured by the instruments used.

Likewise, pre- and posttest comparisons were made for the control group. Again, no significant difference was found according to the following t-values:

- \( \text{Pre-}T_C / \text{Post-}T_C = t\text{-value } -1.64 \) (\( p < 0.109 \)).
- \( \text{Pre-}I / \text{Post-}I = t\text{-value } -1.01 \) (\( p < 0.321 \)).
- \( \text{Pre-}Fx / \text{Post-}Fx = t\text{-value } 0.59 \) (\( p < 0.556 \)).

The results indicated that little change was found in the scores of the control group after intervention.

The entire population was also analyzed in order to determine if change occurred. No significance was found according to the following t-values:

- \( \text{Pre-}T_p / \text{Post-}T_p = t\text{-value } -1.63 \) (\( p < 0.107 \)).
- \( \text{Pre-}I / \text{Post-}I = t\text{-value } -1.19 \) (\( p < 0.237 \)).
- \( \text{Pre-}Fx / \text{Post-}Fx = t\text{-value } 1.08 \) (\( p < 0.283 \)).

The lack of a total population change as well as group change, indicates that the intervention made no difference on these variables. The hypothesis was rejected at the .05 level.

**Hypothesis 3**

Type A's and Type B's will show a significant increase in self-actualization and flexibility after intervention.

One-way analysis of variance with age and pretest scores as covariates, resulted in no significant difference between Type A's and B's in scores after intervention. Presented in Tables 7, 8, and 9 is
Table 7

Hypothesis 3--One-Way Analysis of Variance for Post-Time-Competence Scores by Type Covarying for Age and Pre-Time-Competence

<table>
<thead>
<tr>
<th>Source of variance</th>
<th>Sum of squares</th>
<th>Degree of freedom</th>
<th>Mean square</th>
<th>F</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>4025.770</td>
<td>2</td>
<td>2012.885</td>
<td>31.829</td>
<td>0.000</td>
</tr>
<tr>
<td>Within</td>
<td>2276.666</td>
<td>36</td>
<td>63.241</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between</td>
<td>2.904</td>
<td>1</td>
<td>2.904</td>
<td>0.046</td>
<td>0.832</td>
</tr>
<tr>
<td>Interaction</td>
<td>4028.674</td>
<td>3</td>
<td>1342.891</td>
<td>21.235</td>
<td>0.000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Covariate</th>
<th>Raw regression coefficient</th>
<th>Beta values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>0.135</td>
<td></td>
</tr>
<tr>
<td>Pre-Tc</td>
<td>0.714</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td></td>
<td>0.02</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) Amount of variation removed by covariates.
\(^b\) Main effects.
Table 8
Hypothesis 3—One-Way Analysis of Variance for Post-Inner-Directedness Scores by Type with Age and Pre-Inner-Directedness Scores as Covariates

<table>
<thead>
<tr>
<th>Source of variance</th>
<th>Sum of squares</th>
<th>Degree of freedom</th>
<th>Mean square</th>
<th>F</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>2123.266</td>
<td>2</td>
<td>1061.633</td>
<td>16.751</td>
<td>0.000</td>
</tr>
<tr>
<td>Within</td>
<td>2281.569</td>
<td>36</td>
<td>63.377</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between</td>
<td>62.247</td>
<td>1</td>
<td>62.247</td>
<td>0.982</td>
<td>0.328</td>
</tr>
<tr>
<td>Interaction</td>
<td>2185.513</td>
<td>3</td>
<td>728.504</td>
<td>11.495</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Covariate                  Raw regression coefficient  Beta values
---                         -----------------  ------------------
Age                        -0.003
Pre-I                      0.816

Type                       0.12
  1
  2

^Amount of variation removed by covariates.
^Main effects.
Table 9
Hypothesis 3—One-Way Analysis of Variance for Post-Flexibility Scores by Type with Age and Pre-Flexibility Scores as Covariates

<table>
<thead>
<tr>
<th>Source of variance</th>
<th>Sum of squares</th>
<th>Degree of freedom</th>
<th>Mean square</th>
<th>F</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>1891.899</td>
<td>2</td>
<td>945.949</td>
<td>10.624</td>
<td>0.000</td>
</tr>
<tr>
<td>Within</td>
<td>3205.483</td>
<td>36</td>
<td>89.041</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between</td>
<td>19.692</td>
<td>1</td>
<td>19.692</td>
<td>0.221</td>
<td>0.641</td>
</tr>
<tr>
<td>Interaction</td>
<td>1911.591</td>
<td>3</td>
<td>637.197</td>
<td>7.156</td>
<td>0.001</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Covariate</th>
<th>Raw regression coefficient</th>
<th>Beta values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>0.058</td>
<td></td>
</tr>
<tr>
<td>Pre-Fx</td>
<td>0.547</td>
<td></td>
</tr>
</tbody>
</table>

Type

1
2

a Amount of variation removed by covariates.
b Main effects.
the relevant data on each analysis of variance.

Separate analyses were conducted in order to determine the effects of the intervention on posttest scores by type. Type with age and pretest scores as covariants yielded the following results:

Post-Tc for A's and B's, $F(1,36) = 0.046 < 0.832$.
Post-I for A's and B's, $F(1,36) = 0.982 < 0.328$.
Post-Fx for A's and B's, $F(1,36) = 0.221 < 0.641$.

The Beta values of 0.02, 0.12, and 0.06 respectively, added no statistical clarity to the analysis (see Tables 7, 8, and 9). It can be concluded that there was no difference between the posttest scores of A's and B's due to the intervention. Neither age nor comparing posttest scores to pretest scores contributed to the variance. Thus, the hypothesis was rejected at the .05 level.

Further Analysis

A further analysis was conducted to determine whether posttest scores were effected by group with age and pretest scores as covariates (Tables 10, 11, and 12). This analysis was included in order to observe group change differences regardless of type. The analysis by group yielded the following results:

Post-Tc for group, $F(1,36) = 0.421 < 0.519$.
Post-I for group, $F(1,36) = 0.021 < 0.885$.
Post-Fx for group, $F(1,36) = 0.598 < 0.598$.

It was concluded that there was no group difference between the posttest and pretest scores due to the intervention. Age did not seem to have an influence on the variance of scores. Thus, no significant difference was found at the .05 level.
Table 10
Hypothesis 3—One-Way Analysis of Variance for Posttest $T_C$ Scores by Group with Age and Pretest $T_C$ Scores as Covariates

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>Degree of Freedom</th>
<th>Mean Square</th>
<th>$F$</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression$^a$</td>
<td>6012.281</td>
<td>2</td>
<td>3006.141</td>
<td>43.568</td>
<td>0.0</td>
</tr>
<tr>
<td>Within</td>
<td>4346.914</td>
<td>63</td>
<td>68.999</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between$^b$</td>
<td>29.029</td>
<td>1</td>
<td>29.029</td>
<td>0.421</td>
<td>0.519</td>
</tr>
<tr>
<td>Interaction</td>
<td>6041.3.3</td>
<td>3</td>
<td>2013.771</td>
<td>29.186</td>
<td>0.000</td>
</tr>
</tbody>
</table>

$^a$ Amount of variance removed by covariates.
$^b$ Main effects of treatment.
Table 11
Hypothesis 3—One-Way Analysis of Variance for Posttest I Scores by Group with Age and Pretest I Scores as Covariates

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of squares</th>
<th>Degree of freedom</th>
<th>Mean square</th>
<th>F</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression^a</td>
<td>3062.645</td>
<td>2</td>
<td>1531.322</td>
<td>16.322</td>
<td>0.000</td>
</tr>
<tr>
<td>Within</td>
<td>5910.785</td>
<td>63</td>
<td>93.822</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between^b</td>
<td>1.964</td>
<td>1</td>
<td>1.964</td>
<td>0.021</td>
<td>0.885</td>
</tr>
<tr>
<td>Interaction</td>
<td>3064.609</td>
<td>3</td>
<td>1021.536</td>
<td>10.888</td>
<td>0.000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Covariate</th>
<th>Raw Regression coefficients</th>
<th>Beta values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>0.067</td>
<td></td>
</tr>
<tr>
<td>Pre-I</td>
<td>0.711</td>
<td></td>
</tr>
<tr>
<td>Group</td>
<td></td>
<td>0.01</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

^aAmount of variance removed by covariates.
^bMain effects of treatment.
<table>
<thead>
<tr>
<th>Source of variance</th>
<th>Sum of squares</th>
<th>Degree of freedom</th>
<th>Mean square</th>
<th>F</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression*</td>
<td>3969.862</td>
<td>2</td>
<td>1984.931</td>
<td>26.969</td>
<td>0.000</td>
</tr>
<tr>
<td>Within</td>
<td>4636.820</td>
<td>63</td>
<td>73.600</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between</td>
<td>20.628</td>
<td>1</td>
<td>20.628</td>
<td>0.280</td>
<td>0.598</td>
</tr>
<tr>
<td>Interaction</td>
<td>3990.492</td>
<td>3</td>
<td>1330.164</td>
<td>18.073</td>
<td>0.000</td>
</tr>
</tbody>
</table>

### Covariate

<table>
<thead>
<tr>
<th>Covariate</th>
<th>Raw Regression coefficient</th>
<th>Beta values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-0.043</td>
<td></td>
</tr>
<tr>
<td>Pre-Fx</td>
<td>0.670</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
</tbody>
</table>

*aAmount of variance removed by covariates.

bMain effects of treatment.
Chapter 5

Summary, Conclusions, Limitations, and Recommendations

Chapter five presents a summary of the study and interpretation of the results with conclusions and implications according to hypotheses. In addition, limitations of the study will be noted, followed by recommendations for further study.

Summary

Self-help materials are readily available to the general public as to how to take care of their health both physically and mentally. Though people are showing a more active concern for their health via consumer sales of products, i.e., vitamins, health foods, it is questionable as to whether these products and self-help materials are making a difference in disease control. The facts remain that the top diseases that kill millions of Americans each year, e.g., heart disease, cancer, and stroke, have not been eradicated.

The medical professions continue to raise their health care costs partially due to the population ratio of health specialists to the needs of the consumers. Preventive medicine has been advocated by various professional practitioners, i.e., wellness center, but few people seem to have the resources, either monetary or educational background, to learn adequate self-health care. But even if such resources were available, just being able to change old established habits, i.e., eating, drinking, smoking, or exercising, are difficult for most people without additional help from trained professionals in this area.

Recently, many psychological factors have been related to the incidence of some diseases. This discovery has gained such interest
that psychosomatic medicine was formed to study the relationship between mental and physical functioning of the human being.

As a result of studying the interaction between the mental and physical aspects of coronary heart disease patients, Rosenman and Friedman discovered the Type A/B behavior pattern. With CHD as the number one killer, this insight into a possible personality structure led researchers to study this pattern more closely. Since cardiologists generally lack a knowledge of personality factors, a multidiscipline approach toward the Type A pattern has resulted in research in many fields, i.e., psychology, education, sociology.

Many forms of intervention have been tried with Type A's, i.e., biofeedback, relaxation training, group therapy. But it has been suggested that perhaps not enough is known about the Type A behavior pattern as to all the psychological factors involved. Even less is known about the Type B personality pattern except that the individual is devoid of most of the Type A traits.

The methods of identifying Type A's have centered around the use of a structured interview and one main paper and pencil instrument, the Jenkins Activity Survey. Various other measures have been developed as well as other personality tests have been used with heart disease patients. Identifying Type A individuals and developing a theoretical base which will fully describe this pattern are still in the embryonic stages.

Rosenman(1979) suggested that the humanistic psychology approach
to intervention may be effective with some Type A's. A dearth of information concerning this approach exists at this time. He also proposed that perhaps Type A's, while they have the basic characteristics in common, may also differ according to their educational level, socioeconomic background, and many other factors. With this in mind, it may be important to have several forms of therapy available according to the needs of the Type A population. It would also be advantageous to study Type B individuals more closely as models for Type A's.

Abraham Maslow studied individuals who he believed to be greater self-actualizers than the normal population. According to his theory, everyone has the innate ability and desire to be what he/she can fully become but few are able to achieve this level. To function on the self-actualization level is to strive for good mental, physical, and spiritual health. This concept runs contrary to the destructive habits and patterns of the Type A individual.

This study has attempted to measure self-actualization and flexibility in Type A/B subjects in two groups. Female students attending Thomas Nelson Community College and enrolled in the Women's Awareness Seminar comprised the experimental group (N=30), while female students enrolled in Orientation composed the control group (N=37).

In addition to research questions concerning self-actualization and flexibility, age was used as a control variable. Subjects were classified as to Type A or Type B, and it was hypothesized that B's would be greater actualizers than A's. Age was considered to be related to both Type A behavior and self-actualization.
Subjects were administered the POI (T_C and I scales) and the CPI (Fx) scale as pretest and posttest measures. The JAS was administered as a pretest only. Treatment consisted of one three-hour class meeting per week or two one-and-one-half hour class meetings per week for ten weeks during the winter of 1980. Subjects' treatment included: (a) assignment of 12 chapters of Women as Winners (Jongeward and Scott, 1978), (b) experiential participation in class, (c) written homework and (d) lectures on psychological types, stress theory, relaxation techniques, and health awareness.

This study used a Compromise Experimental Group-Control Group Design, indicating the preclusion of experimental random sampling. This pre- and posttest design required treatment for the experimental group and no treatment for the control group. Participants were made aware that participation, not performance, on the pre- and posttest evaluative instruments was a key element in the grading procedure.

Statistical treatment of the data consisted of one-way analysis of variance with age as a covariate for pretest differences between Type A's and B's. A t-test was performed to determine group changes after intervention. And a one-way analysis of variance by Type and group with age and pretest scores as covariates, analyzed changes in self-actualization and flexibility of A's and B's as a result of intervention. The hypotheses were tested using the .05 level of significance.
Conclusions

Conclusions concerning the efficacy of the treatment model will be presented in this section by hypothesis.

Hypothesis 1

The research hypothesis that before treatment, individuals with Type B behavior pattern will be greater self-actualizers and more flexible than Type A individuals was rejected. All subjects were classified as either Type A, B, or indeterminant on the basis of scores on the Type A scale of the JAS. The top 30 percent were designated as Type A's and the lower 30 percent as Type B's. Since it is more difficult to adequately classify the indeterminants as A or B, they were not included in testing this hypothesis. Values of $F$ in a one-way analysis of variance with age as a covariate, found no difference between A's and B's on pretest measures of self-actualization and flexibility. The covariate age accounted for no meaningful variance in this analysis.

Hypothesis 2

This hypothesis sought to prove the effectiveness of the treatment on moving the experimental subjects toward greater self-actualization and flexibility. $T_C$, $I$, and $F_x$ scores were calculated for all subjects both before and after treatment. Values of $t$ in a $t$-test analysis found no significant difference between groups on pre- and posttest measures. Thus, the hypothesis was rejected at the .05 level.

Further analysis was performed to test whether experimental and control groups differed by group with age and pretest scores as co-
variates. A one-way analysis of variance found $F$ values which revealed no difference between the groups after intervention. Neither age nor pretest measures contributed significantly to the variance.

**Hypothesis 3**

This hypothesis predicted that after intervention, Type A's would be significantly greater self-actualizers and more flexible than B's. A one-way analysis by Type with age and pretest scores as covariates was performed to determine the effectiveness of the treatment. Values of $F$ indicated no significant difference between A's and B's on pre- and posttest measures after intervention. Neither age nor pretest scores contributed significantly to the variance. The hypothesis was rejected at the .05 level.

**Limitations**

One major limitation of the study was the educational setting in which the investigation was conducted. Randomization of participants into experimental and control groups was impossible due to the fact that Women's Awareness and Orientation classes were offered for credit. The lack of randomization becomes a serious deterrent to research when the size of the experimental and control groups are controlled by the number of subjects registering for the classes and the researcher cannot make his/her own subject selection. Since subjects self-selected into the classes, generalizations cannot be made that the subjects were representative of the TNCC population as a whole or other community college women.
A second limitation is the fact that the investigator was the cofacilitator of one experimental group and the lecturer in the other experimental group. While the investigative parameters of the study and the attempts to standardize the treatment reduced the possibility of intentional bias by this researcher, the possibility remains that the responses of both participants and researcher were inadvertently affected.

A third limitation is the rate of absenteeism and attrition among the subjects in the experimental groups. This seems to be a general problem with TNCC's student population. Since the experimental group was largely experiential in nature, it was difficult to keep continuity of exercises and other activities, i.e., support groups, from one class meeting to the next.

A fourth limitation was the lack of a precise classification of individuals as either Type A or B. The Jenkins Activity Survey is considered to be the best paper and pencil measure of Type A behavior but as was mentioned in the literature review in Chapter 2, the instrument has some deficiencies when used as a sole means for classification.

A further limitation was the question of whether a pretest-post-test experimental/control group design should have been implemented. It may have been more appropriate to do a descriptive study of Type A behavior without adding an intervention. Several other psychological instruments could have been included to investigate the dimensions of the behavior type. At this time, interventions may not be
as important as clarifying additional ways of identifying Type A's and B's.

**Recommendations**

In light of the limitations, the following recommendations are offered for further study:

1. Efforts should be made to randomize the groups.

2. The WAS could be offered as a non-credit experiential group where individual growth is emphasized. With the credit requirement removed, the subjects may have more similarity of purpose for taking the seminar and be more motivated to attend.

3. Subjects should be screened prior to the group for such factors as reading level and purposes for desiring to enroll in the class.

4. The classification of individuals as Type A or Type B would be more valid if the structured interview was used in conjunction with the JAS.

5. Student grades should probably be included as a covariate since this was a graded course.

6. The literature reinforces the need for controlling for age in both Type A classification and measurement of self-actualization. Age may not have been an important variable in this population or study but should be included in future studies of this type.

7. The concept of self-actualization could be considered an elitist construct. Maslow estimated that less than one percent of the population were self-actualizers. If all other needs must be satisfied before one realizes the higher needs, this concept may not only belong to a certain group of people, but also to a certain group of A's or B's. A larger
population as well as a more varied population may find results unlike this study.

8. More research is needed concerning the personality factors of Type A and Type B individuals. Descriptive studies are needed.

9. The intervention model developed by the researcher could be tried with only Type A or only Type B individuals. Further, the intervention could be used with patients who have already experienced heart disease in a cardiac rehabilitation program provided that similarity of age, educational levels, and socioeconomic status are considered.

10. Many other variables need to be investigated which may affect the subject's during the intervention period, i.e., marital status, occupation, or educational level.
Appendix A

Class Syllabus and Handouts

Summary of Intervention Models

After an introduction to the purpose of the women's awareness seminar in general and to the study in particular, each class member received a class syllabus and a form stating their willingness to participate in the study. Treatment included discussions of the required readings in Women as Winners (Jongeward and Scott, 1978), which is designed to help develop self-awareness and personal growth. Class assignments included chapters 1 through 12 with other readings required from an additional reading list and personally selected magazine articles on women's issues.

The subjects participated in experiential exercises designed to increase their knowledge about themselves and others. They were encouraged to focus on their own strengths and those of others rather than weaknesses. The initial introduction to this was the strengths poster which they displayed the second class meeting with a listing of their own identified strengths at that point. Other class members contributed their own initial observations and impressions of each member by writing on each poster. This poster was brought back to class for the last meeting and additional strengths were added. The poster represented an unofficial indication of personal growth and support from the group. Focusing on the strengths of each member and how they could use those strengths in times of crises and problem solving, was the theme throughout the quarter.

The subjects were given handouts listing Maslow's needs hierarchy and it was explained how the needs theory operates in their personal and work lives. They were then asked to identify where they were on the hierarchy most of the time via a structured exercise. Clarifying their own needs and values represented a first step towards growth and was a recurring theme.

The subjects were shown films narrated by women which specifically dealt with women's issues regarding different lifestyles, e.g., working women vs. non-working women. The influence that a particular lifestyle has on health was included as well as the attitudes that may stereotypically keep women from meeting their needs. Breaking down the stereotypes and accepting others, in and out of their class, was emphasized.

The subjects completed a questionnaire which indicated the number of life changes they had experienced within the last year and a symptoms checklist to identify any stress-related physical problems. They received lectures on psychological types and illness, Selye's stress theory (General Adaptation Syndrome), and high level wellness. Further discussions and structured exercises provided the subjects the opportunity to identify more specifically their own possible genetic predisposition toward certain illnesses. Additional books, articles, tapes, and relaxation methods were introduced to provide resources for them to learn ways to change habits that may be destructive to them at the present as well as in the future.

The subjects formed support groups of three or four members, then
completed an exercise designed to identify goal setting techniques. The exercise had two purposes: (1) to provide support for the members in a small intimate group where they could share a major goal, and (2) to introduce them to the process of goal-setting.

To summarize the treatment, the subjects received the following: (a) assignment of 12 chapters of *Women as Winners*, (b) structured exercises to develop an awareness of needs, values, and strengths, (c) films and additional readings on women's issues, (d) lectures, tapes, additional readings, and exercises on the relationship between stress, illness, and optimum health, and (e) the formation of support groups as an aid to goal-setting and implementation of those goals.
Class Syllabus

Course Number: General 199-01 and 199-61

Course Title: Women's Awareness Seminar (3 credits)

Course Description

An experiential group approach to facilitate personal effectiveness. Emphasis is on those behavior traits generally characterized as necessary for developing potential or being self-actualizing. These characteristics are: self-awareness, values clarification, communication and feedback, improved interpersonal relationships, independence, decisiveness, active, rather than passive behavior, self-confidence and willingness to risk, and taking responsibility for physical well-being. The course is open to all students.

Course Objectives

The instructor-facilitator will assist students in:

1. Developing an understanding of their values and how these relate to self-awareness.
2. Utilizing goal-setting and decision making skills.
3. Relating view of self to development of potential.
4. Contingency planning for the future.
5. Improving communication in interpersonal relationships.
6. Developing a holistic approach to health.

Student Behaviors

By the end of the ten-week course, the student will:

1. Discuss their needs and expectations and describe how some of their needs can be met.
2. Demonstrate a knowledge of the literature which will aid them in taking more responsibility for their own health care.
3. Clarify personal values.
4. List ways to resolve conflict situations.
5. Determine goals and structure goal-setting.
6. Further develop communication skills.
7. Distinguish between assertive behavior and aggressive behavior.

8. Define career expectations.

9. Demonstrate relaxation techniques.

Level of Performance

Students are encouraged to attend class sessions. Class participa-
tion is encouraged and will affect grades as well as the completion of
all class assignments.

Readings

Women as Winners - Dorothy Jongeward and Dru Scott -- Class Text

Additional Reading List

The Woman's Room - Marilyn French

The Total Woman - Marabel Morgan

Our Bodies, Our Selves - Boston Women's Health Book Collective

If Life is a Bowl of Cherries, Then Why Am I in the Pits - Irma
Bombeck

My Mother, Myself - Nancy Friday

High Level Wellness - Donald Ardell

The Skin Care Book - Jonathan Zizmor

Type A Behavior and Your Heart - Meyer Friedman and Ray Rosenman

Stress Without Distress - Hans Selye

The Natural Way to Super Beauty - Mary Ann Crenshaw

Women and the Crisis in Sex Hormones - Barbara Seaman and Gideon
Seaman

Vitamins and You - Robert Benowicz

Holistic Running - Joel Henning

Mind as Healer, Mind as Slayer - Kenneth Pelletier
Women's Awareness Seminar

Instructors:
Carolyn Hines
Pam D. Turner
Carolyn Glass

Room: #201L
Telephone: 825-2827, 2828
2829, 2830

Week #1

Course Objectives (Description)
Expectations of group members
Strengths poster (self-concept measure)

Assignment: "Who am I and what do I expect to get out of this course"
Short paper

Week #2

Testing

California Psychological Inventory
Personal Orientation Inventory
Strong Campbell
Adjective Checklist
Jenkins Activity Survey for Health Prediction

Explanation of how these instruments mesh with awareness theme and
how the instruments will be used.

Discussion of Assignment

Week #3

Discussion of personal needs: Maslow's Needs Hierarchy
Exercise: Personal Planning--The Use of Time
Discussion of feelings about personal appearance: Dyads

Assignment: Chapter 10 in text and optional articles

Week #4

Update - "Where Are We?"
Values Auction
Discussion of Chapter 10
Discussion of course project and book reports
Exercise: Personal Power and forming support groups
Exercise: Goal Setting

Assignment: Chapter 1 and optional articles
Week #5

Discussion of assignment
Time for support group meetings
Lecture: Selye's Stress Model
Exercise: General Adaptation Syndrome
Exercise: Life Change Index and symptoms checklist
Discussion of G.A.S. and symptoms of stress

Assignment: Chapters 2 and 3

Week #6

Time for support groups
Discussion of assignment
Lecture: Relaxation techniques and process application
Film: Women's Prejudice Film
Coping Mechanisms - Discussion of Passages - Stages of Adult Growth
Exercise: Crises of Grief and Loss Model

Assignment: Chapters 4 and 5 and book report due

Week #7

Discussion of assignment
Presentation of assertiveness vs. aggressiveness
Film: We Are Woman
Lecture: Personality factors and health
Health as related to the work environment
Discussion: Changing destructive habits
Relaxation exercises

Assignment: Chapters 6 and 9. Bring favorite health or diet book next week.

Week #8

Discussion of assignment
Show-and-Tell: Books displayed and explained
Speaker - Patsy Kelly - Women in Supervision
Lecture: Holistic Health (nutrition, exercise, personality factors)
Exercise: Summary Questions - General areas of wellness

Assignment: Chapters 7 and 8. Projects due next week.

Week #9

Discussion of assignment
Time for support groups
Review of wellness and discussion
Exercise: Record Keeping
Discussion of exam and course
Relaxation exercises
Assignment: Chapters 11 and 12

Week #10

Exam
Testing
Strengths poster
Sharing time
"HOW I'M O.K." ACKNOWLEDGEMENT POSTER

STRENGTHS

<table>
<thead>
<tr>
<th>My View of My Strengths</th>
<th>Other's Views of My Strengths</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. How might I make better use of my strengths?

My view:

What others saw:

2. If you are making good use of your strengths in the next few years, what fantasies do you have of what you will be doing or the kind of person you will be?

3. Fantasies others have for me:

"HOW OTHERS ARE OK" IDENTIFYING STRENGTHS IN OTHERS

Strengths I see in

Strengths I see in

Strengths I see in

Strengths I see in

Dr. Eric Berne listed six different ways most people use their time:

**Withdrawals:** Daydreams, self-reflection, planning, creative fantasies.

**Rituals:** Club meetings, bridge on Monday nights, birthdays, anniversaries, graduations, etc.

**Pastimes:** Conversations about day-to-day activities, getting acquainted with people, talking about inflation, discussing working conditions.

**Games:** Persecuting, Rescuing, or being a Victim; or, spending time developing open, honest relationships.

**Activities:** Work, getting the job done, "busy work", time spent expanding personal potentials, e.g., personal growth and learning.

**Intimacy:** Open, honest encounters that may not involve a sexual exchange; authentic relationships.

How did you spend your time yesterday?
How do you spend your time on a typical day?

Are these ways of spending your time helping or stressing you now?

What use of your time would you like to cut down? What would you like to spend more time doing? Now design how you'd like to spend your time.

What can you do to make the changes?

Adapted from Stress Transformation Seminar by Ron Klein, 1979.
5. Self-Actualization Needs

Need to fulfill one's personal capacities
Need to develop one's potential
Need to do what one is best suited to do
Need to grow and expand metaneeds: discover truth
create beauty
produce order
promote justice

4. Esteem Needs

Need for respect
Need for confidence based on good opinions of others
Need for admiration
Need for self-confidence
Need for self-worth
Need for self-acceptance

3. Love and Belonging Needs

Need for friends
Need for companions
Need for a family
Need for identification with a group
Need for intimacy with a member of the opposite sex

2. Safety Needs

Need for security
Need for protection
Need for freedom from danger
Need for order
Need for predictable future

1. Physiological Needs

Need for relief from thirst, hunger
Need for sleep
Need for sex
Need for relief from pain, physiological imbalances

Note: The "actualization needs" imply activity whereas the lower needs imply the fulfillment of a deficit ("need to" vs. "need for").

Maslow's Need Hierarchy Related to Occupation

"In our society there is no single situation which is potentially so capable of giving some satisfactions at all levels of basic needs as is the occupation." -- Ann Roe, *The Psychology of Occupations*, 1956, p. 31.

<table>
<thead>
<tr>
<th>Needs</th>
<th>Work-Related Fulfillments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physiological Needs</td>
<td>Earning money to secure the essentials for living: food, water</td>
</tr>
<tr>
<td>Safety Needs</td>
<td>Shelter: renting an apartment, buying a house</td>
</tr>
<tr>
<td></td>
<td>Fringe benefits: pension, savings</td>
</tr>
<tr>
<td></td>
<td>Clothing</td>
</tr>
<tr>
<td></td>
<td>Personal property: furniture, car</td>
</tr>
<tr>
<td>Love and Belonging Needs</td>
<td>Working with a congenial group</td>
</tr>
<tr>
<td></td>
<td>Being needed and welcomed by peers and superiors</td>
</tr>
<tr>
<td>Esteem Needs</td>
<td>Representing adulthood, independence, and freedom</td>
</tr>
<tr>
<td></td>
<td>Feeling accomplishment, responsibility, and prestige</td>
</tr>
<tr>
<td></td>
<td>Being valued by work associates</td>
</tr>
<tr>
<td>Self-Actualization Needs</td>
<td>Creative behavior</td>
</tr>
<tr>
<td></td>
<td>Use of talents, pursuit of interests</td>
</tr>
<tr>
<td></td>
<td>Productiveness</td>
</tr>
</tbody>
</table>

Maslow's Needs Hierarchy

Name ___________________

Date ___________________

Personal

1. Which need or needs are you working to fulfill at the present?

2. Which need or needs do you have the most problems with in their fulfillment at the present?

3. Where do you get stuck?

4. What are the main sources that prevent you from moving up the needs hierarchy? (examples: family, friends, finances, health.) Be specific.

5. How could you change your present situation?

6. Do you feel that you are "now" a self-actualizing person?

7. Describe one person you know who you believe to be a self-actualizing person. (Name may or may not be added.)

Work

1. Which needs are being fulfilled by your present job?

2. Are there opportunities for self-actualization there? List them.

3. Who or what circumstances are preventing you from moving up the hierarchy?

4. What type of job do you believe could allow you to meet all of the needs on the hierarchy? (This may be your fantasy job.)

5. Describe someone you know who you believe to hold a job where he/she is self-actualizing.

Developed by Carolyn A. Glass, 1980
All human interaction involves power or influence. Within a group mutual power exists to the extent that one member can affect the goal accomplishment of other members. The more cooperative the group, the more influence members exert on one another. Through mutual influence the coordination of member behavior necessary for goal accomplishment is achieved. Leadership has been defined as the use of power to promote the goal accomplishment and maintenance of the group.

\textit{power} = \text{the ability of one person to get others to behave in a particular way or to carry out certain actions.}

\textit{resistance} = \text{the psychological force aroused in a person that keeps her from accepting influence.}

\textit{manipulation} = \text{the shrewd management or control of others, especially in an unfair or dishonest way, for one's own purpose and profit.}

A. Determining Your Personal Goals

Based upon a person's needs, wants, and self-interests.

Because many people work for power they do not need and for goals they do not really want, it is essential that you first be clear about what you want. So, it is essential that a group member is clear about her goals, accepts them as worthwhile, and is willing to enlist the aid of other group members to accomplish them. As an important part of building and keeping trust, it is essential that a group member be honest and accurate in her statements about her personal goals and that she be willing to work openly for their accomplishment.

At this point divide into groups of four. Each person should first state all possible desires, needs, wants, goals, and so on that she might work toward in this group. After everyone has had their say, each should then state which three goals they would like the group to accomplish first. Write these below, indicating the person and the goals. Then go on to the next section.

B. Determining Your Personal Resources

What resources do you bring to the group?

What can you contribute toward the accomplishment of your own goals and the goals of other group members? Discuss this within the group.
(1) Individually, each of you in your group of four should think of all the things you do well, all the things you are proud of having done, all the things for which you feel a sense of accomplishment. List all your positive accomplishments and successes.

(2) Share your lists with one another. Then, with the help of the other three members, examine your past successes to identify the personal strengths you used to achieve them. Make a list of these strengths.

(3) After you have all made your lists of strengths, give one another feedback about additional strengths. Add to each person's list the qualities, skills, and characteristics she has overlooked or undervalued.

(4) Each member should then discuss the question, "What might be keeping me from using all my strengths?" The group helps each person explore the ways in which she can free herself from factors that limit the use of her strengths.

C. Determining Your Needed Coalition

To begin this step, take out the personal goal sheets you composed in Step A. Review your goals and change them in any way you believe appropriate. Then, as a group, look for similarities among your goals. As a group, decide upon the three goals that are in most accord with the personal goals of each member. List them below.

Then review the strengths listed in Step B. Try to determine what resources are needed to accomplish each of the three goals and who has them.

In participating in this exercise, you may experience either the frustration of finding little or no compatibility between your own goals and those of the other group members or the rejection of having your resources overlooked, undervalued, or underused. You may also experience the disappointment of finding that other members are more skillful in making coalitions. It is possible that two members will find themselves in basic disagreement with the other two group members. It is from such
situations that conflicts are born. At this point the group should make such conflicts explicit, bring them out in the open, and be very clear about how they are dealt with. Do not at this point make any formal coalitions among group members. Limit yourself to determining what coalitions are needed. Then go on to the next section.

D. Contracting Help With Your Goals

In planning how resources will be utilized to help achieve a goal, group members often develop formal or informal contracts with one another. The forming of a contract is Step C. In the mobilization of one's power in a group, and it usually includes at least three items: (1) What I want from the group members, (2) What the other group members want from me, and (3) What we exchange so that everyone can accomplish her goals.

Work out formal contracts with other group members and form open coalitions. In doing so, specifically focus on the three items involved in a contract. Write your contracts below so that all members can see and read them. These contracts are a plan for cooperative action among group members to apply their resources in certain ways.

E. Implementing the Contract

Remain in contact with your group members so as to evaluate your progress.

"No wind favors him who has no port."
-Montaigne-

A Creative Problem-Solving Plan

STEP I: Describe the problem in as much detail as possible. How is this problem causing you distress?

STEP II: How would you like the situation or yourself to be different? (The use of the imagination and fantasy is appropriate here.)

STEP III: What strategies have you utilized so far? What has worked and to what extent? What doesn't work?

STEP IV: Are you gaining something by keeping yourself or the situation as is? Is there a positive intention at work? Are your generalizations being supported?
STEP V: What alternatives and options can you create? Don't consider "reality" or consequences during the creative process.

STEP VI: Now, what are you going to do? From your list of options, which are you willing to choose and carry out? (At this point you can write a specific action contract. Use childlike language and the infinitive tense, e.g., to make a new friend.)

STEP VII: Criteria (A) How will you know you've achieved your goal? (B) Who will support your achievement?

STEP VIII: How do you think you will sabotage yourself? You can avoid these sabotaging tactics, can you not?

General Adaptation Syndrome

1. What % of your use of G.A.S. results from threat meanings you assign to events.

2. Are you making decisions when to fight or let be?


5. What is your typical stance when dealing with problems? Helpless or hopeful?

6. What changes can you make?

1. What life experiences are stressful for you?

2. What values are you defending?

3. Is there a common theme?

4. How do you cope now? (withdraw, isolate, vent anger?)

5. List 3 new ways to cope.

Adapted from Stress Transformation Seminar by Ron Klein, 1979.
Life Change Index

If an event has been true for you in the past year or will occur in the near future, copy the number in the left column over to the right column. Then total the points.

<table>
<thead>
<tr>
<th>Event</th>
<th>Scale of Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Death of Spouse</td>
<td>100</td>
</tr>
<tr>
<td>Divorce</td>
<td>73</td>
</tr>
<tr>
<td>Marital Separation</td>
<td>65</td>
</tr>
<tr>
<td>Jail Term</td>
<td>63</td>
</tr>
<tr>
<td>Death of Close Family Member</td>
<td>63</td>
</tr>
<tr>
<td>Personal Injury or Illness</td>
<td>53</td>
</tr>
<tr>
<td>Marriage</td>
<td>50</td>
</tr>
<tr>
<td>Fired at Work</td>
<td>47</td>
</tr>
<tr>
<td>Marital Reconciliation</td>
<td>45</td>
</tr>
<tr>
<td>Retirement</td>
<td>45</td>
</tr>
<tr>
<td>Change in Health of Family Member</td>
<td>44</td>
</tr>
<tr>
<td>Pregnancy</td>
<td>40</td>
</tr>
<tr>
<td>Sex Difficulties</td>
<td>39</td>
</tr>
<tr>
<td>Gain of New Family Member</td>
<td>39</td>
</tr>
<tr>
<td>Business Readjustment</td>
<td>39</td>
</tr>
<tr>
<td>Change in Financial State</td>
<td>38</td>
</tr>
<tr>
<td>Death of Close Friend</td>
<td>37</td>
</tr>
<tr>
<td>Change to Different Line of Work</td>
<td>36</td>
</tr>
<tr>
<td>Change in Number of Arguments with Spouse</td>
<td>35</td>
</tr>
<tr>
<td>Mortgage over $20,000</td>
<td>31</td>
</tr>
<tr>
<td>Foreclosure of Mortgage or Loan</td>
<td>30</td>
</tr>
<tr>
<td>Change in Responsibilities at Work</td>
<td>29</td>
</tr>
<tr>
<td>Son or Daughter Leaving Home</td>
<td>29</td>
</tr>
<tr>
<td>Trouble with In-Laws</td>
<td>29</td>
</tr>
<tr>
<td>Outstanding Personal Achievement</td>
<td>28</td>
</tr>
<tr>
<td>Spouse Begins or Stops Work</td>
<td>26</td>
</tr>
<tr>
<td>Begin or End School</td>
<td>26</td>
</tr>
<tr>
<td>Change in Living Conditions</td>
<td>25</td>
</tr>
<tr>
<td>Revision of Personal Habits</td>
<td>24</td>
</tr>
<tr>
<td>Trouble with Boss</td>
<td>23</td>
</tr>
<tr>
<td>Change in Work Hours or Conditions</td>
<td>20</td>
</tr>
<tr>
<td>Change in Residence</td>
<td>20</td>
</tr>
<tr>
<td>Change in Schools</td>
<td>20</td>
</tr>
<tr>
<td>Change in Recreation</td>
<td>19</td>
</tr>
<tr>
<td>Change in Church Activities</td>
<td>19</td>
</tr>
<tr>
<td>Change in Social Activities</td>
<td>18</td>
</tr>
<tr>
<td>Mortgage or Loan Less Than $20,000</td>
<td>17</td>
</tr>
<tr>
<td>Change in Sleeping Habits</td>
<td>16</td>
</tr>
<tr>
<td>Change in Number of Family Get-Togethers</td>
<td>15</td>
</tr>
<tr>
<td>Change in Eating Habits</td>
<td>15</td>
</tr>
<tr>
<td>Vacation</td>
<td>13</td>
</tr>
<tr>
<td>Christmas (if approaching)</td>
<td>12</td>
</tr>
</tbody>
</table>
An adaptation of the Holmes-Rahe's Schedule of Recent Life Events, Ron Klein, Stress Transformation Seminar, 1979.
Symptom Checklist for Stress

The following checklist is reprinted from one developed by Don Isbell and Sally Nelson from Kaiser-Permanente in California. The list will help you identify the particular ways in which stress manifests in your life. Some bodily systems are more reactive in one individual than in another. Too many C or F responses might indicate an organic illness is on the way.

Presented below are common problems which may be stress-related. Please mark the frequency with which you have experienced each of these problems during the past two (2) months. Use the following symbols in responding on the checklist:

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tension headaches</td>
<td>X</td>
</tr>
<tr>
<td>Sleep onset insomnia</td>
<td>X</td>
</tr>
<tr>
<td>Fatigue</td>
<td>X</td>
</tr>
<tr>
<td>Overeating</td>
<td>X</td>
</tr>
<tr>
<td>Constipation</td>
<td>X</td>
</tr>
<tr>
<td>Lower back pain</td>
<td>X</td>
</tr>
<tr>
<td>Allergy problems</td>
<td>X</td>
</tr>
<tr>
<td>Feelings of nervousness</td>
<td>X</td>
</tr>
<tr>
<td>Nightmares</td>
<td>X</td>
</tr>
<tr>
<td>High blood pressure</td>
<td>X</td>
</tr>
<tr>
<td>Hives</td>
<td>X</td>
</tr>
<tr>
<td>Alcohol/nonprescription drug consumption</td>
<td>X</td>
</tr>
<tr>
<td>Low-grade infections</td>
<td>X</td>
</tr>
<tr>
<td>Stomach indigestion</td>
<td>X</td>
</tr>
<tr>
<td>Hyperventilation</td>
<td>X</td>
</tr>
<tr>
<td>Worrisome thoughts</td>
<td>X</td>
</tr>
<tr>
<td>Dermatitis</td>
<td>X</td>
</tr>
<tr>
<td>Menstrual distress</td>
<td>X</td>
</tr>
<tr>
<td>Nausea or vomiting</td>
<td>X</td>
</tr>
<tr>
<td>Other</td>
<td>X</td>
</tr>
<tr>
<td>Irritability</td>
<td>C</td>
</tr>
<tr>
<td>Migraine headaches</td>
<td>C</td>
</tr>
<tr>
<td>Early morning awakening</td>
<td>C</td>
</tr>
<tr>
<td>Loss of appetite</td>
<td>C</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>C</td>
</tr>
<tr>
<td>Aching neck</td>
<td>C</td>
</tr>
<tr>
<td>Shoulder muscles</td>
<td>C</td>
</tr>
<tr>
<td>Asthma attack</td>
<td>C</td>
</tr>
<tr>
<td>Colitis attack</td>
<td>C</td>
</tr>
<tr>
<td>Periods of depression</td>
<td>C</td>
</tr>
<tr>
<td>Arthritis</td>
<td>C</td>
</tr>
<tr>
<td>Common flu or cold</td>
<td>C</td>
</tr>
<tr>
<td>Minor accidents</td>
<td>C</td>
</tr>
<tr>
<td>Prescription drug use</td>
<td>C</td>
</tr>
<tr>
<td>Peptic ulcer</td>
<td>C</td>
</tr>
<tr>
<td>Cold hands or feet</td>
<td>C</td>
</tr>
<tr>
<td>Heart palpitations</td>
<td>C</td>
</tr>
<tr>
<td>Sexual problems</td>
<td>C</td>
</tr>
<tr>
<td>Angry feelings</td>
<td>C</td>
</tr>
<tr>
<td>Overweight</td>
<td>C</td>
</tr>
</tbody>
</table>

Adapted from Stress Transformation Seminar by Ron Klein, 1979.
Mental Relaxation Image

Select a comfortable sitting or reclining position. Close your eyes, and think about a place that you have been before that represents your ideal place for physical and mental relaxation. It should be a quiet environment, perhaps the seashore, the mountains, or even your own back yard. If you can't think of an ideal relaxation place, then create one in your mind.

Now imagine that you are actually in your ideal relaxation place. Imagine that you are seeing all the colors, hearing the sounds, smelling that aroma. Just lie back, and enjoy your soothing, rejuvenating environment.

Feel the peacefulness, the calmness, and imagine your whole body and mind being renewed and refreshed. After five to ten minutes, slowly open your eyes and stretch. You have the realization that you may instantly return to your relaxation place whenever you desire, and experience a peacefulness and calmness in body and mind. I will count backwards from 5 to 1. Upon reaching 1, you will open your eyes and feel relaxed and refreshed. Slowly start the count.
Passages - Stages of Adult Growth

Dr. Erik Erickson's model of human growth provides some insight into the stages of adult development. The life of an adult isn't without variation. It includes periods of growth and dormancy. The path to maturity isn't a flat climb but traverses mountainous terrain.

The rate of maturity is different for each person and the development of each stage builds on the successes and failures of the previous stages. The following is an outline of Dr. Erickson's model:

18-21, Young Adulthood - The task is to resolve the dilemma of intimacy/isolation. The young adult strikes out on his/her own, seeks to build relationships with peers. The question arises: how can I lend myself to the beliefs and attitudes of my friends and resolve my fear that I will lose my own identity? The rewards are: love, affiliation and affection.

21-45, Adulthood - The task is to come to terms with generativity/stagnation. This is a time for developing intimate relationships, very often making strong commitments and marriage. Individuals work toward life goals. Then very often, sometime around 30-35, satisfaction declines and people begin to question themselves, their goals and commitments. Stress is felt as a result of the conflicting pressures to remain committed and break loose to freedom.

45-55, Maturing Adult - The question is asked: Am I going to pass on something to the next generation? At this time, values, beliefs and attitudes are questioned. Life's goals are restructured and deep questions are asked.

55-70, Maturity - The task is to resolve the issues of wisdom and integrity versus despair and loneliness. There is a strong awareness of death and yet lessons learned in the earlier years of life can become the foundation for a strong commitment to oneself and others. Strengths that result from ego integration can be shared and a rich life can ensue.

Adapted from Stress Transformation Seminar by Ron Klein, 1979.
The Crises of Grief and Loss Model

Grief is the natural response to hurt and loss. When you lose something of value, it hurts and results in an injury. Grief is the process of healing. Unresolved grief is stressful and is the factor that can cause unbelievable amounts of distress and stress-related disease.

Elisabeth Kubler-Ross describes the process of grief-healing as having certain stages over time.

<table>
<thead>
<tr>
<th>Awareness of Loss</th>
<th>Time →</th>
<th>Hope-Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shock</td>
<td></td>
<td>Affirmation</td>
</tr>
<tr>
<td>Denial</td>
<td></td>
<td>Acceptance</td>
</tr>
<tr>
<td>Anger</td>
<td></td>
<td>Re-entry Bargaining</td>
</tr>
<tr>
<td>Panic-Guilt-Depression</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1) What stages do you remember experiencing when you've experienced a loss? ___________________________________________________

_________________________________________________

2) What stages haven't you allowed yourself to experience? ________

_________________________________________________

3) Where do you seem to get stuck? ____________

_________________________________________________

4) Note what you can learn about your patterns of dealing with grief and how you can heal yourself in a less stressful fashion from now on. ___________________________________________________

_________________________________________________

Adapted from Stress Transformation Seminar by Ron Klein, 1979.
Record Keeping

This self-explanatory series of questions should provide a history of additional importance to understanding your level of wellness.

Completing these evaluation forms may well be a considerable amount of work. Yet this work represents a beginning commitment to invest in one's living experience. This investment is not frequently made by most individuals. We make all sorts of investments in our job, our family, our homes and our cars but rarely do we invest time or energy towards ourselves. Becoming well means asserting the priority that one's living experience is important and deserves an investment no less than the years many of us have spent in educational institutions becoming experts in things other than ourselves. So take your time, place an investment in this work, and if you can't, ask why over and over until you can or do well to accept the reasons that you can't.

Wellness goals:
1. 
2. 
3. 
4. 
5. 

Wellness objectives:
1. 
2. 
3. 
4. 
5. 

Plans for achieving above:
1. 
2. 
3. 
4. 
5. 

Resources and support systems to help with the above:
1. 
2. 
3. 
4. 
5. 

Source: Elliot Dascher, M.D.
Adapted from Stress Transformation Seminar by Ron Klein, 1979.
Book Report Form

1. Title, author, publisher, copyright date.


3. How was this book related to increasing your awareness of women's issues?

4. Would you recommend this book to a friend? Why or why not?

5. Favorite quote.
Summary Questions

The following questions are designed to help you focus on four general areas of wellness. Use them as a guide to write a brief paragraph on each topic. Use the back of the page if necessary.

1. NUTRITION

How much attention do you pay to the content of the foods you eat? Do you use supplements or vitamins? Do you eat homecooked meals or eat in restaurants? Are you satisfied with your nutrition?

2. PHYSICAL FITNESS

What kind of vigorous exercise do you get, if any? Have you had positive or negative experiences with athletics in the past? Do you do any stretching (yoga) exercises? Are you satisfied with your physical condition?

3. DEEP RELAXATION

Do you meditate? If so, how often and in what way? Do you often feel tense or have cold hands or feet? What do you do for fun? Do you let yourself have massages? How often? What are your creative outlets? Are you satisfied with your abilities to relax?

4. SELF RESPONSIBILITY

Do you believe you are responsible for the quality of your life? What, if anything, would you like to be different in your life? Please mention any counseling or growth related processes you have been involved in. Are you satisfied in this area?

5. OCCUPATIONAL HAZARDS

Describe how you feel about your job. Detail any stress such as long hours, pressures, dust, mechanical dangers that you think are detrimental to your health. (Remember to include things like lighting, noise, smells and interpersonal conflicts.)
6. Do you currently smoke cigarettes? If yes -
   # cigarettes ____________
   # of years smoking ____________

7. Do you drink more than one drink/day? If yes -
   more than 5 drinks/week ____________
   5-10 drinks/week ____________
   10-20 drinks/week ____________

8. Do you wear seat belts?
   All the time ____________
   More than 50% of the time ____________

9. When you have problems, do you keep them to yourself or discuss them with others?

10. Comments

Source: Elliot Dascher, M.D.

Adapted from Stress Transformation Seminar by Ron Klein, 1979.
Appendix B

Thomas Nelson Community College
P. O. Box 9407 • Hampton, Virginia 23670
Phone (804) 826-4800

Dear Student:

In our continuing efforts to better serve the TNCC community of students we are trying a few new educational approaches. One of these is the small experiential group. For this to be successful, it is crucial that we have your cooperation. By participating in either a control or experimental group, your assistance will tremendously help us evaluate the effectiveness of the Women's Awareness Seminar here at TNCC.

Your signature indicates your cooperation, and we thank you in advance.

We will contact you during the spring quarter so that we may share the results with you.

If you have any questions, please do not hesitate to ask.

Thank you,

Carolyn Glass
Pam Turner
Instructors

Student Signature

Date

148

Equal Opportunity Employer
Appendix C

Frequency Distributions and Descriptive Statistics

for Age of Subjects

<table>
<thead>
<tr>
<th>Ages of Subjects</th>
<th>Frequencies</th>
<th>Ages of Subjects</th>
<th>Frequencies</th>
</tr>
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<td>18</td>
<td>3</td>
<td>36</td>
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<td>37</td>
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<td>20</td>
<td>4</td>
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<tr>
<td>21</td>
<td>8</td>
<td>39</td>
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<td>22</td>
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<td>23</td>
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<td>48</td>
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<td>28</td>
<td>3</td>
<td>51</td>
<td>1</td>
</tr>
<tr>
<td>29</td>
<td>2</td>
<td>53</td>
<td>1</td>
</tr>
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<td>30</td>
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<td></td>
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<tr>
<td>33</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>2</td>
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<td></td>
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Age by Group

<table>
<thead>
<tr>
<th></th>
<th>Experimental Group</th>
<th>Control Groups</th>
<th>Totals</th>
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</thead>
<tbody>
<tr>
<td>Mean</td>
<td>27</td>
<td>30</td>
<td>28.5</td>
</tr>
<tr>
<td>Median</td>
<td>25</td>
<td>27</td>
<td>26</td>
</tr>
<tr>
<td>Mode</td>
<td>21 &amp; 25</td>
<td>26</td>
<td>24</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>9.7</td>
<td>7.1</td>
<td>8.4</td>
</tr>
<tr>
<td>Variance</td>
<td>94.3</td>
<td>51.3</td>
<td>72.8</td>
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<tr>
<td>Range</td>
<td>30</td>
<td>34</td>
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\(^a\) All groups combined.
# Appendix D

## Frequency Distributions and Descriptive Statistics

for Type A and Type B Subjects

<table>
<thead>
<tr>
<th>Type</th>
<th>Percentiles</th>
<th>Experimental</th>
<th>Control</th>
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<tr>
<td><strong>70</strong></td>
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<td>2</td>
<td>3</td>
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<td><strong>75</strong></td>
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<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>80</strong></td>
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<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>85</strong></td>
<td>1</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>90</strong></td>
<td>2</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td><strong>95</strong></td>
<td>1</td>
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<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>Percentiles</th>
<th>Experimental</th>
<th>Control</th>
</tr>
</thead>
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<tr>
<td><strong>30</strong></td>
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<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>25</strong></td>
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<td>1</td>
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<tr>
<td><strong>20</strong></td>
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<td>4</td>
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<td><strong>15</strong></td>
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<td>1</td>
</tr>
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<td><strong>10</strong></td>
<td></td>
<td>3</td>
<td>3</td>
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<tr>
<td><strong>5</strong></td>
<td></td>
<td>1</td>
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<table>
<thead>
<tr>
<th>Type</th>
<th>Mean Percentile</th>
<th>Standard Deviation</th>
<th>Variance</th>
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<tbody>
<tr>
<td><strong>A's</strong></td>
<td>81</td>
<td>9.2</td>
<td>85.9</td>
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<tr>
<td><strong>B's</strong></td>
<td>15</td>
<td>6.4</td>
<td>41.3</td>
</tr>
<tr>
<td><strong>A's</strong></td>
<td>84</td>
<td>6.7</td>
<td>45.1</td>
</tr>
<tr>
<td><strong>B's</strong></td>
<td>16</td>
<td>7.1</td>
<td>51.2</td>
</tr>
</tbody>
</table>
Appendix E

Hypothesis 1—Pretest TC, I, and Fx Scores by Type

<table>
<thead>
<tr>
<th>Type</th>
<th>Mean</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Group (N=67)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre- TC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A (20)</td>
<td>40.90</td>
<td>43.30(40)</td>
</tr>
<tr>
<td>B (20)</td>
<td>45.70</td>
<td></td>
</tr>
<tr>
<td>Pre- I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A (20)</td>
<td>46.30</td>
<td>46.55(40)</td>
</tr>
<tr>
<td>B (20)</td>
<td>44.80</td>
<td></td>
</tr>
<tr>
<td>Pre- Fx</td>
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<td></td>
</tr>
<tr>
<td>A (20)</td>
<td>48.60</td>
<td>51.27(40)</td>
</tr>
<tr>
<td>B (20)</td>
<td>53.95</td>
<td></td>
</tr>
</tbody>
</table>
Appendix F

The third edition of the JAS was developed and administered to the WCGS population in 1969. It was judged inadvisable to use the SI as a criterion of Type behavior since nine years had passed and considerable behavioral style could have occurred in the interim. The Type A scale for the 1969 edition was derived from discriminant function procedures using as criterion those men who scored strongly Type A or B on both earlier test forms. (Jenkins, 1979)

The fourth edition developed in 1972 (Form B) expanded the population pool to include students and women. Gender references were changed as well as items to include student extracurricular activities that involved leadership and social skills. (Jenkins, 1979)

Form C, the fifth edition, consists of 52 items from Form B. Some minor modifications were made in the question format, but all reliability, validity, and clinical data are the same as for the 1969 version. (Jenkins, 1979)
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Vita

Carolyn Ann Glass

Birthdate  March 28, 1942
Place of birth  Georgetown, Kentucky

Education

Doctorate of Education in Counseling at the College of William and Mary; May, 1981.
Certificate of Advanced Study in Education at the College of William and Mary; May 1978.
Master of Education in Guidance and Counseling at the College of William and Mary; August, 1975.
Bachelor of Arts in Biology at Georgetown College; May, 1964.

Experience

1980-1981  Graduate assistant in Counseling Division at the College of William and Mary.
1977-1978  Group counseling facilitator at Eastern State Mental Hospital, Williamsburg, Virginia.
ABSTRACT

THE DIFFERENCES OF INDIVIDUALS WITH TYPE A AND TYPE B BEHAVIOR PATTERNS AND THE WOMEN'S AWARENESS SEMINAR ON SELF-ACTUALIZATION AND FLEXIBILITY

GLASS, CAROLYN ANN, Ed.D.
THE COLLEGE OF WILLIAM AND MARY IN VIRGINIA, 1981

CHAIRMAN: DR. FRED L. ADAIR

The relationship between psychological traits and the incidence of some diseases has captured the attention of researchers in medicine as well as psychology, education, and society. Rosenman and Friedman were pioneers in the discovery that a certain pattern of behaviors may be associated with the risk of heart disease. They designated these psychological factors as Type A behavior pattern and the absence of these factors as Type B behavior pattern.

Several behavioral techniques have been used to modify the Type A behavior pattern. It has been suggested that Type A individuals may need different types of intervention due to the educational, socio-economic or other differences. The techniques of humanistic psychology provide yet another method for changing the Type A behavior pattern.

This study explored the effectiveness of using a model designed to increase the self-actualization and flexibility of subjects in a small group setting. The subjects were classified as Type A, Type B, or indeterminant according to their scores on the Jenkins Activity Survey.

Subjects for the experiment (N=30) included female community college students enrolled in the Women's Awareness Seminar; the control group (N=37) was comprised of female community college students enrolled in an orientation class. All experimental subjects received a 30 hour, ten week course designed to increase self-awareness and self-actualization. The model included reading assignments, written homework, lectures, relaxation techniques, and experiential participation in class.

Testing for the effects of the intervention model consisted of pre- posttest administration of the Personal Orientation Inventory (POI) (Tq and I scales) and the California Personality Inventory (CPI) (Fx scale). The Jenkins Activity Survey (JAS) was administered only as a pretest for classification purposes. The Tq, I, and Fx scales were used as change measures for the effectiveness of the treatment; age and pretest scores served as covariates.

Predicted outcomes and results included:
1. Before treatment, individuals in experimental and control groups with Type B behavior pattern will be significantly greater self-actualizers and more flexible than Type A individuals on pretest measures of the POI and CPI. (Rejected)
2. After intervention, individuals in the experimental group will show a greater increase in self-actualization and flexibility than individuals in the control group by comparison of pre- and posttest measures of the POI and CPI. (Rejected)

3. After intervention, Type A's and Type B's in the experimental group will show a significant increase in self-actualization and flexibility as compared to Type A's and B's in the control group. This change will be measured by comparing pre- and posttest scores of the POI and CPI. (Rejected)

The three hypotheses were tested by one-way analysis of variance (Tc, I, Fx, and JAS scores as dependent variables). Age and pretest scores served as covariates for hypothesis two and three. Hypothesis two was further tested by students' t-test to measure group change. All hypotheses were tested at the .05 level.

Results indicated that the intervention was not effective in changing the self-actualization or flexibility of the experimental subjects. No significant difference was found between Type A's or B's on pretest measures of self-actualization or flexibility. Age did not appear to contribute to the variance.