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Health and illness behavior of Type A individuals

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Case Western Reserve University, 1990
HEALTH AND ILLNESS BEHAVIOR OF TYPE A INDIVIDUALS

by

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Submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy

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HEALTH AND ILLNESS BEHAVIOR OF TYPE A INDIVIDUALS

Abstract

by

SONIA ANNETTE ALEMAGNO

This study examines how Type A behavior relates to illness behavior as conceptualized by Suchman (1965). The illness behavior hypotheses are that Type A individuals will tend to reject the sick role, delay in seeking medical care, seek convenient medical care facilities, be impatient for recovery, and return back to work before they have fully recovered. The health behavior hypothesis is that Type A individuals will be less likely to engage in health promotion behavior. This cross-sectional survey was conducted with the cooperation of a large corporation in Cleveland, Ohio. A detailed questionnaire was sent to 385 managers which examined health promotion and illness behaviors. A total of 210 managers responded for a response rate of 54%. The models were tested using path analysis, yielding support for the hypotheses that Type As may tend to reject the sick role, delay in seeking medical care, be impatient for recovery, and return back to work before a full recovery. There was no relationship of Type A to health
promotion behavior. The direct and indirect effects of Type A behavior on the illness behavior stages are discussed. Implications are drawn for future research including the need to test the illness behavior model in a larger, prospective study.
DEDICATION

This work is dedicated to the Departments of Sociology at Case Western Reserve University, Kent State University, and John Carroll University. It is because of the enthusiasm of these faculties for sociological inquiry and the support of my student peers that I am beginning my career as a sociologist with the same enthusiasm to spend my life in sociological inquiry.

This work is also dedicated to the Research Division of the Department of Family Medicine at Case Western Reserve University. The friendships of Dr. Stephen Zyzanski, Mrs. Jeanne Steinberger, Dr. Jack Medalie, Dr. Kurt Stange, Ms. Ann Hryshko, and Ms. Karyn Schmidt mean more to me than I can express in this simple dedication.
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CHAPTER 1

INTRODUCTION

"Type A behavior", characterized by chronic impatience, excessive job involvement, enhanced competitiveness, and feelings of being under the pressure of time and the challenge of responsibility, has been studied almost exclusively as related to coronary heart disease. In its formulation, Type A behavior is distinguished from Type B behavior which is more easy-going and relaxed, less competitive, less job involved, and less pressured due to time constraints. Using this Type A/Type B distinction, prospective studies have found that there is a clear relationship between Type A behavior and the development of coronary heart disease (Dembroski, et. al, 1978; Rosenman and Friedman, 1974; Friedman et. al, 1974).

THEORETICAL FRAMEWORK

The theoretical illness behavior framework of Suchman is useful in providing direction for this dissertation study. Suchman (1965, 1966, 1967) divides the sequence of seeking, finding and carrying out medical care into five stages: (1) The Symptom Experience Stage (the decision that something is
wrong); (2) The Assumption of the Sick Role (the decision that one is sick and in need of professional medical care); (3) The Medical Care Content Stage (the decision to seek professional medical care); (4) The Dependent Patient Role Stage (the decision to transfer control to the physician); and (5) The Recovery or Rehabilitation Stage (the decision to relinquish the patient role).

This framework is useful in conceptualizing the illness behavior process. It can be hypothesized that there will be various factors which relate to how and when a person makes the health care related decisions discussed in Suchman's framework. This dissertation study will focus on how Type A behavior is related to decisions in the five stages of illness behavior and to health behavior.

The distinction between health and illness behavior was first made by Kasl and Cobb (1966). Health behavior is the behavior by a person who believes himself or herself to be healthy for the purpose of preventing illness. This is distinguished from illness behavior which is behavior by a person who feels ill for the purpose of defining and seeking relief.

Additional literature which is important to this dissertation study regards work on the sick role concept.
Every society's definition of illness becomes institutionalized within its cultural patterns. To the sociologist, illness may be viewed as a deviant social state brought about by disruption of normal behavior through disease. While a disease represents a medical entity that can be defined in terms of biological, physiological and psychological functioning, an illness can also be regarded as a social entity, definable in terms of social functioning (Suchman, 1965).

The sociological viewpoint of illness as deviance was initially formulated by Talcott Parsons (1951) in his concept of the sick role. The sick role refers to characteristic behaviors a sick person adopts to address the normative demands of a situation. Parsons viewed illness as a disturbance of "normal" functioning- both physically and socially. A person is defined as sick when he or she acts sick.

Parson's concept of the sick role is important to this dissertation study, since the Suchman model include the acceptance of the sick role stage. Illness is seen within the framework of social roles, attitudes, and activities that people bring to a situation.

In addition to the insight of Parsons to the sick role, his work also addresses the idea of medicine as an institution for social control of deviant behavior. The concepts of physician control, the importance of social roles, and the impact of
attitudes on illness behavior are critical to this study. It is out of this perspective that the purpose of this study emerges. This study will focus on how the work role effects health and illness behavior.

LITERATURE REVIEW

In order to examine previous studies which might address how Type A behavior relates to health and illness behavior, it was necessary to examine work on Type A behavior, illness behavior and health behavior.

The Relationship of Type A Behavior and Coronary Heart Disease

During the past twenty years, a significant literature base has evolved indicating the importance of the association of Type A behavior and coronary heart disease (Ragland and Brand, 1988). In recent years, data have been reported to suggest that this relationship should be reevaluated.

In a recent review article by Haynes and Matthews, future directions in Type A research are outlined. These authors write,

"We should design studies to look at a multiplicity
of factors rather than a unicausal 'magic bullet' that explains the risk of CHD. Such factors include: (a) the structure and elements of the work environment... (b) individuals characteristics other than Type A that can modify risk, such as perceived social support... and (c) the structure and elements of the family environment..." (Haynes and Matthews, 1988).

The authors conclude that the years 1988 to 1990 will be the turning point for Type A theory, research and intervention. New efforts at Type A behavior research will extend beyond the emphasis on coronary heart disease outcomes.

This conclusion by Haynes and Matthews was drawn from an extensive literature review of 28 prospective studies examining the relationship of Type A behavior to CHD. Results are conflicting as to whether the relationship of Type A behavior to CHD is direct or indirect through other risk factors (Case, Heller et. al, 1985).

Recent studies report that the global measures of Type A behavior are not reliable predictors of CHD endpoints (Dembroski and Costa, 1988). Instead, various components of Type A measures, such as hostility are better predictors of CHD. As models which examine factors of Type A behavior emerge
Dembroski and Costa suggest that such refinements will improve the prediction of CHD.

Levenkron and Moore (1988) state that for the first time in the history of modern medical research, it seems possible that the natural disease course of CHD, currently the single greatest cause of death in the United States, might actually be altered not by advances in biomedical technology but instead by a strategic behavioral intervention (1988:78). However, early results of Type A intervention studies do not consistently support the conclusion that behavioral interventions reduce Type A tendencies.

An enormous volume of literature emerged during the 1970's debating measurement issues of Type A behavior. Dembroski and Costa state that "two decades of personality and social-psychological research have demonstrated that the Jenkins Activity Survey (JAS) possesses the most robust construct validity of any available measure of the Type A coronary-prone behavior pattern," as compared to other measures of Type A behavior (1988:60). The JAS, developed by Jenkins and Zyzanski (1971), defines Type As as more hard-driving, with stronger achievement concerns, more impatience, and greater competitiveness than their Type B counterparts. However, Dembroski and Costa caution that, although the JAS appears to capture the key defining attributes of Type A
persons, results are inconsistent as to how reliable the JAS alone is as a predictor of CHD. No studies have examined health behavior outcomes of Type A behavior.

The Relationship of Type A Behavior and Illness Behavior/Health Behavior

Andersen and Bartkus (1972) have conceptualized "predisposing variables" to be variables influencing the use of health care services, that is, what factors predict utilization of health care services. These predisposing variables might include health beliefs, attitudes toward medical care, and structural variables such as proximity and access to medical care. This dissertation study seeks to analyze JAS-measured Type A behavior as a predisposing variable to health and illness behavior.

Since only a few studies have addressed outcomes of Type A behavior other than coronary heart disease, it is important to discuss these studies. Most of these studies have examined symptom suppression in laboratory settings (such as treadmill exercises). Controlling for health status, findings indicate that Type A individuals report fewer symptoms of fatigue, pain or stress when engaged in challenging tasks such as test-taking or physical exertion (Carver, Coleman, and Glass,
1976; Stern, Harris and Elverum, 1981; Weidner and Matthews, 1978). Matthews and Carra (1982) suggest that Type A women report fewer symptoms of menstruation than Type B women. It has further been suggested by Carver that Type A persons may delay in seeking medical care, since they are likely to ignore cardiovascular symptoms (Carver, et. al, 1976). Oddson (1981) reports that Type A behavior is associated with a tendency not to comply with medical advice. Type A patients diagnosed as having hypertension were found to ignore advice and fail to take prescribed medication.

Health Promotion Research

Health promotion can be defined as activities that promote optimal physical and psychosocial health in the general sense, so that individuals have minimal risk factors and risk levels for illness. Few studies have addressed the predictors of making lifestyle changes based on health promotion prescriptions of a physician. However, one study has found that sex, amount of prior physician contact, and marital status impact health promotion activity. Married, females with a regular doctor were most likely to engage in health promotion behavior which led to lifestyle changes, such as smoking cessation or dietary changes. Motivation to change
unhealthy lifestyles was found to be the strongest predictor of actual change (Kelly, 1988).

An abundance of research effort is now being placed on studying preventive health behavior. A thorough review of studies utilizing the Health Belief Model is presented by Janz and Becker (1984). Rundall and Wheeler (1979) studied factors associated with utilization of the swine flu vaccination program among senior citizens. Perceived susceptibility and the danger associated with the preventive action provided the two best determinants of utilization. Cummings et al. (1979) also concluded that attitudinal factors predict inoculation behavior. Perceived susceptibility, satisfaction with health services, fear of contracting cancer, and attitudes toward preventive care were found to be related to cervical screening test use (Richards and McEwan, 1973).

Richards (1975), however, found that non-users of preventive medicine among a wide range of income levels did not avoid medical care for reasons of fear or animosity. These non-users were people who felt a state of well-being, accepted life, and felt a security in their health and family life. Thus they were not motivated for general check-ups. Richards called this the "emergence of self reliance."
Illness Behavior Research

A second area of literature review includes research which addresses predictors of illness behavior. This review on predictors of health care utilization attempts to provide a systematic look at research that has appeared concerning the illness behavior, specifically the utilization of health care services. The goal of this section is to update the review provided by McKinlay (1972) which examined illness behavior research from 1950 to 1970.

McKinlay identified three major disappointments in illness behavior research in 1972. First, he stated that the writings about empirical findings appeared to have been generally more substantial than the findings themselves. The review presented here can once again draw the same conclusion. An abundance of literature now addresses many facets of illness behavior, and multivariate techniques provide sophisticated tests of hypotheses. Nevertheless, the field in general has yet to account for a substantial amount of explained variance, regardless of theoretical model.

Second, McKinlay notes that the findings to date in 1972 had not been consistent either in direction or strength, with few attempts to coordinate results or to account for apparent disparities. McKinlay noted problems with inconsistent results
due to varying methodologies, differing medical care systems and time periods, and rhetorics of interpretation.

By the 1980's, this shortcoming appears to have been at least partially overcome. Many relationships have been examined and supported in various studies in various settings. Consistent findings are presented in this review. The past 15 years have brought strong trends towards diversity in health care delivery systems. With this diversity comes the problem of generalizing study findings.

Further, the literature review for this dissertation project found research on illness behavior in two somewhat distinct literatures. While the social scientists have continued to expand on theoretical models and have greatly enhanced statistical methods, physicians and other medical researchers have examined utilization behavior from a marketing research perspective.

As an additional disappointment, McKinlay identified a lack of sound theoretical work in the general area of utilization behavior. Several models have been presented since 1970 to address this need. Andersen and his co-workers (Andersen et al., 1975; Aday and Andersen, 1975) present a guide for multivariate analyses which has been used frequently by others. This model conceives of physician utilization as a consequence of predisposing, enabling and illness (need)
variables. The studies by Andersen and his colleagues are examples of well-executed, large-scale physician utilization studies. Through the years the Andersen model has been modified to consider barriers other than financial access while still maintaining that need is the primary determinant of utilization (Andersen and Laake, 1983).

Some models hypothesize that health services use can be explained solely by social psychological models encompassing health-related motivation, perception, and learning (Douglas, 1971; Fabrega and Roberts, 1972; Leventhal, 1971). Other researchers use a social systems model relating the internal or psycho-biological system with external connections to health (Purola, 1972; Sheldon, 1970). Wolinsky (1978) attempted to predict physician utilization using 29 predictors, with illness-morbidity measures accounting for most of the variance. Hershey et al. (1975) provide an additional approach proposing a behavioral model in which pathology results in the development of symptoms and wants culminating in demand for physician services.

Regardless of model, however, one disturbing fact remains. When these models are applied to data, modest results emerge whether predicting contact with a physician or volume of visits. Mechanic (1975) and Reeder (1973) suggest that various studies find such discrepant results due to the
diversity of factors that predict health orientations from one cultural context to another.

Igun (1979) presents 11 stages of health-seeking behavior which lead to actual service utilization: symptoms-experience; self-medication or self-treatment; communication to significant others; assessment of symptoms; assumption of the sick-role; expression of concern by significant others; assessment of probable efficacy of sources of care; selection of treatment plan; treatment; assessment of the effects of treatment; recovery or rehabilitation. Beland (1982) presents a good discussion supporting this approach of using stages. He states that multivariate studies have been disappointing primarily due to difficulties within the conceptualization of the utilization concept. He proposes that the propensity to utilize should be expressed in time sequences.

**Approaches to Health Care Utilization Research**

With such great diversity in models and approaches, a meaningful ordering of the now voluminous literature on physician utilization presents a challenge. The following review, while not intended to be a complete representation of all current literature, presents an inventory of actual research on utilization since 1970, highlighting promising developments.
Studies reviewed for this dissertation project are grouped according to one of six major approaches identified by McKinlay in 1972. These approaches include: the economic approach, the socio-demographic approach, the geographic approach, the social psychological approach, the socio-cultural approach, and the organizational approach.

The Economic Approach

The economic approach continues to be a major approach to health service utilization research which focuses on financial barriers to health care services. However, recent studies consider a greater spectrum than financial barriers. Dutton (1978) provides evidence that the poor in the U.S. continue to receive less services, especially children. She notes that cost constraints and cultural differences do not fully explain why the poor underutilize services. Dutton suggests that the inadequacies in delivery systems used by the poor might influence under-utilization of such systems. She concludes that improvements in delivery systems must accompany financial access and health education to eliminate differentials in utilization.

Skinner et al. (1978) found that nonutilizers of health care fall in the gray area between Medicaid eligibility and
sufficient income to meet health care costs. These people were also less likely to make multiple visits. Lee and Morehead (1984) reported that 87% of Medicaid eligibles were, however, users of care.

In 1973, Richardson performed a random stratified household survey that asked people what they felt was the biggest problem with medical care. Respondents cited cost, followed by a lack of physician availability and a lack of specialty services.

It would appear that financial considerations still remain quite relevant when examining health care of children. Scott-Samuel (1980) comments on maternal and child health non-users of medical services. Those of lower SES were found to be underutilizers. Lave et al. (1979) found that health status is the single most important factor influencing whether a child will have a regular source of medical care.

Hyman (1970) found that discontent constitutes a major intervening variable between economic status and use of physician services. Poverty breeds discontent, which in turn produces discontinuity in the use of medical services. Discontinuity leads to untreated illness.

We may conclude that the presence of financial resources alone cannot adequately account for patterns of utilization with regard to illness and related problems.
The Socio-Demographic Approach

The utilization of medical services has been studied in great detail in relationship to demographic variables. Taylor, Aday, and Andersen (1975) developed the symptoms-response ratio to explain utilization based on access to medical care. Results showed that children are the age group which has significantly more visits to the doctor than severity of their symptoms require. Young adults go as often as they should. Older adults (35-64) go less often than would be medically advisable. Men generally see doctors less often than they need to, as do non-whites. The index also suggests possible "over-utilization" among certain groups such as people who see specialists as their regular source of care.

Cooney (1985) reported that late or no prenatal care was associated with Medicaid status and education levels less than 12 years. These latter two variables, in turn, served as intervening variable mediating the effects of race and age on late or no prenatal care. Selwyn (1978) found that the best discriminators of child users of health care were number of eligible children in the family, age of mother, access to medical care, action proneness attitudes and health knowledge of the mother.
Gender differences in utilization have been widely reported. Women are more likely to utilize medical services, however, Cleary et al. (1982) attribute sex differences in utilization to real differences in health and whether or not a woman gives birth during the study period. Berk and Taylor (1984) report that divorced women, as compared to married women, are slightly more likely to use medical services, even though they are twice as likely to be uninsured. Hibbard and Pope (1983) state that it is primarily the perception of symptoms and an interest and concern with health which contributes to gender differences in utilization rates.

Keraly et al. (1982) found that female family practice patients are more willing to seek mental health services than males, as were the females studied by Kessler (1981). This might explain the 10%-28% excess female psychiatric morbidity measured in statistics. However, while females are more likely to perceive symptoms as more serious than males, there is no apparent gender difference in the tendency to adopt the sick role when ill, as measured by the rejection of sick role scale developed by John Ware (1972).

Employed women have a higher sense of well being and utilize fewer professional services to cope with personal and mental health problems than non-employed counterparts (Wheeler et al., 1983).
Regarding other demographic characteristics, Yelin et al. (1983) examined data from a 1976 National Health Interview Survey to determine if the use of ambulatory and hospital care differs by race, education, insurance coverage or region. No consistent differences are found in number of physician visits made in a year by these characteristics, medical need held constant. Lack of insurance coverage is associated with fewer hospitalizations. Aday and Andersen (1984) report that non-whites are still more likely than whites to use hospital outpatient departments and emergency rooms and not to have a regular family physician.

Taking all demographics into consideration, the single most strongest predictor of physician utilization remains poor health (Wan and Soifer, 1974). However, characteristics such as demographics do not appear to reveal in any depth why variation in utilization exists. Instead, these provide for interesting predictor variables most accessible from traditional data sources.

The Geographic Approach

Between 1950-1970, there was a great deal of attention given to the hypothesis that close proximity to medical care services leads to increased medical care utilization. In recent
years, little emphasis has been placed on the geographical proximity of services as an important determinant of utilization behavior. The reason for this deemphasis is that there is little evidence that geographical proximity of services to potential patients leads to increased use of services.

Yesalis et al. (1980) examined the effect of locating a group practice in a rural area. Locating a practice in a rural area did not increase health care utilization by those living in close geographical proximity.

It would appear that simply locating services near populations in need does not provide a comprehensive answer to under-utilization of medical services. Attitudes towards health care and long-term health practices are more critical factors.

The Social-Psychological Approach

Social-psychological research attempting to explain why people exhibit certain health behaviors centers on motivation, perception, attitudes, and learning. Many studies have examined the perception of symptoms and psychological distress as factors leading to utilization. It is in this approach that one can search for any relevant literature related to Type A behavior as a predictor of health care utilization.
Tanner et al. (1983) created a variable that measured both the presence of symptoms and the person's own perception of the necessity for medical care. This variable proved to be a strong predictor of physician utilization. Andersen and Bartkus (1973) studied student utilization of a university health plan. This study suggests that social-psychological factors such as symptom sensitivity and students' appraisal of services affect the extent to which students seek medical care. While medical need and insurance coverage both directly affect the choice of health services, socio-demographic and ecological factors affect utilization indirectly through intervening social-psychological variables.

Alemagno et al. (1986) studied people who sought medical care at urgent care centers. Utilization of urgent care centers appears to be based on problems the patients perceived to be urgent, but that do not necessarily need immediate medical attention. Another study provides more direct evidence that perception of symptoms varies between patients and medical providers. Curtis and Talbot (1979) examined after-hour calls to a family practice and found that in over 30% of the calls there was a lack of congruence between the physician and patient concerning the main reason for the call.
Tessler, Mechanane and Dimond (1976) show a positive relationship between psychological distress and physician utilization which persists even when a variety of socio-demographics, attitudinal and health status variables have been controlled. Tessler (1978) also found that the amount of the mother's distress affects child extent of medical care use. However, perception of symptoms is related to experience with a symptom. Having had prior experience is associated with less inclination to seek prompt medical care (Banks and Keller, 1971).

Gortmaker and Gore (1982) found that the presence of stress in females on a given day is associated with an approximate doubling of the probability of a health care contact on that day, even when a number of background variables (such as occupation) are controlled. Stressful life events prove to be one of the single best predictors of utilization.

There is a growing literature on delay and non-use of medical services. Hackett et al. (1973) studied the elapsed time between perception of the first symptom of cancer and the search for medical care in 563 patients. Worry reduced delay more than pain. Furthermore, those who were of higher SES or openly referred to their condition as "cancer" rather than another euphemism delayed much less. Garner (1974)
studied Canadian women who delayed seeking medical care. These women stated that fear was the major reason for the delay.

Safer et al. (1979) presents a very interesting model of delay, presenting three stages of delay: Appraisal delay occurs in the time it takes to appraise a symptom as a sign of illness. Illness delay is the time involved in deciding to seek professional medical care. Utilization delay is the time from deciding to seek medical care to actual clinic use. This study found that patients with very painful illness and patients who were not educated regarding the possible implications of the symptoms had short appraisal delay. Those who had old, chronic symptoms or who imagined possible severe consequences had long illness delays. Patients not concerned about cost, with painful symptoms that appeared curable, had short utilization delay.

Attitudes toward medical care have also been studied in detail. Robinson (1972) found that a mother's readiness to take advantage of doctor services was associated with the parent's favorable attitude towards physician authority. Crandall and Duncan (1980) examined low income persons. Belief in the effectiveness of medical care predicted service utilization.
Financial variables had generally a weaker effect than attitudinal variables, although an interaction effect was found.

Roughmann et al. (1979) studied the relationship between satisfaction with medical care and utilization. While satisfaction substantially increased the proportion of explained variance in utilization by hierarchical regression, utilization did not increase the explained variance in satisfaction. Doyle and Ware (1977) have found that physician conduct is clearly the most important factor in relation to general satisfaction with care.

Thomas and Penchansky (1984) use interview data to show that significant relationships between satisfaction with access and use of services can be found if segments of the population, homogeneous in terms of age, sex, and other characteristics, are considered separately. This approach is based on the assumption that dissatisfaction with a particular dimension of access may be salient for some groups of patients but not for others.

Wallston and Wallston (1978) provide a good review of the relationship between locus of control and health behavior. Locus of control was consistently found to be relevant to seeking health information and making and keeping appointments. Those with internal locus of control show more positive behavior.
Personality factors have been examined in reference to utilization behavior. Matthews et al. (1983) found that persons exhibiting some Type A behaviors delayed in the early phase of seeking treatment for myocardial infarction symptoms. This study appears to be the only study to date which examines the relationship between Type A and delay. Williams (1972) examined personality factors related to check-up dental behavior. Being organized, disciplined and a lack of hurriedness led to better dental behavior.

Schuurs (1980) reported that low dental anxiety, having a family dental health plan, and a preference for preservation of teeth predict regular attendance. These attitudes were more powerful predictors of use than enabling factors such as geographical distance (see also Gochman, 1974; Frazier at. al, 1974).

The Socio-Cultural Approach

Studies examining the effect of cultural context on utilization behavior are not new to the field of medical service research. Reeder and Berkanovic (1973) discuss the difficulty in generalizing study findings using this perspective. Factors that may be powerful predictors in one cultural context may be unimportant in another. Nevertheless, it is not a new
conclusion that socio-cultural factors such as family, kinship and friends influence the manner in which people define and act upon symptoms.

Calnan (1983) recently found that the perceived urgency with which medical care is required is influenced by who the person has contact with. If groups such as police, bystanders, neighbors and friends suggest that medical care should be sought, people are more likely to do so.

The culture of poverty perspective suggests that the values and beliefs of minority groups and persons in the lower classes inhibit their use of physician services. This view is challenged in recent literature. Sharp et al. (1983) present a causal model of physician utilization showing that the attitudes of blacks and the less educated towards health care providers promote utilization rather than discourage it. Attitudes alone (an additive effect) have no effect on utilization; attitudes have their effect only in combination with symptoms (a conditional effect). Higher levels of symptoms coupled with propensity to use physician services act to promote visits.

Welch et al. (1973) found that amongst Mexican Americans, utilization of health services was related more to class and age than either to attitudes toward modern medicine or to respondents closeness to the "Mexican culture." Chi (1985) indicates that the provision of comprehensive health
programs, removal or structural barriers in the health delivery system and a program of migrant health education are necessary to alter medical utilization of migrants.

The Organizational Approach

The organization approach focuses on characteristics of the health care system that discourage utilization. Aday and Andersen (1984) report that with the advent of major federal financing and delivery initiatives, some of the traditional inequities in access to services are disappearing. A major issue is that fewer people see one particular provider as their regular source of care. Non-whites are still more likely than whites to use hospital outpatient departments and emergency rooms and not to have a regular family physician. Likewise, farm dwellers, those of low income, and non-whites are still more likely to be uninsured. People who are not insured or do not have a regular source of care are still less likely to have contacted a doctor in the past year and to have had elective tests and procedures.

In 1975, Glasser examined obstacles to utilization of pre-paid health care. Major obstacles appear to be differences in perceptions of need for treatment, differences in attitudes toward treatment, and a lack of awareness of eligibility for
benefits among consumers, referral agents, and providers. Forthofer and Glasser (1979) examined HMO enrollees. This study did not support the hypothesis that people join HMOs because they have a built up need for services. Also, results suggest that enrollees require some time to learn how to deal with the system. Diehr et al. (1984) studied the use of ambulatory care services in three provider plans. If the insurance plan covered preventive care, patients sought care with less regard for their need for care. Further, a fifty dollar deductible for care was found to deter use. A similar study (Shapiro et al., 1986) found that patients enrolled in a cost sharing insurance plan were 1/3 less likely than free care patients to seek medical care for minor symptoms. There was, however, no significant difference between these groups in seeking care for serious symptoms. Over all, cost sharing was found to reduce medical expenditures.

The literature on different health care plans is growing at a tremendous rate. Data showing relationships between the use of medical care and such factors as insurance coverage and accessibility of providers present a persuasive case that insurance coverage is an important predictor of health care utilization (Fuchs, 1974; Davis, 1975; Wennberg and Gittelsohn, 1973; Newhause et al., 1974). Utilization research in the next
few years will surely focus on the effect of these various health care plans.
CHAPTER 2

HYPOTHESES/ PRELIMINARY MODELS

Overview

The literature review for this study suggests a conceptual framework, relevant variables, and justification for the Type A study proposed. Type A appears to have been studied to date primarily in the medical framework emphasizing physiological functioning, particularly in regard to coronary heart disease. This study will be the first to address how Type A relates to illness behavior and health behavior using a sociological framework.

Type A behavior is a potentially important predictor of physiological functioning (illness) and response to illness (illness behavior). Type A behavior may also be an important predictor of whether people engage in health promotion activities (health behavior).

Figure 1 presents a conceptual model addressing how Type A may impact illness and illness behavior.
FIGURE 1

TYPE A EFFECT ON ILLNESS AND ILLNESS BEHAVIOR

We may regard illness and responses to illness in the context of other structural variables, such as the work role. During times of illness, Type A may impact physiological functioning (for example, blood pressure), psychological functioning (for example, attitudes or perceptions of illness) or social functioning (for example, choosing the sick role over the work role).

The majority of the Type A literature has examined the relationship of Type A to physiological functioning. This study,
however, will focus on the psychological and social outcomes of being Type A during times of illness.

Type A can also be viewed as a potential cause of health behavior. This conceptual approach is presented in Figure 2.

**FIGURE 2**

**TYPE A AND HEALTH BEHAVIOR**

In this model, the context is good health. Again, the impact of the structural variables must be addressed.
HYPOTHESES

Based on the literature review and the conceptual guidance of the five-stage Suchman model of illness behavior presented in Chapter 1, hypotheses can be developed which incorporate the conceptual models in Figures 1 and 2.

Illness Behavior Hypotheses

1. When Type As feel that they are getting sick, they fight it (rejection of the sick role). Rationale: This hypothesis relates to Suchman's first stage of "symptom experience." It is hypothesized that Type As will tend to fight illness, to ignore symptoms, and to avoid letting illness interfere with their life.

2. Once symptoms are identified, Type As will delay in seeking medical care. Rationale: This hypothesis relates to Suchman's second stage of illness behavior, the "assumption of the sick role" stage. Carver (1976) has suggested that Type As may delay in seeking medical care for cardiovascular symptoms. It will be interesting to analyze delay in seeking medical care for symptoms other than cardiovascular symptoms.
3. **Type A individuals will seek out medical care that is time efficient and convenient.** Rationale: This hypothesis relates to Suchman's third stage, "the medical care contact" stage and stems from the literature which elaborates on the factor of Type A behavior termed "hurried sickness" (Rosenman and Friedman, 1974). Since Type A individuals tend to always be "in a hurry," it seems reasonable that they desire health care that requires little or no waiting time in the physician's office and convenience in terms of location and appointment scheduling.

4. **Type A individuals will be reluctant to accept the dependent patient role and to be impatient for recovery.** Rationale: Suchman's fourth stage of illness behavior relates to the "dependent patient role." It is hypothesized that Type As will be less apt to delegate work during times of illness and to worry about their ability to pick up work where they left off before illness. This hypothesized impatience with the recovery process stems from the character traits of Type A individuals which include "time-urgency" and general impatience, and increased job-involvement.
5. Type As will return to work before they have fully recovered. This relationship is indirect through job preoccupation. Rationale: This hypothesis relates to the fifth stage in Suchman's framework, the "recovery/rehabilitation" stage. Since Type As are by definition very job-preoccupied, it is reasonable to hypothesize that they will return to work before they have fully recovered.

Figure 3 presents the causal model of illness behavior that the present study will test. This model incorporates all study hypotheses elaborated above. Additionally, demographic variables include gender, age, marital status, and education. For clarity of presentation, not all paths to demographics are shown. Demographics are listed with a single label. The hypotheses relating demographics to Type A behavior are that non-married, younger, more educated, males will score higher on the Type A scale, based on previous work by Jenkins and Zyzanski (1971). Figure 3 also indicates how Type A behavior and the control variables are related to the five stages of the Suchman model. All relationships in the preliminary model are hypothesized as positive relationships.
Health Behavior Hypotheses

6. Type A individuals will be less likely to engage in health promotion behaviors. They will be more likely to:

   Smoke Cigarettes
   Drink Alcohol
   Exercise Less Often
   Use Seat Belts Less Often
   Pay Less Attention to Diet
   Have Physical Examinations Less Regularly
   Not Have a Regular Doctor

   Figure 4 presents the causal model of health behavior that the current study will test.
For presentation clarity, the demographic variables are not included in the preliminary model. These additional variables were entered in the same way for the health behavior model as for the illness behavior model during regression analyses.
CHAPTER 3

METHODS

STUDY DESIGN

In order to test the preliminary models, a survey was conducted utilizing a questionnaire with scales reflecting the concepts in the models. In 1987, I received a Research Initiation Grant at Case Western Reserve University to conduct a survey in cooperation with Ameritrust, NA, a major bank in Cleveland, Ohio. The grant, in the amount of $2500, covered the costs of questionnaire development and printing, mailing costs, and computer analysis costs utilizing SPSS-X on the Case Western Reserve University DEC-20 mainframe. These grants are specifically designed to fund pilot studies which show potential for future studies which can be expanded into major corporate, foundation or Federal grants.

After almost a year of negotiation with Ameritrust, it was decided that all managers of Ameritrust would be included in the survey project. Ameritrust did not wish to collaborate with other corporations, perhaps so that results could not be compared to any competitors. Also, Ameritrust did not want to sample from its managers, since perhaps those chosen might
feel that they were chosen due to a history of medical problems. The final group of Ameritrust managers included all branch managers and all administrators of the bank working in the main corporate offices, a possible total of 385 persons. This convenience sample was chosen to test the preliminary model discussed above.

The "sample" for this project consists, therefore, of all managers of a single corporation. Consequently, given the restricted range of the sample, it is important to briefly discuss external validity. Strictly speaking, the results of this study can only be cautiously generalized to non-Ameritrust executives working in other similar corporate environments. This sample reflects a typical corporate population in that the initial distribution of the Type A variable (mean, standard deviation), the major independent variable in this study, is quite similar to other corporate studies (Jenkins and Zyzanski, 1971).

While sampling issues deal with external validity, issues regarding the questionnaire relate to internal validity. The questionnaire included sensitive questions on health topics, thus it is possible that if the questionnaire was distributed and collected in the work environment, respondents might be concerned with confidentiality. Respondents might fear that the information could be used against them in promotion
decisions, even though confidentiality was assured. This could lead to a misrepresentation. Thus, in order to control for this threat to internal validity, questionnaires were mailed to home addresses with a postage-paid return envelope addressed to the investigator at Case Western Reserve University. The questionnaire was accompanied by a letter from the investigator at Case Western Reserve University and a "Dear Employee" letter from the President of Ameritrust, encouraging employee participation in the study. Ameritrust stipulated that no identification numbers were allowed, thus at no time could individual results be given to the host corporation.

This "no ID" mandate makes comparisons of respondents to nonrespondents difficult. Also, an additional stipulation by Ameritrust was that there could only be one follow-up to the first mailing, a reminder post card. These stipulations may be responsible for lowering the return rate.

This study was approved by the Investigational Review Board for Human Subject Investigational Studies of University Hospitals of Cleveland (See Appendix 2).

**MEASUREMENT DESIGN**

The questionnaire consisted of a 12-page booklet (see Appendix 1). The questionnaire was pretested using 20
employees of Bank One, a similar bank in Cleveland, Ohio, and revised to meet a promise that the average completion time for the questionnaire would not exceed 20 minutes. It was felt that a longer questionnaire would meet with resistance from busy executives, especially if they felt the questions were redundant.

**FACTOR STRUCTURE**

The endogenous variables in the illness behavior preliminary model include Type A behavior, job preoccupation, rejection of the sick role, delay in seeking medical care, seeking convenient medical care, recovery, impatience and premature return to work following illness. These concepts were reflected in the questionnaire by 32 items.

The factor structure for these 32 items is presented in Table 1. This matrix was derived using a principal axis factoring extraction method and varimax rotation. The sample size for the factor analysis is 197 with listwise deletion of missing data. Twelve factors with eigen values over 1.0 (range 1.0 to 4.03) are represented. The criteria for including items in factor score was a factor loading of greater than 0.40.

Items are listed by variable label and by location of the item in the questionnaire in Appendix 1. Each item has both a
section location and an item number location. (For example, X 6 indicates an item in section X of the questionnaire, number 6).
<table>
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**TABLE I**

**RELATED FACTOR STRUCTURE**

**VARIABLES**

**FL, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11, F12**
| 0°  | 90°  | 180° | 0°  | 90°  | 180° | 0°  | 90°  | 180° | 0°  | 90°  | 180° | 0°  | 90°  | 180° | 0°  | 90°  | 180° | 0°  | 90°  | 180° | 0°  | 90°  | 180° | 0°  | 90°  | 180° | 0°  | 90°  | 180° | 0°  | 90°  | 180° |
|-----|------|------|-----|------|------|-----|------|------|-----|------|------|-----|------|------|-----|------|------|-----|------|------|-----|------|------|-----|------|------|-----|------|------|-----|------|------|-----|------|
| 50° | 90°  | 0°   | 0°  | 90°  | 0°   | 0°  | 90°  | 0°   | 0°  | 90°  | 0°   | 0°  | 90°  | 0°   | 0°  | 90°  | 0°   | 0°  | 90°  | 0°   | 0°  | 90°  | 0°   | 0°  | 90°  | 0°   | 0°  | 90°  | 0°   | 0°  | 90°  | 0°   | 0°  | 90°  | 0°   |
| 0°  | 90°  | 180° | 0°  | 90°  | 180° | 0°  | 90°  | 180° | 0°  | 90°  | 180° | 0°  | 90°  | 180° | 0°  | 90°  | 180° | 0°  | 90°  | 180° | 0°  | 90°  | 180° | 0°  | 90°  | 180° | 0°  | 90°  | 180° | 0°  | 90°  | 180° | 0°  | 90°  | 180° |

**Variables**

(Continued)

**Rotated Factor Structure**

**Table 1**
**Measures**

Turning to operationalization of concepts in the model, exogenous variables included marital status, gender, years of education, job level (administrative, middle-management, or upper management) and age in years. It is assumed that these variables are measured with little or no error.

**Type A**

Type A behavior was measured using a shortened version of the Jenkins Activity Survey, a self-administered Type A measure. While many studies have utilized interviewer ratings of Type A behavior, this was not practical given the limitations of this study. Thus, the shortened 10-item JAS was included in the questionnaire, as developed by Jenkins and Zyzanski (1970). The three strongest factors of the original JAS were represented in the shortened version: "time urgency," "hard-driving," and "job involved."

For this dissertation study, two global Type A measures were created using the 10 items: (1) a JAS score using the weighting system developed by Jenkins and Zyzanski (1971); and (2) an unweighted score derived from summing the standardized item scores with an alpha reliability of .78.
In this sample using the 10 item shortened version of the JAS, the only factor which held was the "hard-driving" factor in Factor 5. Two type-A JAS items load with an alpha reliability of .58. Factors 9, 10, 11 reflect additional Type A items which possibly reflect the other Type A components of "job - involvement" and "time urgency." The variable "Type A 8" in Factor 9 is the tendency to keep many jobs moving forward at once. This item loaded on the job-involvement factor in the JAS formulation. The variable "Type A 3" in factor 10 is the tendency to always be on time for meetings. This is a part of JAS time-urgency. The variable "Type A 1" in Factor 11 is an additional "time urgency" JAS item. Unfortunately, the only Type A factor which meets the minimum requirements of a common factor, three items per factor is the "hard-driving" factor.

For this dissertation study, however, the JAS factor score is generated by using items which should have loaded together to form the Type A factors, had more of the items of the original JAS formulation been included. These three factors were then correlated to the study outcomes.

The Type A items are located in section VII of the questionnaire in Appendix 1.
Job Preoccupation

Job preoccupation items were written for this study. Three items, each ranked on a scale of 1 to 10 ("not at all" to "quite a bit") examined the respondent's ability to "unwind at the end of the day," the respondent's preoccupation with work manifested in "continuing to talk about work with family and friends after work," and the frequency of "thinking about work even when away" from work.

The three items loaded on a single job preoccupation factor (Factor 2). The alpha reliability for these three summed items is 0.77.

The job preoccupation items are located in section VI of the questionnaire in Appendix 1.

Delay in Seeking Medical Care

Because it was anticipated that the sample would consist of primarily young and healthy persons, delay in seeking medical care was measured using brief vignets of hypothetical symptoms developed in cooperation with four physicians at the Department of Family Medicine at Case Western Reserve University. These physicians agreed that the symptoms
presented varied in potential seriousness. Respondents were asked how long they would wait to seek care for the following symptoms: a fever of 101 degrees; feeling edgy or nervous, a painless lump in the neck, trouble sleeping, and pressure behind the chestbone.

Although the use of hypothetical symptoms poses a threat to construct and internal validity, a cross-sectional design of a young, executive population does not allow for examination of response to potentially serious symptoms. Since the majority of respondents are in excellent physical health, only a lengthy prospective study could examine actual health and illness behavior.

Two delay factors emerged (Factor 4 and 7). The first factor reflected delay for non-serious symptoms. Two items, delay in seeking care for the hypothetical symptoms of feeling edgy and trouble sleeping, reflect factor 4. Those two items have an alpha reliability of .56. Delay for fever was dropped based on the factor analysis.

The second delay factor (Factor 7) reflected delay for hypothetical symptoms which could be potentially serious: a painless lump on the neck and pressure behind the chestbone. This score has an alpha reliability of .62.

The delay in seeking medical care items are located in section XIII of the questionnaire in Appendix 1.
Recovery Items

Recovery items included 8 items written by John Ware (Ware and Snyder, 1975; Brooke, Ware et. al, 1979). These items with a reported alpha reliability of .78 asked respondents for feelings regarding the last time they were sick and out from work. Example items include, "Time passed all too quickly," "I returned to work before I was really ready to," and "I could hardly wait to get back to my normal routine." In the original work by Ware, these eight items factored into two recovery subscales.

Three Ware recovery items clustered to form factor 6. These items reflected a concern about work during times of illness and returning back to work "too soon" by self-assessment. These summed items have an alpha reliability of .72.

Four items were summed to create the recovery impatience score. The items reflected the concepts of hardly being able to wait to get back to a normal routine, and the reverse-coded concepts of time passing all too quickly, dreading getting back to a normal routine and enjoying resting
at home. The four summed items have an alpha reliability of .64.

The recovery items are located in section XII of the questionnaire in Appendix 1.

**Seeking Out Convenient Medical Care**

Seeking out convenient medical care was analyzed using a "characteristics of valued health care provider" rank order listing developed by Alemagno and Klinkman (unpublished). Respondents were asked to rank the following reasons why people choose where they go for health care: office is easy to get to; cost is reasonable; able to develop a good relationship with the doctor; insurance coverage is good; no waiting or short wait time to see a doctor; and the appointment is easy to make. Respondents' ranking of office location, no or short waiting, and ease of appointment were summed to develop a value for convenience score.

One item loaded over .50 to form a value for convenience on Factor 12. This variable, ease of making appointments, is scored with the additional item loading on this factor, no or short waiting time in the physician's office. The alpha reliability for these two items summed is .50.
The convenience items are in section III, question number 12, in the questionnaire in Appendix 1.

Rejection of the Sick Role

Rejection of the sick role was measured utilizing a four item scale also written by John Ware. Examples of these items include "When I think that I am getting sick, I fight it," and "When I'm sick, I try to keep going as usual."

Three items loaded on Factor 3 reflecting the rejection of the sick role concept. These questions asked respondents about a recent illness episode and their tendency to keep going as usual, to avoid letting the illness interfere in their life and to keep the illness to themselves. These three items summed have an alpha reliability coefficient of .72. It is interesting to note that in the larger factor analysis, the fourth rejection of the sick role item, "I fight it" appears as a separate factor, Factor 8. However, in factor analysis of the four items separately, the items do hold to their original one factor identified by John Ware. For this reason, four items were summed to create the rejection of the sick role scale, with an alpha reliability of .73.

The rejection of the sick role items are in section VIII of the questionnaire.
Health Promotion Behaviors

Items addressing cigarette use, alcohol use, diet, exercise, seatbelt use, sleep, and regular physical examinations were also included to test the health behavior model. Each item was used as a separate outcome. These items were not included in the factor analysis of the larger illness behavior model items, since each item was used as a dependent variable in the health behavior model.

The decision to use each as a single dependent variable lies in the clinical utility of this data. Each health risk is viewed to have different illness implications. For example, while smoking is a risk for lung disease and hypertension, eating poorly may be viewed as a risk factor for high cholesterol.

DATA ANALYSIS DESIGN

Data analysis was conducted in stages using SPSS-PC. The first stage of analysis included development of measures discussed above.

The second stage of analysis focused primarily on the scoring of the Type A scale. The JAS is usually scored using a
weighting system. For each item that contributes to a scale score, each response alternative is assigned numerical points based on the project of the item regression weight and the optimal scaling weight for that response (Jenkins and Zyzanski, 1979).

This weighting system was applied to form a weighted composite index of the 10 Type A items included in this study. Results using the weighted Type A total scale were then compared to results for the unweighted scale. As discussed by Nunnally (1978), results for weighted and unweighted scales tend to be similar. This holds true for the Type A weighted and unweighted scale as well. Table 2 presents the Pearson correlation coefficients for the relationship between outcome variables and the weighted and unweighted Type A scores.
TABLE 2
CORRELATIONS OF WEIGHTED/UNWEIGHTED
TYPE A SCORES WITH OUTCOMES

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<th>Unweighted</th>
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<th>Weighted</th>
<th>JAS</th>
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</thead>
<tbody>
<tr>
<td>Rejection of Sick Role</td>
<td>.13</td>
<td>.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delay - Lesser</td>
<td>.20</td>
<td>.17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delay - Serious</td>
<td>.16</td>
<td>.17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recovery Impatience</td>
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<td>.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recovery &quot;Too Soon&quot;</td>
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<td>.12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job Preoccupation</td>
<td>.30</td>
<td>.27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Convenience</td>
<td>.10</td>
<td>.10</td>
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</tr>
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</table>

Since results were comparable and since the unweighted scale correlated slightly higher, results will be shown for the unweighted Type A scale.

The third stage of analysis included a series of multiple regression analyses to test the preliminary model both for illness and health behavior. In order to do this, the exogeneous variables (age, gender, education, marital status, and job level) were entered as predictors of Type A behavior and as predictors of the other outcomes for illness and health behavior. Regression analyses used a simultaneous forced
entry command for all independent variables. Missing data was handled using a pairwise procedure.

It is important to address the conditions which might invalidate regression analysis results. One such problem is multicollinearity. In order to test for multicollinearity, the independent variables were subjected to a tolerance test. Small tolerance values can cause computational problems for multiple regression solutions. The tolerance coefficients for independent variables in the preliminary model ranged from .77 to .92. Thus, there is no problem with multicollinearity in the analyses to be presented.

The issues of skewness (outliers) and normality are also important to consider. Tests for non-normality and outliers were performed and found to be within normal limits. Thus, regression analyses were performed with confidence that the assumptions of multiple regression were not violated.
CHAPTER 4
RESULTS

Of the 385 questionnaires mailed, 210 complete questionnaires were returned, a response rate of 55%. Table 3 displays the demographic profile of the sample.

TABLE 3
RESPONDENT CHARACTERISTICS
(N=210)

<table>
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<th>Category</th>
<th>Count (Percentage)</th>
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<tr>
<td>MALE:</td>
<td>137 (65.2%)</td>
</tr>
<tr>
<td>FEMALE:</td>
<td>73 (34.8%)</td>
</tr>
<tr>
<td>AGE: Mean:</td>
<td>37.2 years</td>
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<tr>
<td>MARRIED:</td>
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<td>SINGLE:</td>
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<td>WIDOWED:</td>
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<td>DIVORCED/SEPARATED:</td>
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<td>13 (6.2%)</td>
</tr>
</tbody>
</table>
As shown, the sample consists of primarily young, well-educated, married men. The distribution of job level (administrative, middle-management, and upper management) is representative of the Ameritrust managerial position structure. The average time spent working for Ameritrust is a surprising 10.1 years. Thus, this sample represents a stable workforce.

In any study that examines health behaviors, it is important to consider the health status of the sample. It was expected that this sample would be, on the average, very healthy. Responses to the health status and health behavior items support this expectation, as shown in Table 4.
TABLE 4
HEALTH BEHAVIORS/HEALTH STATUS
(N=210)

CHRONIC HEALTH CONDITION:
  Allergies           25 (12%)
  Heart Trouble       1 (.5%)
  Diabetes            1 (.5%)
  High Blood Pressure 9 (4%)
  Back Trouble        7 (3%)
  Other Condition     8 (4%)

MEDICATIONS TAKEN WEEKLY:
  Aspirin             47 (22%)
  Other Rx            37 (17%)
  Antacids            15 (7%)
  Sleeping Pills      1 (.5%)
  Tranquilizers       1 (.5%)
  Diet Pills          1 (.5%)
  Laxatives           2 (1%)

NO MEDICATION:         99 (47%)

SELF-PERCEPTION OF HEALTH STATUS:
"According to the doctors I've seen, my health is now excellent."

  Strongly Agree       81 (38%)
  Agree                81 (38%)
  Neutral              41 (20%)
  Disagree             5 (2%)
  Strongly Disagree    1 (.5%)

As shown, there are very few chronic conditions represented in this sample. Of those who do have a chronic
condition, 81% (43/53) respond that their medical condition has never affected their work in any way. A little less than half of the sample never take any medication for any reason, either prescription or over-the-counter. Of those who do take regular medication, the majority either take allergy pills or use aspirin. The response to one single health status item reflects the sample's self-perception of excellent health. Seventy-eight percent of the sample feels that their health is now excellent (agree strongly or agree).

Thus, this sample reflects a very healthy group of young adults who seldom visit the doctor, even though all respondents have some type of health insurance. This also lends support to the vignet methodology, since a cross-sectional design could not examine actual illness in such a healthy sample.

**Illness-Behavior Results**

Table 5 presents the mean and standard deviation values for variables in the regression analyses testing the illness behavior model. Gender is dummy coded "1" for males. Marital status is also dummy coded "1" for married and "0" for all other marital statuses. Job level can range from 1 (lower administrative staff) to 4 (upper management). Education can
range from 1 (high school graduate) to 5 (graduate degree).
Other values represent composite scale scores.
TABLE 5

UNIVARIATE MEANS/STANDARD DEVIATIONS

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>N</th>
<th>MEAN</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (Male)</td>
<td>210</td>
<td>.65</td>
<td>.48</td>
</tr>
<tr>
<td>Age</td>
<td>210</td>
<td>37.30</td>
<td>9.31</td>
</tr>
<tr>
<td>Married</td>
<td>210</td>
<td>.72</td>
<td>.45</td>
</tr>
<tr>
<td>Job Level</td>
<td>209</td>
<td>2.16</td>
<td>.51</td>
</tr>
<tr>
<td>Type A Total Score</td>
<td>199</td>
<td>.05</td>
<td>4.44</td>
</tr>
<tr>
<td>Education</td>
<td>210</td>
<td>6.62</td>
<td>1.33</td>
</tr>
<tr>
<td>Rejection of the Sick Role</td>
<td>208</td>
<td>14.81</td>
<td>2.71</td>
</tr>
<tr>
<td>Recovery Impatience</td>
<td>202</td>
<td>13.75</td>
<td>3.61</td>
</tr>
<tr>
<td>Recovery &quot;Too Soon&quot;</td>
<td>206</td>
<td>8.66</td>
<td>3.01</td>
</tr>
<tr>
<td>Delay: Lesser</td>
<td>202</td>
<td>8.66</td>
<td>2.54</td>
</tr>
<tr>
<td>Delay: Serious</td>
<td>195</td>
<td>3.09</td>
<td>1.45</td>
</tr>
<tr>
<td>Job Preoccupation</td>
<td>209</td>
<td>13.38</td>
<td>5.75</td>
</tr>
</tbody>
</table>
Table 6 displays the zero order Pearson correlation coefficients for all variables in the preliminary illness behavior model.

### TABLE 6

**ZERO ORDER PEARSON CORRELATION MATRIX**

<table>
<thead>
<tr>
<th></th>
<th>GENDER</th>
<th>AGE</th>
<th>MARRIED</th>
<th>JOB LEVEL</th>
<th>TYPE A</th>
<th>EDUCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENDER</td>
<td>1.00</td>
<td>.32**</td>
<td>.19**</td>
<td>-.25**</td>
<td>-.08</td>
<td>.06</td>
</tr>
<tr>
<td>AGE</td>
<td>1.00</td>
<td>.15</td>
<td></td>
<td>-.27**</td>
<td>-.19**</td>
<td>-.29**</td>
</tr>
<tr>
<td>MARRIED</td>
<td>1.00</td>
<td>-.10</td>
<td></td>
<td>-.02</td>
<td>-.03</td>
<td></td>
</tr>
<tr>
<td>JOB LEVEL</td>
<td>1.00</td>
<td></td>
<td>-.15</td>
<td>-.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TYPE A</td>
<td></td>
<td></td>
<td></td>
<td>1.00</td>
<td>.13</td>
<td></td>
</tr>
<tr>
<td>EDUCATION</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.00</td>
</tr>
</tbody>
</table>

**p<.01
Figure 5 presents the results of the series of regression analyses testing the illness behavior preliminary model. Beta weights for all relationships statistically significant at p<.05 are
shown. Smaller arrows leading into the dependent variables indicate the variance which remains unexplained by the predictor variables \((1-\text{MR}^2)\). For presentation clarity, all nonsignificant relationships are not shown with the exception of those nonsignificant relationships involving Type A behavior. To note what nonsignificant paths are not noted, please see Figure 3 showing the preliminary model for illness behavior.
Figure 5

Type A illness behavior model

Suchman model stages

Stage 1 Stage 2 Stage 3 Stage 4 Stage 5
Of all the demographic variables, the only statistically significant predictor of Type A behavior is age. Those at younger ages tend to score higher on the Type A scale. In turn, Type A has a direct effect on both job level and job preoccupation. Among the demographic variables, only gender (being male) has a direct effect on job preoccupation.

Examining results as they relate to the Suchman model, Type A has a direct effect on rejection of the sick role (Stage 1 of the model). This relationship is statistically significant at the p<.05 level, but relatively weak. The other predictor variables do not relate significantly to rejection of the sick role. A total of 6% of the variance in rejection of the sick role is explained.

Stage two of the Suchman model relates to individuals who have accepted the sick role and have decided to seek medical care. This relates to the time period in which a person either seeks immediate medical attention or delays for a period of time before seeking care. Recall that there are two delay factors: delay for lesser symptoms and delay for potentially serious symptoms.

Type A does not significantly relate to delay for potentially serious symptoms, but does have an indirect effect on delay for lesser symptoms through job preoccupation. The predictor variables account for 8% of the variance in delay for lesser symptoms.
Stage three of the Suchman model describes the medical care contact stage—the actual visit to the physician. This stage concerns the decision-making process about what type of physician to see and what attributes are desired in a health care provider. The hypothesis tested for Stage 3 was that Type As will seek out convenient medical care relates to this stage in the Suchman model. Neither Type A or any of the other predictor variables relate significantly to the value for a convenient medical care provider.

Stage four of the Suchman model concerns the "dependent patient" stage. This can be seen as either the time of hospitalization, or, in most cases, the resting period at home—a time of either patience or impatience with recovery. Type A has both a direct and an indirect effect on recovery impatience. The indirect effect occurs through job level. Type As tend to be at higher job levels; those at higher job levels tend to be more impatient for recovery. No other variables show statistically significant effects on the stage 4 outcomes. The set of predictor variables account for 12% of the variance in recovery impatience.

Stage five of the Suchman model concerns the actual recovery: the endpoint of the illness episode when an individual decides to return to full functioning. Returning back
to work "too soon" (as self-assessed) is the outcome measure for this stage.

Type A does not relate directly to returning back to work too soon, but does have an indirect effect through job preoccupation. No other predictor variables have a statistically significant effect on Stage 5 outcomes. The set of predictor variables account for nineteen percent of the variance in returning back to work too soon.

There is an interest in how the Type A components (hard-driving, time-urgency, and job involvement) relate to the outcomes. Recall that these factor scores were recreated based on the original JAS factor structure, even though this factor structure did not hold in this sample.

Table 7 presents the zero-order Pearson correlation coefficients of the Type A components with the study outcomes. For comparison, the correlations with the total unweighted Type A score are also presented.
TABLE 7
CORRELATIONS OF TYPE A COMPONENTS WITH OUTCOMES

<table>
<thead>
<tr>
<th></th>
<th>Type A Total</th>
<th>Hard-Driving</th>
<th>Job Involvement</th>
<th>Time Urgency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sickrole</td>
<td>.15</td>
<td>.13</td>
<td>.01</td>
<td>.07</td>
</tr>
<tr>
<td>Delay: less</td>
<td>.12</td>
<td>.08</td>
<td>.12</td>
<td>.31</td>
</tr>
<tr>
<td>Delay: serious</td>
<td>.12</td>
<td>.07</td>
<td>.03</td>
<td>.15</td>
</tr>
<tr>
<td>Convenience</td>
<td>.10</td>
<td>.10</td>
<td>.08</td>
<td>.02</td>
</tr>
<tr>
<td>Recovery</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impatience</td>
<td>.14</td>
<td>.25</td>
<td>.04</td>
<td>.02</td>
</tr>
<tr>
<td>Recovery</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Too Soon</td>
<td>.19</td>
<td>.25</td>
<td>.05</td>
<td>.04</td>
</tr>
</tbody>
</table>

A series of multiple regression analyses were conducted using the various Type A components in place of the total score. Most interesting is the replication of the model using the hard-driving factor in place of the total Type A score. Figure 6 presents the results using the hard-driving factor. Several relationships become slightly stronger, while the indirect relationship to delay for lesser symptoms becomes non-significant. The explained variance for all dependent variables remains essentially unchanged.
FIGURE 6
HARD-DRIVING FACTOR ILLNESS BEHAVIOR MODEL

SUCHMAN MODEL STAGES

STAGE 1  STAGE 2  STAGE 3  STAGE 4  STAGE 5

TYPE A

REJECTION-SICK ROLE  .93
DELAY-LESSER  .95
DELAY-SERIOUS  .95
CONVENIENCE  .96

RECOVERY IMPATIENCE  .88

AGE  -.20

GENDER  .14

JOB PREOCC  .34

JOB LEVEL  .18

.23

.29

.20

.80

RECOVERY "TOO SOON"
The performance of the job involvement factor as a predictor variable is much less dramatic. In fact, job involvement does not significantly relate to any of the illness behavior outcomes. The time-urgency factor relates significantly only to delay for lesser symptoms. There is a direct relationship to delay (beta= .19). This effect is the only direct relationship of a Type A component or the Type A total to delay. Recall that neither the Type A total score or the job-involvement or hard-driving component Type A factors had any direct effect on delay for lesser symptoms.

This presentation relating to Type A behavior varies somewhat from the traditional approach of presenting ANOVA results. Since these results may be of some interest, comparison of the Type B, Type A-B, and Type A groups is presented in Appendix 3. This analysis allows for examination of the Type A or Type B groups at either end of the scale, including those who fall one standard deviation below and above the mean Type A score in the sample.

Health Behavior Results

Regarding health behaviors such as smoking, alcohol use, and exercise, this sample is found to be at relatively low risk compared to the general population. The sample included only
42 (20%) regular smokers, most of whom smoke less than a pack of cigarettes a day. Only 3 persons in the sample indicated that they drink more than 2 drinks of alcohol per day. Sixty-six percent of the sample exercise at least once a week for twenty minutes or longer. Of those who exercise, the majority exercise from 1-3 times per week. Seventy-five percent of the sample wear seat belts either "always" or "most of the time."

Regarding diet, 70% of the sample eats breakfast daily and 49% indicate that they seldom or never eat "fast food." The average daily caffeine intake of hot beverages is 1.9 cups and .7 cans of cold beverages. Forty-one percent of the sample indicate that they pay attention to total calories, 61% watch their salt intake, 57% pay attention to cholesterol, and 49% pay attention to fiber and sugar. Nineteen percent of the sample indicated that they are on some type of diet.

The average hours of sleep per night in this sample is 6.6 hours. Over 80% of the sample had their blood pressure checked in the previous year, although the average visits to the doctor for this sample in the past year is 1 visit per year.

Table 8 presents the zero-order Pearson Correlation Matrix of the health behaviors with the total type A score and the Type A factors of hard-driving, time-urgency and job-involved. It is interesting to note that the performance of the
total score is similar to the factors. Of most importance is the large number of nonsignificant relationships between Type A and the health behaviors. In fact, contrary to the research hypothesis, it appears that Type A individuals are more likely to exercise and to wear seatbelts regularly.
<table>
<thead>
<tr>
<th></th>
<th>TOBACCO</th>
<th>ALCOHOL</th>
<th>EXERCISE</th>
<th>SEATBELT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE A TOTAL</td>
<td>.10</td>
<td>.04</td>
<td>.12</td>
<td>.16**</td>
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<tr>
<td>FACTORS</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>HARD-DRIVING</td>
<td>.02</td>
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<td>.18**</td>
<td>.09</td>
</tr>
<tr>
<td>JOB-INVOLVED</td>
<td>.04</td>
<td>.09</td>
<td>.10</td>
<td>.14</td>
</tr>
<tr>
<td>TIME-URGENCY</td>
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<td>.07</td>
<td>.02</td>
<td>.06</td>
</tr>
<tr>
<td>FASTFOOD</td>
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</tr>
<tr>
<td>CAFFEINE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SKIPMEALS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REGULAR CHECKUP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TYPE A TOTAL</td>
<td>-.06</td>
<td>.08</td>
<td>.09</td>
<td>-.02</td>
</tr>
<tr>
<td>FACTORS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HARD-DRIVING</td>
<td>-.01</td>
<td>-.02</td>
<td>.09</td>
<td>-.08</td>
</tr>
<tr>
<td>JOB-INVOLVED</td>
<td>-.06</td>
<td>.04</td>
<td>.13</td>
<td>-.02</td>
</tr>
<tr>
<td>TIME URGENCY</td>
<td>-.01</td>
<td>.08</td>
<td>.08</td>
<td>-.06</td>
</tr>
<tr>
<td>REGULAR DOCTOR</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TYPE A TOTAL</td>
<td>.03</td>
<td></td>
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<tr>
<td>FACTORS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HARD-DRIVING</td>
<td>.02</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>JOB-INVOLVED</td>
<td>.09</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>TIME URGENCY</td>
<td>-.07</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p<.01
Figure 7 presents the results of the series of regression analyses testing the health behavior model. Beta weights for all relationships statistically significant at $p<.05$ are shown. Again, nonsignificant paths are not shown, except as they involve Type A behavior. There were no significant relationships of job level to the health promotion behaviors.
There were no significant relationships of job level to the health promotion behaviors. As shown in the model, there is a direct relationship of Type A to seatbelt use and regular exercise. Type A has an indirect effect on skipping meals through job preoccupation.
CHAPTER 5

DISCUSSION

Before drawing conclusions it is important to briefly discuss of the limitations of this study. The major limitation of this study involves the use of a cross-sectional survey design. Clearly, the models here proposed must be tested using a prospective design which examines actual illness episodes and health behaviors over time. Explanatory, cross sectional studies have the inherent problem of trying to understand causal processes which occur over time, yet the conclusions are based on observations made at one time (Babbie, 1979).

Results from this study may only be cautiously generalized to executives working in other similar corporate environments. Since a single corporation is represented in the final study model, it will be important to test the model using a more representative corporate sample. In addition, the health status of this sample is relatively homogeneous. It will be important to examine how changes in health status over time effect health and illness behavior.

This study explores how Type A behavior relates to health and illness behavior utilizing a conceptual approach examining how work roles relate to the sick role. The results are interesting in that there appears to be a relationship
between Type A and illness behavior, but no relationship to health behavior.

In this discussion, each hypothesis will be examined as it relates to the study findings and to previous literature. The limitations of this study will also be discussed, along with possibilities for further research.

STAGE 1: REJECTION OF THE SICK ROLE

The first study hypothesis is that Type A persons will reject the sick role. This hypothesis is the first which addresses how the sick role is perceived by those who are job involved in demanding corporate work roles. This relates to previous work by Ware (1975) which found that rejection of the sick role predicts non-utilization of health care services.

In this relatively homogeneous sample, the sick role scores are high. Therefore, as a group, this sample reports that the sick role is avoided whenever possible so that normal functioning can be maintained. Of greater interest is the tendency of Type A individuals to score even higher on the rejection of the sick role scale. This is indicated by the direct relationship of Type A to rejection of the sick role. Because Type A individuals are job preoccupied, it is not surprising that the sick role is perceived as something to "fight" and to "avoid."
This relationship of Type A to rejection of the sick role indicates how important normal functioning is to Type A individuals. By definition, Type As are hard-driving and competitive. Acknowledgement of the decline in social functioning during times of illness will be difficult for Type A individuals.

Previous work by Carver, Coleman, and Glass (1976) has found that Type A individuals suppress symptoms in treadmill exercises. Type As choose to succeed at test-taking or physical exertion rather than to end tasks due to symptoms of fatigue and pain. The rejection of the sick role by Type A individuals in this sample may be a similar phenomenon.

This has implications for physicians and others who design health care services for executives. It may also have implications for those performing interventions to decrease Type A tendencies. Type A individuals will most likely avoid situations in which they will be asked to reduce work functioning in order to address illness situations. Type As will react positively to interventions which do not interfere with their normal work routine.
STAGE 2: DELAY IN SEEKING MEDICAL CARE

The second stage of the Suchman model concerns the decision to seek medical attention following acceptance of the sick role. The time from this decision to the actual visit to a physician is the focus of the second stage of the Suchman model. During this period, a person decides how long to wait to see a doctor.

A great deal of literature addresses delay in seeking medical care. Regarding Type A behavior, Carver et. al (1976) has reported that Type A persons may delay in seeking medical care for cardiovascular symptoms.

The total Type A score does not have a significant direct relationship on delay in seeking medical care for either lesser or serious symptoms. However, it is difficult to dismiss the indirect effect of Type A on delay for lesser symptoms through job preoccupation. Clearly, once again we see the impact of the work role on a medical decision. This implies a decision-making process which examines how seeking medical care will conflict with the work routine. Since a visit to the doctor will interfere with the Type A hard-driving work plans, job preoccupation impacts delay in seeking medical care.
Also, when Type A is broken down into its underlying components, there is a direct relationship between the time urgency factor and delay for lesser symptoms. Here we see the impact of time on Type A individuals. Type As hate to "waste time" and adhere to rigid work schedules in order to meet deadlines. Since visiting a doctor will take time away from work, Type As will be reluctant to take the time away from work to seek medical care. This will especially be true for symptoms which do not have obvious ramifications, that is, less serious symptoms.

This may lead to a question of why Type A relates to delay for lesser symptoms, but does not relate to delay for potentially serious symptoms. Recall that delay was measured using hypothetical symptoms along with the question, "How long would you wait to seek medical care?" Clearly the education level of this sample is very high. Since we are dealing with hypothetical symptoms, respondents may have reported what they thought to be "the right answer," rather than an honest estimate of how long they would wait to seek care. For example, many respondents may have realized that pressure behind the chestbone (chest pain) is a cardiovascular symptom, thus the red flag of "heart attack" and the need for immediate care. However, the results may also indicate a true response.
With the lesser symptoms, such as fatigue, respondents would have less knowledge of "the right answer", and the answers varied considerably on the delay for lesser symptoms scale. It is in this variation that we see the relationship of the time-urgency factor to delay for lesser symptoms.

It is this relationship to lesser symptoms, or more correctly symptoms which require more individual judgement, that is of great interest. Since many people realize when a symptom is potentially life-threatening and in need of immediate medical care, it is to the vast majority of other symptoms that people will react variably. Many chronic conditions begin with insidious beginnings. If Type A individuals either ignore or delay in seeking care for subtle symptoms, they may be at greater risk for developing chronic conditions.

The results regarding delay support the comments by Haynes and Matthews (1988) which point to the importance of examining how the various factors of Type A behavior (time-urgency, hard-driving, etc.) may differentially relate to outcomes. In this sample, the time urgency factor clearly relates to utilization delay. The results also support the importance of the work by Case, Heller, et. al (1988) who have discussed the possibility that Type A may indirectly relate to health and illness outcomes. It will be critical for future Type
A studies to use statistical procedures which allow for examination of indirect effects.

STAGE 3: VALUE FOR A CONVENIENT HEALTH CARE PROVIDER

It is evident that this entire sample values convenience in a health care provider. Over 70% of the sample choose convenience as one of their top two considerations in choosing a health care provider. Given a considerable lack of variation on this dimension, it is difficult to test the hypothesis that Type As will value convenience more that their Type B counterparts. In the models presented in the results, there are no statistically significant predictors of a value for convenience in a medical care provider.

An additional important consideration is the very low utilization of health care rate in this sample. The average number of visits to a physician in a one year period in this sample is less than one visit. Thus, this group is less likely to have ongoing relationships with a physician. Hence, the value for convenience over the value for continuity or relationship with a physician.

Value for a convenient health care provider is an element of the consumerist movement in health care described by Haug and Lavin (1983). Younger cohorts have been found to be
more challenging of physician authority and more likely to make independent judgements regardless of physician advice.

This young sample of executives exemplifies the consumerist movement. They are likely to choose their doctors on the basis of ease of appointment, convenient office hours which do not conflict with work hours, cost, and location of practice. They are less likely to be concerned about their ability to develop a relationship with a physician. Also, the respondents are likely to desire patient-physician relationships which are egalitarian rather than traditional paternalistic relationships.

This non-use of services perhaps relates to what Richards (1975) has described as the "emergence of self-reliance." Non-users have been found to be people who feel a state of well-being and feel secure in their health and family life. Thus, they are not motivated to make general check-up visits.

Surely it is important to provide convenient medical care for executives represented in this sample, whether they are Type A or Type B. Designing attractive health care clinics are an important consideration for corporations.

We might, however, question the approach of designing health care clinics in the workplace. Though these clinics would be more convenient to use, Type As may be less likely to use such clinics because of the conflict such use would foster
between the work and the sick role. This points to a possible relationship between Type A and social desirability. Type As may be reluctant to engage in activities which imply that they are not job involved and hard-driving. Type As may be more likely to utilize "urgent care centers" or other health care facilities which require no appointment and have evening hours which do not conflict with the work role.

STAGE 4: RECOVERY IMPATIENCE

The fourth stage of the Suchman model relates to the resting period at home following the physician visit. In this stage, we have examined recovery impatience as it relates to Type A behavior. Type A has both a direct and an indirect effect on recovery impatience. Given that Type A persons tend to be impatient by definition, it is not surprising that they are impatient with the recovery process.

This study was unable to ask about compliance issues, since the respondents are generally in self-reported excellent health. However, the finding that Type As are impatient for recovery may have implications for compliance. Those who are impatient for recovery may also be less likely to rest as directed or to follow therapy as directed. In fact, Oddson (1981) has found that Type A patients diagnosed with
hypertension were not as compliant with medication regimens as Type B patients. This is a hypothesis which deserves some additional attention in future prospective studies.

Once again we are reminded of the importance of the work role. Resting at home may not be the socially desirable behavior and could be seen as an inefficient use of time, particularly by Type A persons.

STAGE 5: RETURNING BACK TO WORK "TOO SOON"

The decision to return back to work following illness is made in the fifth stage of the Suchman model. It is important to recall that in this study we are dealing with a self-report of returning back to work too soon, not with a clinical assessment by a physician. It is, therefore, very interesting that Type As self-report that the last time they were sick and out of work for a few days or longer, they returned back to work too soon.

Whereas some of the Type A literature implies that Type A individuals are oblivious to their Type A job preoccupied status which puts them at risk for illness (Rosenman and Friedman, 1974), this study suggest an alternative view. By their own admission, Type As in this sample report that they return back to work "too soon" following illness. This implies a
rational choice of returning back to normal functioning, at the possible expense of a prolonged recovery period.

Type A has both a direct effect and an indirect effect (through job preoccupation) on returning back to work too soon. Using the predictor variables, 19% of the variance is explained in returning back to work too soon. This implies that Type A and job preoccupation are relatively strong predictors of a hurried recovery.

There are a few other implications of these findings also. Those who return to normal functioning before they are physically able may be at risk for longer periods of recovery and for other illnesses due to weakened resistance. An additional hypothesis may be that the productivity of those who return back to work too soon is less than those who return after a full recovery. In other words, those who return back to work too soon may miss less days of work, but be no more productive or less productive than those who stay at home until full recovery and then return back to work at full functioning.

HEALTH BEHAVIOR

Given the possibility that Type A behavior impacts illness behavior, it is tempting to ask whether this is due to a general
disregard for health promotion in Type A individuals. Do Type A individuals neglect to take care of their physical health in order to meet work pressures?

The answer appears to be no. In fact, on all health habits examined, Type As do not disregard their health. Type A individuals are not more likely to smoke cigarettes, drink large amounts of alcohol, caffeine or to pay less attention to dietary issues of calories, fat, salt, fiber or sugar. They are also not less likely to have a regular doctor. Indeed, they are more likely to exercise and to use seatbelts. Only with regard to skipping meals are Type As less health conscious: Type As are more job preoccupied which, in turn, is associated with skipping meals.

We may interpret these results in light of previous work by Rosenstock (1966) and Becker (1974) who have developed the Health Belief Model. This model is based on the hypothesis that preventive action taken by a person to avoid a disease is due to the person's perception that he or she is personally susceptible and that the onset of the disease would have severe personal implications. In this case, Type As may engage in health promotion behaviors in order to avoid illness which might interfere with their work roles.

Locus of control is an additional variable which might impact whether individuals engage in preventive care. Seeman and Evans (1962) found that an "internal locus-of-control"
(belief that one can master, control, or alter the environment) is associated with taking a more active role in recovery from a prolonged illness than those with an "external locus-of-control" (belief that one is at the mercy of the environment). Regarding health behaviors and preventive care, Seeman and Seeman (1983) found that those with an internal locus-of-control were more likely to engage in self initiated preventive care. They were also more likely to rate their health as better, have fewer illnesses, and to be less dependent on their physicians.

The results of these two locus-of-control studies may have relevance to the Type A study here discussed. It is possible that Type A individuals have an internal locus-of-control. Thus, they will be likely to engage in preventive care in order to attempt to maintain control over their destiny.

This may also support the hypothesis that Type A is related to social desirability. Health promotion behaviors are seen as good by the general public; thus, Type A individuals may engage in health promotion activities.
Clinical Implications

How can the results of this study be used by physicians and other health related professionals to better design services for this population group?

Clearly, convenience is a crucial aspect to consider. The executives in this sample demand easy access, time-efficient health care which does not conflict with their normal routine.

Regarding the clinical importance of knowing the Type A-Type B status of a patient, a physician could gain insight to their patient's illness behavior by asking the three item hard-driving factor questions of the Type A scale. Those who score highly on this factor may need relatively easy therapeutic interventions that are not time-intensive, and closer follow-up in the recovery process.

However, since the health habits of Type A individuals are quite similar to that of Type Bs, Type A behavior may not be a factor in creating unhealthy lifestyles, at least regarding the health habits examined in the present study. Since Type A individuals tend to be highly educated, they are likely to benefit from health promotion efforts. They are also more likely to understand the adverse effects which come from unhealthy habits. In addition, Type As who fight the sick role
will possibly engage in health promotion efforts to avoid illness which takes them out of the work environment.

**Theoretical Implications**

In previous research, illness behavior appears to be impacted by gender, health status, structural issues (work, family) and perceptions of severity. These relationships can only be tested in part in this study given the homogeneous nature of this sample regarding health status, socioeconomic status, health insurance coverage and education.

Examining the gender issue, this study finds that Type A women respond very similarly to Type A men regarding the illness behavior. Perhaps given similar work environments and work demands, the gender difference in illness behavior seen previously does not hold.

Or, perhaps, as suggested by Cleary et. al (1982), gender differences found in previous research may be due to real differences in health and whether or not a woman gives birth during the study period. In this sample, health status is homogeneous. Thus, there are no real differences in health status which would impact differences in utilization behavior.

While the performance of the global Type A score is interesting, this study lends support to the importance of
examining components of Type A behavior as they relate to various outcomes. Given the ability of the time-urgency factor to predict delay, and the strength of the hard-driving factor in predicting the recovery factors, other very insightful information could most probably be gained by examining factor score outcomes.

This study has analyzed Type A behavior as a continuous variable, rather than as an ordinal variable as has been done in the majority of previous Type A studies. This use of Type A as a continuous variable provides stronger effect estimates than when using traditional Type A cutoffs.

The use of the Suchman model of illness behavior was invaluable to this study. This approach of analyzing illness behavior in stages has received a great deal of attention (Igun, 1979; Beland, 1982). In analyzing the propensity to seek medical care in time sequences, the decision making process can be analyzed. The ordering of illness behavior in stages guides analysis such as path analysis which requires a temporal ordering of dependent variables.

However, the decision making process regarding illness and health issues is undoubtedly more complex than discussed here. Additional studies will need to examine family roles and other roles, in addition to the work role which has been the focus of this study.
The findings that Type A relates to illness behavior, but not to health behavior, is of great interest. This may generate speculation that the relationship of Type A to coronary heart disease found in the 1970's is a cohort effect. Earlier cohorts may have been less likely to benefit from the health promotion efforts of the 1970's and 1980's. Younger cohorts have spent their lives with an understanding of the adverse effects of smoking, high cholesterol diets, and other risk factors. Thus, we may be seeing a relationship of Type A to coronary heart disease modified by health promotion efforts.

It is difficult for this study to draw conclusions regarding how the value for health relates to the value for occupational success. The results do, however, imply that good health and occupational success are coinciding values rather than competing values for Type A individuals.

Many studies have suggested that laypersons generally define illness in terms of the ability or nonability to carry out activities. Thus, what people perceive as illness is, in part, deviance from their own standard of normality based on everyday experiences. Mechanic (1978) has discussed a general theory of help-seeking which includes the considerations of how illness disrupts family, work, and other social activities. This study supports the importance of work considerations in help-seeking behavior.
While the work of Parsons has been critiqued for its inability to explain variations in illness behavior (Cockerham, 1986), it is nevertheless useful in examining illness from an ideal-type perspective. Parsons' conception of the sick role is limiting, since it fails to incorporate biological notions of illness into its theoretical structure. This Type A study supports the need for a perspective which synthesizes physiological and social factors. If we realize the limitations of Parsons' work, we can still appreciate the insights gained in viewing health and illness as sociological events, as well as physiological phenomena.

Parsons work on the sick role has also been criticized for its difficulty in explaining illness behavior for chronic conditions. Since this study has primarily focussed on illness behavior for acute conditions, it will be necessary for future studies to address chronic illness behavior of Type A individuals. The emphasis on the relationship of Type A behavior and myocardial infarction has tended to emphasize acute responses to cardiac symptoms. Heart disease, however, must be analyzed from a chronic illness perspective as well.

If we hold to Parson's proposal that a person is ill when he or she thinks she is ill, we find great variation in definitions of illness and decisions to seek medical care. These definitions and decisions are made in a social context which impacts
important decisions, such as the decision to delay in seeking medical care.

CONCLUSION

This study has supported the general hypothesis that Type A behavior is related to the illness behavior process. While the results point to both direct and indirect effects of Type A behavior on illness behavior, the predictive power of Type A behavior is weak to moderate in this study.

This study has not supported the general hypothesis that Type A behavior is related to health behavior. Type A individuals appear to engage in health promotion behaviors as frequently as their Type B counterparts.

The models proposed here must be tested in a larger prospective study. Undoubtedly, in correcting for measurement error, the relationships proposed will become clearer as larger studies examine the intricate relationship of Type A behavior, the work environment, illness behavior and health behavior.

It is with this hope of a larger project in the future that this dissertation is respectfully submitted to the Department of Sociology at Case Western Reserve University.
APPENDIX 1

1. First we would like to ask you a few questions about you and your family. Please check or write in your answers.

1. Your Age? ______ years  

2. Sex? ( ) Male ( ) Female

3. Marital Status?
   ( ) Married  ( ) Single
   ( ) Widowed  ( ) Separated, Divorced

4. If you are married now, for how long have you been married?
   ______ years

5. What is the highest level in school you have completed to date?
   ( ) grade school/junior high  ( ) some college
   ( ) some high school  ( ) college graduate
   ( ) high school graduate  ( ) some graduate school
   ( ) technical school  ( ) graduate degree

6. What type of work do you do?
   ( ) upper management  ( ) administrative staff
   ( ) middle management  ( ) clerical, other staff

7. For how many years have you been with the present company?
   ______ years

8. Who do you live with? (Check all that apply)
   ( ) spouse  ( ) children
   ( ) friends  ( ) other relatives
   ( ) live alone

II. In the next section we will ask you for more specific information about your health and lifestyle. Again, please check or fill in your answers.

1. Some people have chronic conditions, or recurring health problems, such as allergies, heart trouble, high blood pressure, diabetes, back trouble or the like. Do you have a chronic condition of any kind?
   ( ) No——please go on to question 2
   ( ) Yes—if yes, what is this health problem?

Has this condition limited the kind or amount of work you can do?

( ) No
( ) Yes——( ) a great deal
          ( ) somewhat
          ( ) a little

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2. Please check which medications you take regularly (at least once a week).

( ) aspirin Tylenol ( ) diet pills
( ) sleeping pills ( ) antacids (such as Tums, Maalox)
( ) vitamins ( ) laxatives
( ) tranquilizers ( ) breathing medication
( ) other prescription or non-prescription medication (please fill in): ______

( ) do not take any medications regularly

3. Do you smoke? ( ) No, never have—please go to question 4
( ) Quit Smoking—why? ________________
( ) Yes—( ) less than 1 pack per day
( ) 1-2 packs per day
( ) more than 2 packs per day

4. Do you ever drink alcohol? ( ) No—please go to question 5
( ) Yes—how often?
  one drink = a glass of wine ( ) 1-3 drinks per week or less
  a can of beer ( ) 1-2 drinks per day
  a mixed drink ( ) 2-3 drinks per day
  a shot of liquor ( ) 3-4 drinks per day
( ) 5 or more drinks per day

5. Do you participate in regular physical exercise for 20 minutes or longer? (For example, jogging, swimming, aerobics, etc.)
( ) No—please go to question 6
( ) Yes—how often?
  ( ) less than once a week
  ( ) 1-3 times a week
  ( ) more than 3 times a week

6. Do you use seat belts? ( ) always
( ) seldom
( ) most of the time
( ) some of the time

7. Do you eat breakfast? ( ) daily
( ) seldom
( ) most of the time
( ) some of the time

8. Do you eat "fast food"? ( ) daily
( ) seldom
( ) most of the time
( ) some of the time

9. How many cups of hot caffeinated beverages (such as coffee or tea) do you usually drink daily? ______ cups

10. How many cans or bottles of caffeinated soft drinks (such as Pepsi or Coke) do you usually drink daily? ______ cans bottles
11. Do you pay attention to:
   Total Calories ( ) yes ( ) no
   Salt ( ) yes ( ) no
   Cholesterol Fats ( ) yes ( ) no
   Fiber or Bulk ( ) yes ( ) no
   Sugar ( ) yes ( ) no

12. Indicate which statement best describes you:
   ( ) I am on a weight reducing diet
   ( ) I am on another special diet
   ( ) I am on no particular diet

13. Do you skip meals?
   ( ) daily ( ) most of the time
   ( ) seldom ( ) some of the time

14. How many hours of sleep do you usually get each night?
   _______ hours

III. The following questions deal with your use of doctor services. Please check or fill in your answers.

1. When was the last time:
   A. you saw a doctor for a general check-up? _________ ago
   B. you had your blood pressure checked? _________ ago

2. Do you have a regular doctor? ( ) No——go to question 3
   ( ) Yes——specialty?
   ( ) internal medicine
   ( ) family medicine
   ( ) general practice
   ( ) Other: __________________________

3. In an average year, how many times do you receive care from a doctor?
   _________ times

4. In an average year, how many times do you receive care from any other health professional, such as a psychologist or a nurse practitioner?
   _________ times

5. How many days in the past year have you been a patient in a hospital?
   _________ days

   If you were hospitalized, for what reason?
   __________________________________________________________
   __________________________________________________________
6. What health insurance do you have? _____________________________
   How long have you had this type of insurance? _______________________
   Have you ever used the insurance to pay for your medical care?
     ( ) No——go to question 7
     ( ) Yes—if yes, how satisfied have you been with the plan?
       ( ) very satisfied
       ( ) somewhat satisfied
       ( ) somewhat dissatisfied
       ( ) very dissatisfied

7. Has your doctor ever advised a life-style change for you?
   diet ( ) no ( ) yes
   exercise ( ) no ( ) yes
   less smoking ( ) no ( ) yes
   reduce stress ( ) no ( ) yes
   less alcohol ( ) no ( ) yes
   other: (please fill in): _____________________________________________

8. If your doctor advised a life-style change for you (such as one of those listed above), do you
   think you would try to follow it?
     ( ) no
     ( ) yes, for a month or two
     ( ) yes, probably for more than two months

9. Some people follow the advice of their doctors in full, and some only in part. Can you
   remember a time when you did not completely follow a doctor’s advice?
     ( ) No——go to question 10
     ( ) Yes—why?
       ( ) what was advised was difficult
       ( ) what was advised was not necessary
       ( ) advice from family/friends made more sense
       ( ) what was advised cost too much
       ( ) your condition improved
       ( ) advice did not fit what you read or saw on TV
       ( ) other: _____________________________________________________

10. How great at risk are you for health or other problems due to the following: (Place an "X"
    along the line)

    I'M AT
    NO RISK  I'M AT
    GREAT RISK

    stress related to family   [___________________________________________]
    stress related to job      [___________________________________________]
    smoking tobacco           [___________________________________________]
    marijuana use              [___________________________________________]
    other drug use             [___________________________________________]
    drinking alcohol          [___________________________________________]
11. Please think back to this past summer. Since then, how often have you been bothered by the following? (Circle your answer)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ear Ache</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Headache</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diarrhea</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constipation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trouble Sleeping</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upset Stomach</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abdominal Pain</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Backache</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neck Pain</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Light-headedness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shortness of Breath</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12. The following is a list of reasons why people choose where they go for health care. Please place a "1" in front of the reason you feel is most important in choosing a health care facility. Then place a "2" and a "3" in front of the next two important reasons. Use the numbers only once.

- Office is easy to get to
- Cost is reasonable
- Able to develop a good relationship with doctor
- Doctor has good skills
- Insurance coverage is good
- No waiting or short wait to see a doctor
- Appointment is easy to get to
- Other:

13. For the following conditions listed, please circle where you would go for medical attention. 
Assume it is the middle of the day and you know that you need to be seen.

Circle: EMER for Emergency Room REGDOC for Regular Doctor URGCAR for Urgent Care Center SPEC for Specialist OTHER for Other

Example:

<table>
<thead>
<tr>
<th>Condition</th>
<th>EMER</th>
<th>URGCAR</th>
<th>REGDOC</th>
<th>SPEC</th>
<th>OTHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe chest pain</td>
<td>EMER</td>
<td>URGCAR</td>
<td>REGDOC</td>
<td>SPEC</td>
<td>OTHER</td>
</tr>
<tr>
<td>Burned hand</td>
<td>EMER</td>
<td>URGCAR</td>
<td>REGDOC</td>
<td>SPEC</td>
<td>OTHER</td>
</tr>
<tr>
<td>Fever</td>
<td>EMER</td>
<td>URGCAR</td>
<td>REGDOC</td>
<td>SPEC</td>
<td>OTHER</td>
</tr>
<tr>
<td>Cough</td>
<td>EMER</td>
<td>URGCAR</td>
<td>REGDOC</td>
<td>SPEC</td>
<td>OTHER</td>
</tr>
<tr>
<td>Vomiting</td>
<td>EMER</td>
<td>URGCAR</td>
<td>REGDOC</td>
<td>SPEC</td>
<td>OTHER</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>EMER</td>
<td>URGCAR</td>
<td>REGDOC</td>
<td>SPEC</td>
<td>OTHER</td>
</tr>
<tr>
<td>Fatigue (weak, tired)</td>
<td>EMER</td>
<td>URGCAR</td>
<td>REGDOC</td>
<td>SPEC</td>
<td>OTHER</td>
</tr>
<tr>
<td>A cut that may need stitches</td>
<td>EMER</td>
<td>URGCAR</td>
<td>REGDOC</td>
<td>SPEC</td>
<td>OTHER</td>
</tr>
<tr>
<td>Suspected broken arm</td>
<td>EMER</td>
<td>URGCAR</td>
<td>REGDOC</td>
<td>SPEC</td>
<td>OTHER</td>
</tr>
<tr>
<td>Twisted ankle</td>
<td>EMER</td>
<td>URGCAR</td>
<td>REGDOC</td>
<td>SPEC</td>
<td>OTHER</td>
</tr>
</tbody>
</table>
IV. In this next section, please check your answer.

1. When you are under pressure or stress, what do you usually do?
   ( ) Do something about it immediately
   ( ) Plan carefully before taking any action

2. When you listen to someone and this person takes too long to come to the point, how often do you feel like rushing him or her along?
   ( ) Frequently
   ( ) Occasionally
   ( ) Almost Never

3. If you tell your spouse or a friend that you will meet somewhere at a definite time, how often do you arrive late?
   ( ) Once in a while
   ( ) Rarely
   ( ) Never

4. When you were younger, did most people consider you to be:
   ( ) Definitely hard-driving and competitive
   ( ) Probably hard-driving and competitive
   ( ) Probably more relaxed and easy-going
   ( ) Definitely more relaxed and easy-going

5. Nowadays, do you consider yourself to be:
   ( ) Definitely hard-driving and competitive
   ( ) Probably hard-driving and competitive
   ( ) Probably more relaxed and easy-going
   ( ) Definitely more relaxed and easy-going

6. How was your temper when you were younger?
   ( ) Fiery and hard to control
   ( ) Strong but controllable
   ( ) No problem
   ( ) I almost never got angry

7. Do you ever set deadlines for yourself at work or at home?
   ( ) No
   ( ) Yes, but only occasionally
   ( ) Yes, once a week

8. At work, do you ever keep two jobs moving forward at the same time by shifting back and forth rapidly from one to another?
   ( ) No, never
   ( ) Yes, but only in emergencies
   ( ) Yes, regularly
9. How often do you bring your work home with you at night, or study materials related to your job?
   ( ) Rarely or never
   ( ) Once a week or less
   ( ) More than once a week

10. When you are in a group, how often do other people look to you for leadership?
    ( ) Rarely
    ( ) About as often as they look to others
    ( ) More often than they look to others

V. The next few questions deal with stress and the amount of support you receive when you are under stress. Circle the number which best reflects your answer on a scale of 1 to 10.

1. How would you rate the usual amount of stress in your life related to your home and family situation?
   Not Stressful
   1 2 3 4 5 6 7 8 9 10
   Very Stressful

2. How would you rate the usual level of stress in your life related to your job and other activities outside the home?
   Not Stressful
   1 2 3 4 5 6 7 8 9 10
   Very Stressful

3. How would you rate the usual amount of support you receive from your family during times when you are under stress?
   Not Supportive
   1 2 3 4 5 6 7 8 9 10
   Very Supportive

4. How would you rate the usual amount of support you receive from your friends and coworkers during times when you are under stress?
   Not Supportive
   1 2 3 4 5 6 7 8 9 10
   Very Supportive
VI. The next section asks you some specific questions about how your work effects you. Please circle the number which best reflects how well the statement describes you.

1. I often find it difficult to unwind at the end of the day.
   Not at all 1 2 3 4 5 6 7 8 9 Quite a bit 10

2. When I get home from work, I am often so preoccupied with what happened to me that I continue to talk about it with my spouse family.
   Not at all 1 2 3 4 5 6 7 8 9 Quite a bit 10

3. Even when I'm away from work, I spend a lot of time thinking about it.
   Not at all 1 2 3 4 5 6 7 8 9 Quite a bit 10

VII. The following questions deal with medical situations you might encounter.

1. It is the middle of the day and you are at work. You have had a bad cough for about a week and today you notice that you are coughing up a trace of blood.
   On a scale of 1 to 10, how serious do you think this is? (Circle a number)
   Not serious 1 2 3 4 5 6 7 8 9 Very serious 10
   Would you: (  ) see what happens tomorrow before calling a doctor
   (  ) call a doctor for advice maybe get appointment
   (  ) see a doctor today for sure

2. You woke up this morning with a bad sore throat and shaky chills. There's an important meeting at work today and people will know if you miss it.
   Would you: (  ) Go to work
   (  ) Stay home
   You do not feel better in two days time.
   Would you: (  ) Take the time to see a doctor
   (  ) Give it a few more days before seeking care
VIII. The following are a set of attitude statements. Please circle the number which best reflects how you feel.

<table>
<thead>
<tr>
<th>Statement</th>
<th>DEFINITELY FALSE</th>
<th>DEFINITELY TRUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. According to the doctors I’ve seen, my health is now excellent.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2. When I think that I am getting sick, I fight it.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3. When I’m sick I try to keep going as usual</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4. My health is a concern in my life.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>5. My body seems to resist illness very well.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>6. I feel better now than I ever have before.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7. I expect to have a very healthy life.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>8. When I am sick, I try to keep it to myself</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>9. Most people get sick a little easier than I do.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>10. I try to avoid letting illness interfere with my life.</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

IX. Here are some statements with which you may agree or disagree. Again, please circle your answer.

<table>
<thead>
<tr>
<th>Statement</th>
<th>STRONGLY DISAGREE</th>
<th>STRONGLY AGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. If a patient asks to read his own medical records, they should be given to him.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2. If a disease is not contagious, a patient should be allowed to leave the hospital even if the doctor disagrees.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3. A patient should make the final decision to go along with the doctor’s advice, even if that decision is to refuse treatment.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4. A terminally ill patient in the final stages or his family should decide if further treatment should be continued.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>5. Obedience and respect for what doctors tell you is most important.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>6. If doctors would discuss matters more with patients, everybody would be better off.</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
7. It's alright for people to raise questions with doctors about anything they tell you to do. ........................................ 1 2 3 4 5

8. The doctor ought to have the main say-so in deciding what to do about a person's health problem. .............................. 1 2 3 4 5

9. It is alright to seek out a second opinion without telling the first doctor involved. .............................. 1 2 3 4 5

10. It's a good idea for other trained people to take over a doctor's responsibility for routine care (shots, physical exams). ........................................ 1 2 3 4 5

11. A doctor should discuss costs with his/her patients. ......................................................... 1 2 3 4 5

X. Some people think that the most important thing to have is money. Others think good health or brains are important. Which one of these things do you think is most important and next most important for getting ahead on the job? (Check your answer)

<table>
<thead>
<tr>
<th>MOST IMPORTANT</th>
<th>NEXT MOST IMPORTANT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good Health</td>
<td>( )</td>
</tr>
<tr>
<td>Education</td>
<td>( )</td>
</tr>
<tr>
<td>Money</td>
<td>( )</td>
</tr>
<tr>
<td>Brains</td>
<td>( )</td>
</tr>
<tr>
<td>Good Looks</td>
<td>( )</td>
</tr>
</tbody>
</table>

XI. The following list suggests some health problems and asks you to indicate the various ways in which you'd get advice about these problems. You might get advice from more than one source. Please place a "1" in front of the source you would use first and a "2" in front of your second choice.

1. A constant feeling of depression for about three weeks.

( ) family or relatives ( ) druggist
( ) self-help medical books ( ) a doctor
( ) friends or neighbors ( ) religious leader
( ) friends with health training ( ) no one
( other than your doctor) ( ) other: ___________________________
2. Unusual pain or bleeding
   ( ) family or relatives  ( ) druggist
   ( ) self-help medical books ( ) a doctor
   ( ) friends or neighbors ( ) religious leader
   ( ) friends with health training ( ) no one
   ( ) other than your doctor ( ) other: ____________________________

XII. The following questions ask about any time that you were sick and out from work. Circle the number which best reflects your answer.

<table>
<thead>
<tr>
<th>Question</th>
<th>STRONGLY DISAGREE</th>
<th>STRONGLY AGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I enjoy resting.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2. I could hardly wait to get back to my normal routine.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3. I was concerned about my ability to pick up where I left off.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4. I dreaded getting back to my normal routine.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>5. Time passed all too quickly.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>6. I was worried about what people might think about me.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7. I returned to work before I was really ready to.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>8. I worried about work accumulating.</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
XIII. The following is a list of symptoms that people have from time to time. Please read each symptom carefully and then tell us how serious you think the symptom is (where the higher number indicates more seriousness) and then fill in how long you would wait to seek care, if at all.

<table>
<thead>
<tr>
<th>SYMPTOM</th>
<th>HOW SERIOUS DO YOU THINK THIS REALLY IS?</th>
<th>HOW LONG WOULD YOU WAIT TO SEEK CARE?</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXAMPLE:</td>
<td></td>
<td>1 hour</td>
</tr>
<tr>
<td>Burned hand...1</td>
<td>2 3</td>
<td>( ) would not seek care</td>
</tr>
<tr>
<td>Fever of 101°F...1</td>
<td>2 3</td>
<td>( ) would not seek care</td>
</tr>
<tr>
<td>Feeling edgy and nervous...1</td>
<td>2 3</td>
<td>( ) would not seek care</td>
</tr>
<tr>
<td>Painless lump in your neck...1</td>
<td>2 3</td>
<td>( ) would not seek care</td>
</tr>
<tr>
<td>Trouble sleeping...1</td>
<td>2 3</td>
<td>( ) would not seek care</td>
</tr>
<tr>
<td>Pressure behind your chestbone...</td>
<td>2 3</td>
<td>( ) would not seek care</td>
</tr>
</tbody>
</table>

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE. PLEASE RETURN IT TO US IN THE ENVELOPE WE HAVE PROVIDED FOR YOU.
APPENDIX 2
UNIVERSITY HOSPITALS OF CLEVELAND
INSTITUTIONAL REVIEW BOARD FOR HUMAN INVESTIGATION

TO: Dr. Jack Medalla
Department Chairman

The University Hospitals Institutional Review Board has reviewed the proposal
Submitted by Sonia Allegro MA, Drs. S Tward and J Medalla
Entitled Health and Illness behavior of Type A individuals (05-86-108)

Please be advised that with respect to
☐ The rights and welfare of the individuals.
☐ The accommodation of the methods to be used to secure informed consent.
☐ The risks and potential medical benefits of the investigation, the Board considers this project

☒ FULLY ACCEPTABLE, WITHOUT RESERVATION
☐ NOT ACCEPTABLE FOR REASONS NOTED

REMARKS:

5/14/87

☐ New
☒ Renewal
☐ Addendum

FOR OMA USE:
Type Project ☐ New ☑ Renewal ☐ Addendum
Human Risk ☐ Yes ☐ No

SOURCE OF SUPPORT:
☐ Departmental ☐ Outside Funding

Agency(Potential) ☐ YES Agency Number

Are any of the following involved? ☒ No ☐ Yes, those checked
☐ Minors ☐ Fetuses ☐ Abortuses ☐ Prisoners ☐ Pregnant
☐ Mentally Retarded ☐ Mentally Disabled

CC: Investigator, OMA

This IRB operates under the following general assurances and identification numbers:

108
APPENDIX 3
EXAMPLE RESULTS BY ANOVA

TABLE 7

REJECTION OF THE SICK ROLE BY TYPE A

<table>
<thead>
<tr>
<th>Type</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>F ratio</th>
<th>F prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type B</td>
<td>36</td>
<td>14.3</td>
<td>2.7</td>
<td>3.044</td>
<td>.049</td>
</tr>
<tr>
<td>Type A-B</td>
<td>133</td>
<td>14.7</td>
<td>2.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type A</td>
<td>39</td>
<td>15.7</td>
<td>2.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
TABLE 8

VALUE FOR CONVENIENCE IN A HEALTH CARE PROVIDER BY TYPE A

<table>
<thead>
<tr>
<th>Type</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>F_ratio</th>
<th>F_prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE B</td>
<td>35</td>
<td>.20</td>
<td>.58</td>
<td>.0801</td>
<td>.9231</td>
</tr>
<tr>
<td>TYPE A-B</td>
<td>124</td>
<td>.16</td>
<td>.51</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TYPE A</td>
<td>37</td>
<td>.16</td>
<td>.44</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
TABLE 9

RECOVERY IMPATIENCE BY TYPE A

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>F_ratio</th>
<th>F_prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type B</td>
<td>36</td>
<td>13.1</td>
<td>4.3</td>
<td>4.7</td>
<td>.01</td>
</tr>
<tr>
<td>Type A-B</td>
<td>129</td>
<td>13.5</td>
<td>3.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type A</td>
<td>37</td>
<td>15.3</td>
<td>4.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### TABLE 10

RETURN TO WORK "TOO SOON" BY TYPE A

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>F ratio</th>
<th>F prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type B</td>
<td>36</td>
<td>7.61</td>
<td>3.6</td>
<td>3.97</td>
<td>.02</td>
</tr>
<tr>
<td>Type A-B</td>
<td>132</td>
<td>8.68</td>
<td>2.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type A</td>
<td>38</td>
<td>9.55</td>
<td>3.7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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