LOCUS OF CONTROL AND HEALTH REGIME COMPLIANCE AMONG HYPERTENSIVE BLACK MALES

A THESIS

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DELORIES HILLIARD, R.N., B.S.

DENTON, TEXAS

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Texas Woman's University

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We hereby recommend that the Thesis prepared under our supervision by Delories Hilliard entitled Locus of Control and Health Regime Compliance By Hypertensive Black Males

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To protect individuals we have covered their signatures.

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CHAPTER 1

INTRODUCTION

The recognition of compliance as an important and essential component of effective patient care is well documented. Nurses, physicians, therapists, and others involved in direct patient care express concern over the issue of inadequate compliance with medical regime by the population served.

As attention to the area of compliance increases, research is being directed toward identifying variables believed to influence the degree of patient compliance. Literature focusing on compliance refute the belief that such behavior occurs as a matter of course or more specifically, by chance. Just the opposite is true, compliance is viewed as a directional behavior involving the catalytic interaction of multiple variables. The dilemma surrounding patient noncompliance is reduced by exploring and delineating these influencing variables. Until the time when sufficient understanding of patient compliance and noncompliance occurs, the process of ascertaining variables influencing these behaviors becomes an unending quest for all investigators.

This study was concerned with the examination of the variable locus of control and its influence on patient compliance for a specific medical disorder, essential hypertension. Locus of control is identified as one of the predictors of human behavior. There are two components of locus of control existing in contrast to each other--internal and external control. Description of the variable locus of control emphasizes those behaviors of an individual that are attributable to his beliefs of internal or external control. These components are believed to influence the extent to which an individual will or will not be compliant.

Despite evaluations in a variety of settings and circumstances, locus of control has received minimal examination in determining its effect on patient compliance with a prescribed medical regime. A deficit of research is noted in the area of minority populations in relation to locus of control and compliance. This study not only addressed the relationship between locus of control and patient compliance with medical regime but also explored this relationship as it is observed in a specific minority population sampled.

Results arising from this study will supplement existing knowledge and provide a new perspective from

which to view the issue of patient compliance. Through continued investigation by practitioners and researchers, the development of more effective compliance motivation models can be anticipated.

Problem of Study

This study examined the difference in compliance to prescribed health regime by internal and external controlled hypertensive black males.

Justification of Problem

The areas receiving primary importance addressed throughout this study were locus of control and compliance behaviors. These areas were examined as they relate to a medical disorder having greater incidence of occurrence in the black population. The importance of these issues, having been addressed independently in other studies, is increased when paired with the disorder, hypertension.

Despite the apparent inadequacy of previous studies in examining the possible relationships between locus of control and medical regime compliance by the hypertensive black male, the existing body of literature offers a wealth of information in the examination of these variables, independent of one another. Substantial

information is also available on the medical disorder, hypertension.

Two major reasons emphasizing the need for intensive investigation in the area of patient compliance by the hypertensive patient include (a) cardiovascular diseases, of which hypertension is classified, are the major causes of death in the United States and (b) of the 24,080,000 Americans having hypertension, the prevalence among blacks is not only higher than for whites, but blacks also suffer a higher mortality rate (American Heart Association, 1978; Kaplan, 1973; Kochar & Daniels, 1978). Hypertension is an incurable disease. With inattention it can result in strokes, congestive heart failure, and renal failure. Hypertension is a major risk factor involved in coronary artery disease (American Heart Association, 1978; Freis, 1974; Kochar & Daniels, 1978). In addition, little has been published in the area of investigating correlations between locus of control and compliance with medical regime by the hypertensive black individual.

The question of locus of control and medical regime compliance for the hypertensive black individual is directed toward the identification of significant relationships between variables. The purpose of

identifying significant relations is to increase current knowledge in the area of locus of control and medical regime compliance by the hypertensive individual. An additional purpose is to delineate compliance variables that would be descriptive of a specific minority population. Once identified, the positive/negative influence of these variables on compliance behavior could be predicted. The findings would provide useful information in the development of compliance motivating models such that medical interventions might be more effective.

In summary, the three areas addressed were hypertension, locus of control (internal and external), and patient compliance with medical regime. These areas have individually received much attention. However, a deficit exists in the examination of these areas to delineate possible interrelations. The fact that hypertension, as one of the cardiovascular diseases, is most prevalent among blacks is well-documented. Also, the importance of adequate, continued treatment for this condition in order to prevent its more serious complications cannot be minimized. The identification of variables that promote compliance with medical regimes for clients diagnosed as having this chronic, incurable

disorder is apparent. The paucity of information focusing on minorities and indicators of their compliance behaviors as related to specific medical disorders illuminates the need for further research in this area.

Theoretical Framework

The theoretical basis for this study was the social learning theory. This theory is one of personality and is viewed as integrative since it attempts to combine two diverse theories--reinforcement theory and cognitive or field theory (Rotter, 1975). The interaction of the individual and the environment is the basic focus of this theory. This interaction involves the individual's perception of the environment and the elements believed to be of value (Hilgard & Bower, 1975). Since man is characterized as a thinking organism possessing the capabilities of self-direction, it becomes obvious that such activities are actualized through interaction. Once these interactions occur, modification of behavior based on environmental stimuli begins.

Three concepts related to personality development are illuminated in the theory of social learning. The first concept, behavior, is the observable actions of an individual (Rotter, 1973). These actions are felt to be determined by the individual and his life space.

Thus, the interactional component of the theory is illustrated. Behavior is consequently described as having a directional quality (Rotter, 1973). A goal-directed image is projected. The individual, through environmental perceptions, adjusts his behavior to the extent that a desired goal may be attained. As environmental stimuli constantly changes, so does behavior. The modifiability of behavior is thereby illustrated.

The goal-directed nature of behavior in learning leads to the second concept of this theory, expectancies. Expectancies are viewed as the "probability that a particular reinforcement will occur as a function of a specific behavior in a specific situation" (Rotter, 1973, p. 107). Anticipation of a reinforcement fosters the continuation of behaviors and behavior patterns. If expectancies are consistently unmet, the specific behavior will cease to occur for the specific situation.

Reinforcements, the third concept, are the catalysts impacting more directly on expectancies which, in like manner, affect specific behaviors. Classified as positive or negative in nature, reinforcements "change behavior in some observable way by either increasing (positive) or decreasing (negative) the potentiality of

its occurrence" (Rotter, 1973, p. 112). Consequently, behavior potentials are changed since reinforcements function in the alteration of the individual's expectancies. Social learning theory views the role of rewards as both conveying information about optimal responses in a given situation and as providing incentive motivation for a given behavior because of anticipated reward (Hilgard & Bower, 1975). In contrast to other theories on learning, social learning theory also proposes that significant amounts of learning are done "vicariously," that is, through observing another person demonstrating the response and then imitating this behavior (Hilgard & Bower, 1975).

For this study, the social learning theory is especially applicable. This theory is based on the individual's behavior (actions) that carries a certain expectancy (probability) that a specific reinforcement will occur in a given situation. This study examines compliance with regime as the end result of the learning process identified in social learning theory. The stimulus-response nature of the theory is apparent in the dilemma surrounding compliance and noncompliance, in that individual response to a stimulus, based on anticipated outcome, also occurs.

Assumptions

The assumptions of this study were:

1. Reinforcements strengthen specific behavioral expectancies for future reoccurrence.

2. Locus of control is an indicator of learned social behaviors and can be measured by an instrument.

3. Variables exist that are indicators of compliant behavior.

4. Compliant behavior can be predicted and changed.

Hypothesis

This study tested the hypothesis there is no difference in the health regime compliance scores of internal hypertensive black males and external hypertensive black males.

Definition of Terms

The major terms utilized in this study were defined and interpreted as follows:

1. Locus of control

Theoretical definition--the degree to which an individual believes a reinforcement is contingent upon his behavior (Davis & Phares, 1967).

Operational definition--a numerical score as measured by the Personal Opinion Questionnaire (Rotter, 1966) which assesses locus of control.

2. Internal locus of control

Theoretical definition--belief that one's behavior influences the reinforcement received (Rotter, 1966).

Operational definition--a score of less than seven as measured by the modified Personal Opinion Questionnaire (Rotter, 1966).

3. External locus of control

Theoretical definition--belief that one's behavior is independent of the reinforcement received since such reinforcements are controlled by chance, luck, or powerful others (Rotter, 1966).

Operational definition--a score of seven or above as measured on the modified Personal Opinion Questionnaire (Rotter, 1966).

4. Patient compliance

Theoretical definition--adherence to a prescribed health regime.

Operational definition--a score of 48 or above as measured on the Health Regime Questionnaire (Sackett & Hayes, 1975).

5. Health regime

Theoretical definition--a regulated system of instructions and recommendations designed for the promotion of health of an individual.

Operational definition--prescribed regime of the subjects as provided by their respective physician.

6. Essential hypertension

Theoretical definition--an unstable or persistent elevation of blood pressure above the normal range of unknown cause (Kaplan, 1973).

Operational definition--a systolic blood pressure of greater than or equal to 140 mm Hg and/or a diastolic blood pressure greater than or equal to 90 mm Hg as measured by a sphygmomanometer (Brunner, Emerson, Ferguson, & Suddarth, 1970).

Limitations

The limitations of this study were:

1. Variability in subjects' income level.
2. Variability in subjects' educational level.
3. Marital and social status.
4. Characteristics inherent in internally controlled individuals.

5. Reliability and validity unknown on revised Personal Opinion Questionnaire and Health Regime Questionnaire.

Summary

This study investigated the variables, locus of control and health regime compliance. This study examined the difference in compliance to prescribed health regime by internal hypertensive black males and external hypertensive black males. Previous studies have been inadequate in investigating these variables together. Since compliance is an integral component in the effective management of hypertension and its complications, identification of influencing variables is important. Previous studies indicated hypertension was more prevalent in blacks than in other races. Although black females had a greater incidence of hypertension than black males, the disorder was tolerated more poorly by the latter. This study was designed to increase existing knowledge on compliance and locus of control. The social learning theory was used as the theoretical framework for this investigation.

CHAPTER 2

REVIEW OF LITERATURE

The development of improved medical techniques and therapeutic regimes has impacted significantly on the health care delivery system. With the advent of these measures, utilization of hospitals and clinics has become more acute crisis in nature. This is in contrast to past trends for utilization of medical facilities. As a result, more individuals are given "at home" responsibility for their health care (Marston, 1970). Inherent in this responsibility is adherence to specific instructions provided by health professionals such as physicians, nurses, and others.

An assumption to be addressed is the behavioral expectations of the caregiver and recipient. Specifically, physicians, nurses, and others harbor certain beliefs that the patient will not only understand instructions as provided, but will in addition adhere to these recommendations without expection. In like fashion, the patient or recipient functions under the belief that amelioration of symptoms will occur. Consequently, when disorders become more chronic in nature and/or symptoms are not satisfactorily reduced,

adherence to prescribed regime suffers. Behavior of this nature can be viewed as noncompliant by caregivers. Once identified, the ongoing task of assisting the patient from a noncompliant to a compliant direction occurs.

Numerous and diversified studies have originated from the issue of compliance. These studies have investigated various aspects of medical regimes relating to compliance as well as demographic and psychosocial variables. The most interesting aspect of these studies is the inconsistency of the findings. Additionally, a paucity of investigative information exists with respect to racial minorities, certain chronic diseases, religion, and cultural influence as they relate to compliance behavior. To date, investigations exploring relationships existing between psychological and racial variables for a specific chronic medical condition are few. Due to the inconclusiveness of studies along with the meagerness of information for specific areas, it seems fair to assume that there remains much to be learned concerning the factors involved in helping patients take care of their health when in unsupervised settings.

Accurate understanding of this investigation and its findings can best be attained through a general

awareness of the areas addressed. Each of these areas has received individual attention. Compliance is examined first, followed by a discussion on locus of control, and the disorder hypertension.

Compliance

The role of compliance as a variable fostering patient improvement is universally recognized by health providers and caregivers in a variety of professional environments. These settings range from pediatrics to geriatrics, physicians' offices to hospitals. The importance assigned compliance transcends economical, ethnic, and educational boundaries. The influence of compliance is evident in all professions that are characterized by the helper role in society.

As previously reported, the issue of compliance with regime has received wide ranged attention. Numerous studies have explored the issue of compliance and noncompliance. These studies have made earnest attempts to explain the inadequate adherence to medical regime by individuals. These studies have, in general, focused on the specific areas of regime measurements, demographic components, and psychosocial variables.

As noted in Marston's (1970) overview on compliance, numerous studies have been concerned with the measurement

of compliance. Pill counts and drug excretion tests have arisen as the more popular means of assessing compliance (Marston, 1970; Podell & Gray, 1976). In the pill count measure, investigators have assessed the number of pills taken compared with medication instruction as an indication of patient compliance. Most obvious in reports reviewed is the marked inconsistencies for treatment of data. These discrepancies significantly impair the comparability of study findings and merely emphasize the need for additional studies in this area.

The problems of investigative inconsistencies have also plagued studies examining drug excretion level. The relevancy of findings in this area is not under scrutiny, since certain disease states necessitate the administration of medication for symptom reduction and control. Attention is directed toward the results of these investigations. The findings indicate an alarming number of individuals who are in noncompliance with their prescribed medical regime. For example, a listing of 33 studies which investigated diagnoses (tuberculosis, rheumatic fever, streptococcal infections, diabetes, etc.), demonstrated a wide range of noncompliance percentages, the most common percentages being 44 to 54 (Marston, 1970). Compounding the problems

inherent in compliance is the application of varied operational definitions in studies investigating the same phenomenon (Marston, 1970).

More recently, research efforts have examined compliance in demographic and psychosocial spheres. Jellinek's (1978) examination of compliance and demographic variables revealed noncompliant subjects were characterized as lower socioeconomic, black, and under 40 years of age. Although other studies have attempted to identify demographic variables descriptive of compliant and noncompliant populations, the majority have been unsuccessful in this effort. The largest portion of investigators agree that demographic factors such as race, age, sex, education, and religion are rarely predictive of compliance (Blackwell, 1976; Podell & Gray, 1976; Sackett & Hayes, 1976; Vincent, 1971).

Marston (1970) summarized findings from various investigations. The findings indicated that younger patients were more likely to comply although less likely to follow their regimes than were older patients. Studies on sex revealed sex did not correlate with compliance behavior. Other studies investigating the variables of socioeconomic status and education evidenced little association between these variables

and compliance. Only a few studies investigated the relationship between religion and compliance. These studies were still inconclusive. Examination of demographic variables independently has revealed them as rarely predictive of compliance.

The inconclusiveness of studies related to demographic variables, generated interest in exploring psychosocial variables related to compliance. Research in this area attempted to focus on more theoretically derived attitudes and the subject's perceptions than superficial demographic and background information. Psychosocial variables studied in relation to compliance behavior have included patient attitudes toward illness, regime complexity, knowledge of disease, social system influence, and doctor/patient relationship.

The belief systems of patients related to compliance revolves around the areas of perceived severity and susceptibility. Individuals believing they are vulnerable to a particular condition that is also severe in nature, are more likely to exhibit compliance behaviors (Becker & Maiman, 1975). Becker, Drachman, and Krischt (1974) demonstrated that mothers who believed their child was resusceptible to an infectious organism gave medication properly with greater incidence. In another

study by Charney, Bynum, and Eldredge (1967), compliance behavior improved when the illness was felt to be severe in nature rather than mild. The study by Becker and Maiman (1975) presented a health belief model that demonstrated the directional influence of perceived costs and benefits upon perceived susceptibility and severity. This influence acts to mobilize the individual, and thereby increase the likelihood of his taking recommended health actions. Should the susceptibility and severity of a disorder be reduced or costs exceed benefits, the likelihood of the individual complying with recommended instruction would be significantly reduced (Becker & Maiman, 1975; Blackwell, 1976).

A number of studies confirm the notion that patient noncompliance is enhanced when instructions provided are too numerous or complex in nature. Brody's (1980) examination of patient's recall of regimes for accuracy revealed 53% of patients sampled made one or more errors in the recall of their therapeutic regimes. In similar fashion, Curtis (1960) found that among elderly patients taking five or six medications a day, one medication error was consistently committed.

Contrary to general expectations, knowledge of disease and education failed to correlate with compliance.

Vincent (1971) found that those glaucoma patients who correctly took their medicine possessed accurate information about their regime and certain aspects of the disease. However, this knowledge failed to discriminate between compliers and noncompliers. A study by Weintraub, Au, and Lasagna (1973) showed that the patient's awareness of the importance of taking digoxin routinely was not related to adherence to the medical regime. Other studies support these findings on the lack of a significant relationship between knowledge of illness and compliance behavior (Marston, 1970; Sackett & Hayes, 1976; Schmidt, 1977).

Encouragement from family members and significant others appears to enhance compliance. A positive attitude of wives for their spouse's adherence to regimes was reported by Heinzelmann and Bagley (1970) with results indicating greater than 50% adherence by the husbands. The reverse was true when such support by wives was neutral or negative. Becker and Maiman's (1975) study reiterated the importance of social influence as the necessary cues to action for compliance.

Finally, reports addressing the relationship between the patient and caregiver were explored. One study on compliance motivation listed four factors that modify this health-related behavior. Of these factors, the

relationship between the doctor and the patient was number one (Becker & Maiman, 1975). Relevant issues addressed in this area are seeing the same vs. different physician, warmth vs. impersonality, and physician continuity (Becker & Maiman, 1975). Findings by Howard, Rickels, and Mock (1970) in a study of therapy styles of psychotherapists, evidenced low dropout rates among subjects were related to physicians demonstrating a more personalized, positive approach in dealing with their patients. Similarly, characteristics of patients and therapists have been found to influence the reactions to medication by neurotic outpatients (Marston, 1970).

Podell and Gray (1976) performed a study on noncompliance with poor patient attitude toward illness, therapy, and the physician as reasons for lack of adherence to perscribed regime. Interestingly, they further identified the consistent overestimation of compliance behavior by physicians, especially those of advanced practice years. This attitude would appear to reinforce the erroneous view of noncompliance as a patient problem. Additional studies (Blackwell, 1976; Jellinek, 1978; Schmidt, 1977; Vincent, 1971) lend support to the importance of a viable, personal interaction between the patient and the caregiver.

The relevancy of compliance to adherence to medical regimes remains undisputed. Since compliance has become the best documented but least understood variable, efforts continue to be directed toward variable identification. In the literature reviewed, investigative trends have changed from measurements of compliance, such as pill counts, to more diversified areas. Demographic variables when examined independently showed no significant relationship for sex, age, race, education, socioeconomic status, or religion. Of the psychosocial variables examined, perceived severity and susceptibility tended to influence the increase in levels of compliance. Knowledge of illness and complexity of the regimes were inversely related to compliance. Contrastingly, the quality of interactions occurring between patients and physicians were predictive indicators of adherence to therapeutic regimes.

From the review of literature on compliance, no concensus emerged concerning compliance determinants. The inconsistency of research findings indicates the need for future efforts in examining multiple factors related to compliance simultaneously rather than continuing previous research patterns of independent variable analysis.

Locus of Control

The effects of reward or reinforcement on behavior, such as compliance, depend partially on the individual's perception of the reward as contingent on his own behavior or independent of it. Locus of control embodies this notion of behavior shaping through reinforcements. Based on the social learning theory, locus of control is defined as "the degree to which individuals believe that the occurrence of reinforcement is contingent upon their own behavior" (Davis & Phares, 1967, p. 547). The role of reward or gratification by those interested in explanations on human nature is universally recognized. Reinforcement, as a behavioral motivator, is viewed as crucial to the acquisition and performance of various skills and knowledge. As reported by Rotter (1966) "a reinforcement acts to strengthen an expectancy that a specific behavior or event will be followed by that reinforcement in the future" (p. 2). The key concept inherent in the role of reinforcement is individual perception; the effect of a reinforcer being dependent upon whether or not a causal relationship is recognized.

Locus of control can best be viewed in terms of its subcomponents. These components, internal and external control, are commonly discussed in contrast to

one another rather than through comparisons. Individuals identified as internally controlled believe reinforcements follow as a consequence of one's behavior, whereas those classified as externally controlled harbor the belief that reinforcements are controlled by forces independent of behavior (Rotter, 1966). These independent forces are chance, luck, fate, and powerful others (Davis & Phares, 1967).

Originally conceived as a mediating variable of expectancy which primarily affects learning, locus of control emphasized that "people who differ in expectancies for control would perform differently in learning situations" (Ducette & Wolk, 1973, p. 420). Consequently, internals come to expect that actions and outcomes are correlated, and, therefore, they respond in a more adaptive fashion to reinforcements. Externals do not respond in this adaptive manner to situations, preferring to view them as out of their control. Studies addressing the concept locus of control were as varied as they were numerous. Major topics from which correlations on locus of control are assessed include race, stress, achievement, and medical disorders.

The study of locus of control and racial and socio-economic groups has indicated more consistent results.

These findings demonstrate differences between white and nonwhite groups. Rotter (1966), Joe (1971), and Garcia and Levenson (1975) found that blacks and lower socio-economic classes scored more in the external direction than did their white counterparts. Lefcourt (1966) and Joe (1971) demonstrated that groups whose social position is one of minimal power, either by class or race, tend to score higher in the external direction. Kinder and Reeder (1975) used four personal control items for the locus of control scale. Results failed to show internal consistency for blacks sampled for external control.

Another area examined in relationship to internal and external control is stress. Writings in this area cited in Houston (1972) emphasized reduced physiological arousal in stress for externals than for internal subjects. In one writing, Lazarus is quoted as stating, "the less control a person judges himself to have in a threatening situation, the more stressful it will be" (Houston, 1972, p. 249). Naditch's (1975) study of depressed patients demonstrated an association between anxiety and depression and external control. Changes in the heart rate responses of internal and external subjects under biofeedback conditions showed that internals could increase heart rates in the absence of external feedback

(Wennerholm & Zarle, 1976). Externals were better able to decrease their heart rate than were internals. This suggested a difference in conditionability for internals and externals.

Achievement studies related to locus of control also assist in the differentiation between internal and external control. Gold (1968) found that correlations were insignificant in comparing scores for test anxiety, academic aptitude, and academic success except for social desirability and intelligence. A study by Rotter (1966) also supported the stronger motivation of internals in achievement situations.

Examinations of studies on locus of control have suggested a relationship in the development of certain psychophysiological disorders. More commonly, a few reports have focused on hypertension. In Wennerholm and Zarle's (1976) study of such disorders, findings demonstrated that these individuals were more internal in nature, evidenced an overcompensatory attitude, increased use of denial and repression, and were increasingly concerned about behaving acceptably. MacDonald and Hall (1971) conducted a study of physical and psychological disability perceptions by internals and externals. Their findings indicated externals

viewed physical disabilities as more debilitating than emotional disabilities.

The discussion of the areas involved with locus of control served to demonstrate its merit as a variable potentially predictive of compliance behaviors. Since it is based on social learning theory and encompasses the basic principles of learning, locus of control can be viewed in terms of its effect on adherence to prescribed health regime. Compliance, on the other hand, is the behavioral component that can be shaped by psychological variables such as locus of control.

Hypertension

Hypertension, if viewed simply, is a sustained elevation of blood pressure above normal ranges (Kochar & Daniels, 1978). It is termed a silent killer because more than 7 million individuals afflicted by this disorder are not aware that they have it (American Heart Association, 1978; Kaplan, 1973; Kochar & Daniels, 1978). The target organs in hypertension are the brain, heart, and kidneys. Hypertension involves the aggravation and acceleration of atherosclerosis of coronary arteries (Freis, 1974; Pickering, 1974). If left untreated, hypertension can result in stroke, congestive

heart failure, and renal failure (Freis, 1974; Pickering, 1974).

The complex nature of hypertension and its prevalence among the black population is well-known. Figure 1 illustrates the prevalence of hypertension with respect to sex and race based on 1975 estimates.

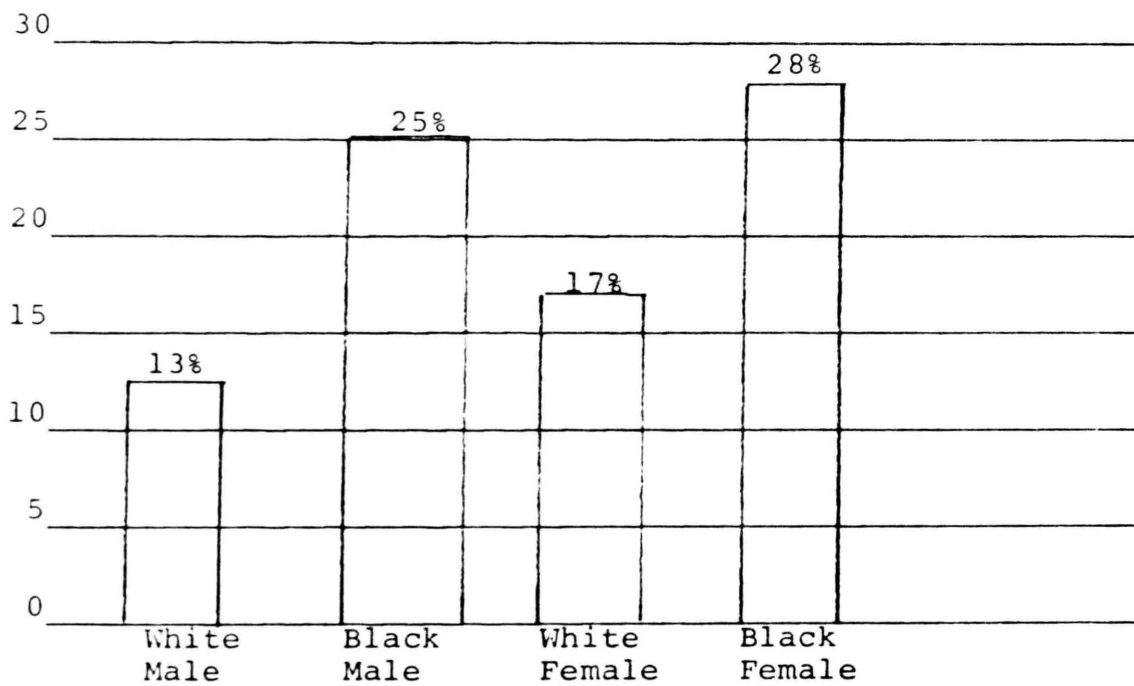

Figure 1, Hypertension prevalence by sex and race.

Note. From "Heart Facts" by American Heart Association, 1978, p. 2. Copyright 1977 by American Heart Association, Inc. Reprinted by permission (Appendix A).

According to the 1975 estimates, white males ranked at 13% and white females ranked at 17% in the prevalence of hypertension (American Heart Association, 1978). Black males ranked at 25% with black females ranked at 28% (American Heart Association, 1978). Thus, it is apparent that whites evidence a lower prevalence of hypertension than blacks.

Although the information indicates black females are affected at a higher percentage of prevalence than are black males, the disease is tolerated more poorly by the latter (Brunner et al., 1970; Kaplan, 1973; Pickering, 1974). Estimated costs of care by expenditure is displayed in Figure 2.

Physician and nursing services evidenced a cost of $3.2 billion with $15.3 billion covering the costs of hospital and nursing home services. Medication costs were $1.9 billion. Lost output due to disability was $8.1 billion. The total cost of cardiovascular diseases was $28.5 billion (American Heart Association, 1978).

A variety of variables have been investigated in relationship to hypertension. These variables include race, education, and environmental factors. James and Klienbaum's (1976) study comparing death rates of hypertensive whites and nonwhites, showed the morbidity rate

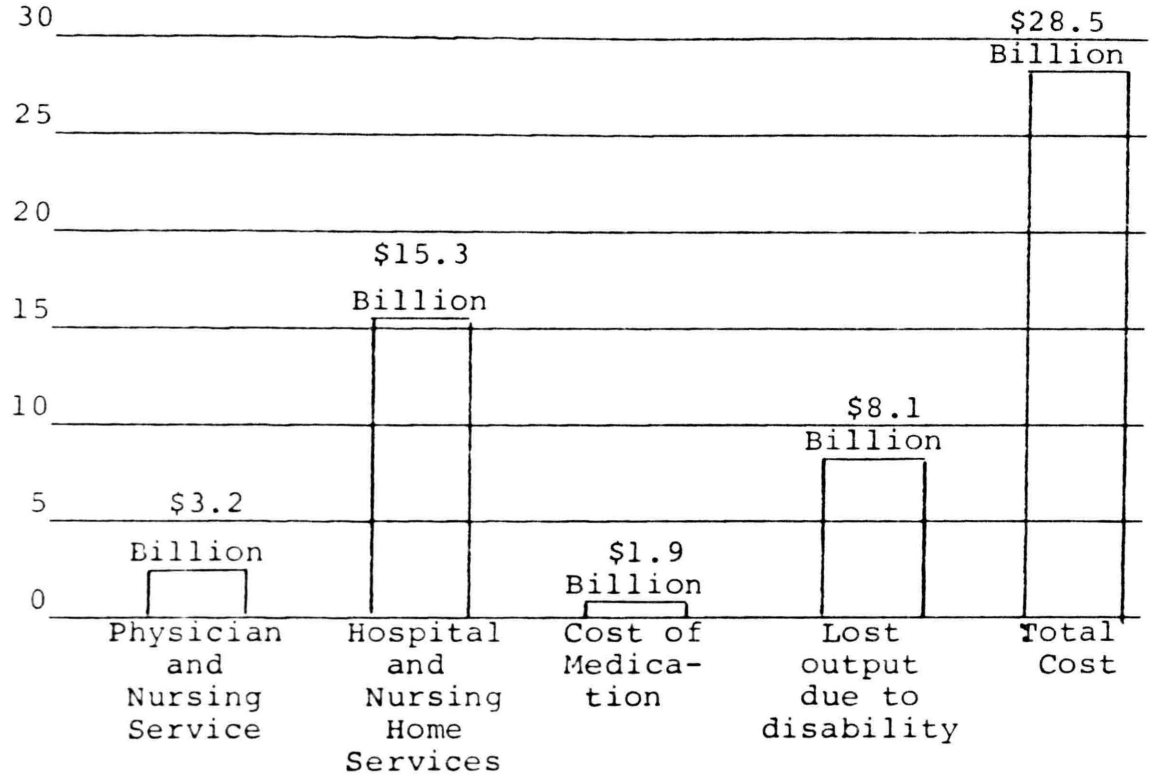

Figure 2. Estimated economic costs of cardiovascular diseases by type of expenditure.

Note. From "Heart Facts" by American Heart Association, 1978, p. 11. Copyright 1977 by American Heart Association, Inc. Reprinted by permission (Appendix A).

was twice as high for nonwhites as for whites. These results were more pronounced in areas of high socio-ecological stress. A study evaluating the relationships of hypertension to race, education, and socioeconomic factors indicated a higher incidence of hypertension among blacks of lower socioeconomic status (Race, Education and Prevalence, 1977). This study, as well as

one by Gutman and Benson (1971) further revealed that educational levels had a greater effect on levels of hypertension in blacks than in whites. Page's (1976) investigation of hypertension and culture emphasized the strong influence of acculturation on the development of this disorder. Seftel (1977) reported similar findings in his examination of rural and urban blacks in South Africa. The urban blacks' severity of hypertension was found to be comparable to that of urban blacks in America.

One in every six adults evidences some elevation of blood pressure, and hypertension is documented as the leading cause of disease and death (American Heart Association, 1978; Freis, 1974; Kaplan, 1973). Of those who know they have hypertension, many are untreated or inadequately controlled. Because hypertension is an asymptomatic disorder, many individuals are poorly motivated to continue with lifelong treatment. The greatest problem in the treatment of the hypertensive individual is to "gain the individual's adherence and compliance" (Freis, 1974, p. 150). As stated by Freis (1974), the challenge is to "reduce the number of noncompliers to an insignificant percentage" (p. 150).

Detection of hypertension is possible through a relative simple test with treatment readily available.

Despite the availability of treatment, compliance with prescribed health regime is necessary for adequate medical management. Investigations have addressed the delineation of variables predictive of compliance behavior. However, locus of control has not been examined as a compliance motivating variable.

Summary

In the literature reviewed increased attention was directed toward compliance behaviors. The theoretical basis for these behaviors is found in social learning theory. This theory is founded on principles of learning that the individual's behavior carries a certain expectancy that a specific reinforcement will occur in a given situation. These reinforcements can be positive or negative in nature, and consequently, impact on the degree to which a given behavior continues to occur.

The specific learned behavior examined in this study is compliance. Literature overview indicated lack of concensus concerning compliance determinants. Inconsistent findings in the review of demographic variables, measures of compliance, and psychosocial variables related to compliance indicate the need for examining multiple factors simultaneously rather than independently.

Locus of control is paired with compliance in investigating its impact. This concept encompasses the basic elements of social learning theory, namely, the effects of rewards or reinforcements on behavior. The subcomponents of locus of control are internal and external control. These divisions have been investigated as they relate to racial, educational, and environmental issues.

Hypertension, a silent disorder, evidences higher incidence in nonwhite populations. For the majority of individuals affected with this disorder, the cause remains unknown. What has been determined is the serious physiological complications if hypertension is left untreated. Since the disorder is chronic in nature, compliance with prescribed medical regime is essential. Statistical evidence of severity and susceptibility for nonwhites reiterates the need for identification of variables fostering compliance with regimes by the hypertensive population.

CHAPTER 3

PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

This chapter includes the research design and variables of the study, the setting in which the study was conducted, and the subjects who participated in the study. Also within this chapter are descriptions of the instruments used to score the data. Method of data collection and the manner in which the data was treated is discussed.

Exploratory in nature, this study examined the compliance to prescribed health regime by hypertensive black males of internal and external control. Review of literature evidenced a significant lack of studies assessing these variables for the hypertensive black male.

Setting

This study was conducted in an inner city, middle- to lower-income sector of a metropolitan area located in the north central region of Texas. Subjects were selected from three general practitioner physicians' offices. Once selected, each subject was interviewed in his place of residence within the metroplex.

Residences ranged from low-income apartments and frame houses to modest brick homes.

Population and Sample

The sample was composed of black males, 35 years and older, that had been recently diagnosed (2 years or less) as having essential hypertension. Each subject had been under the medical care of his physician for 4 months to 2 years. This time frame allowed for increased familiarity with the prescribed medical regime.

Subjects were obtained through convenience sampling. Each physician provided the investigator with a list containing the names and phone numbers of 25 subjects meeting the criteria. Of the 75 subjects, 32 agreed to participate in the study. Eleven subjects were obtained from the first and second office and 10 from the third office.

Protection of Human Subjects

In order to protect the human rights of the subjects, permission was first obtained from the Human Research and Review Committee of Texas Woman's University for conducting the study (Appendix B). Agency permission was obtained from each of the three physicians' offices (Appendix C). Each subject was provided an oral

explanation of the purpose of the investigation, procedure for data collection, risks, and benefits (Appendix D). Confidentiality of responses was guaranteed. Each subject was informed of his right to withdraw from the investigation at any time he felt the need to do so.

Three instruments were utilized in the investigation, the Demographic Data Form (Appendix E), Personal Opinion Questionnaire (Appendix F), and the Health Regime Questionnaire (Appendix G). Each subject was provided an oral explanation of the instruments and the procedure for their administration. Willingness to participate in the investigation was indicated by signature of the subject on the consent form (Appendix H). Once signed, the consent form was separated from the data packets to ensure confidentiality. No identifying marks or codes were placed on these packets.

Instruments

Three instruments were utilized in obtaining data from the subjects. The first instrument, the Demographic Data Form, was designed to elicit information about employment, age, income, and educational level. This information was used in describing the sample.

The Personal Opinion Questionnaire (reprinted with permission, see Appendix I) was the second instrument employed in the study. This instrument is an abbreviated 15-item version of Rotter's Standardized Internal-External Locus of Control Scale (1966). The scale by Rotter was reduced by the investigator of this study. Reduction was accomplished by selecting odd-numbered questions from the original 29-item standardized scale. The combination of this instrument with the other instruments used in this investigation necessitated reduction of the items. The validity and reliability of this modified version of the standardized locus of control scale was not determined.

The Personal Opinion Questionnaire provided information for classifying subjects as internal or external for locus of control. A score of less than 7 received an internal classification. The highest possible score was 13, and the lowest possible score was 0. Two items were filler items, and thus were not used in the scoring of subjects.

The third instrument (reprinted with permission, see Appendix J) utilized in this investigation was the Health Regime Questionnaire. This instrument was revised by the investigator. The questionnaire was based on the

original standardized compliance questionnaire compiled by Sackett and Hayes (1976). Revision was accomplished by selecting questions representative of the six areas of compliance: (a) regime complexity, (b) doctor/patient relationship, (c) perceived severity, (d) perceived susceptibility, (e) cost vs. benefit, and (f) social system influence. Four questions were selected from area A, five from area B, two from area C, one from area D, two from area E, and two from area F. A Likert-type scale was used in recording the responses of subjects. Subjects were instructed to indicate the item that best represented their beliefs. The reliability and validity of this instrument was not determined. A total of 16 items representing these areas was obtained. The instrument was used for computing scores for compliance with health regime. Possible range of scores was 16-80 for each item.

A panel of five experts examined the Health Regime Questionnaire to determine content validity. Each item was rated by a panel of health professionals, using a 5-point rating scale (Appendix K) to evaluate questions for clarity. The rating scale had the following assigned values: 1--very unclear, 2--moderately unclear, 3--slightly unclear, 4--moderately clear, and 5--clear.

A range of 5-25 for each item was possible. Five was the lowest possible score, and 25 was the highest. Items scored as moderately unclear or very unclear by three of the five scorers were omitted. The lowest total score assigned any one item was 19, and the highest for any one item was 25. Since no item fell below the criteria range of moderately unclear or very unclear, all items were included in the final instrument.

Data Collection

Data were collected through the administration of the three instruments by the investigator. A list of 25 subjects was provided by each physician of those patients meeting the criteria for inclusion in the investigation. The lists included the patient's name and telephone number. These telephone numbers were used to contact the subjects and assess their willingness to participate in the study. During the initial telephone contact, the purpose of the study, its risks and benefits, and the instruments utilized was explained. The individual then was allowed to express his willingness or lack thereof to participate in the study. Subjects agreeing to participate provided an address where the interview could be conducted. An appointment

was then made. Using this process the final sample of 32 subjects was obtained.

The second phase of the study involved the direct administration of the instruments. Prior to verbal administration of the instruments by the investigator, the study was reexplained, issues of confidentiality of responses discussed and risk/benefits reiterated. The subjects were then asked to sign the consent form for participating in the study. These forms were separated from the data collection packets to insure confidentiality of responses. Prior to administration of the instruments, the subjects were reminded that there were no right or wrong answers to any of the items presented, and their names would not appear on any of the data forms. Each subject was administered the three instruments, using the following sequence: Demographic Data Form, Personal Opinion Questionnaire, and Health Regime Questionnaire. The questions were read to each subject and verbal responses recorded on the instruments by the investigator. Following direct interview of all subjects, the list was destroyed to further reduce confidentiality risks.

Treatment of Data

Data packets were combined in the tallying of subjects' responses. First, results were totaled for each of the four areas listed on the Demographic Data Form. Using data obtained from the Personal Opinion Questionnaires, subjects were classified as either internal or external for control. The range for such classification was based on the tool's design to measure in the external direction. Next subject's compliance scores were tallied using responses obtained from the Health Regime Questionnaire. The data collected were of the ordinal type, thus were not suited for standard types of statistical tests such as the two sample *t*-test. Hence, the nonparametric test Mann-Whitney *U* (Noether, 1971) was used to compare internals and externals on total compliance scores as well as for each compliance related area. The .05 level of significance was used for each comparison.

CHAPTER 4

ANALYSIS OF DATA

The variables investigated in this study were compliance and locus of control. Internal and external locus of control are addressed specifically. Indicators of compliance were examined in additional analysis of data as they related to internal and external control classifications.

In this chapter the analysis of data is presented. First, the sample is described using data obtained from the Demographic Data Form. Next, the compliance scores of subjects classified as internal and external controlled are compared. Additional analysis of data and additional findings are discussed last.

Description of Sample

Description of the sample was accomplished through examining data obtained from the Demographic Data Form. The sample included 32 black males, recently diagnosed (2 years or less) as having essential hypertension. These subjects had been under the treatment of their respective physician for not less than 4 months nor longer than 2 years. Twenty-one of the subjects were

employed and 11 were unemployed. The subjects represented occupations classified in professional and nonprofessional categories. Their occupations ranged from janitors to school administrators.

The distribution of age among subjects is presented in Table 1. The two prominent age ranges represented were 35-44 years and 55-64 years. These ranges represented 25% and 28% of the distribution of ages, respectively. Nineteen percent of the subjects were represented in the 45-54 years and 65-74 years ranges. The range receiving the lowest representation was 75 years and over (9%).

Table 1

Distribution of Age Among Subjects

Age Ranges	Response Totals	Percentage
35-44 years	8	25
45-54 years	6	19
55-64 years	9	28
65-74 years	6	19
75 and over	3	9
Total	32	100

Distribution of income for subjects is displayed in Table 2. A total of 50% of the subjects had incomes below $10,000/year. Of the subjects making less than $10,000, 38% had incomes below $5,000/year. Distribution of income for subjects that had incomes of $10,000 or more was divided between two ranges. Twenty-five percent had incomes of $10,000-$14,000/year and $15,000 and above/year. Representation was lowest in the $5,000-$9,000/year range.

Table 2

Distribution of Income Among Subjects

Income Ranges	Response Totals	Percentage
Below $5,000/year	12	38
$5,000-$9,000/year	4	12
$10,000-$14,000/year	8	25
$15,000 or above/year	8	25
Total	32	100

Table 3 shows all subjects had received some degree of formal education. Fifty-nine percent of the subjects represented the 6-12-grade range (n = 19). Nine percent represented the 1-5-grade range. Sixteen percent of the distribution was noted for the 1-2 years of

college range and also for the college graduate range. There was no representation of subjects for the 2.5-4 years of college range. Thus, 68% of the subjects were distributed in the 1-12-grade ranges, and the remaining 38% of the subjects represented the range of 1 year of college to college graduate.

Table 3

Distribution of Educational Levels Among Subjects

Level Completed	Response Totals	Percentage
No formal education	0	0
1-5 grade	3	9
6-12 grade	19	59
1-2 years college	5	16
2.5-4 years college	0	0
College graduate	5	16
Total	32	100

Findings

The hypothesis tested stated there is no difference in total compliance scores for health regime by internal hypertensive black males and external hypertensive black males. To determine if the internal group was

different from the external group on total compliance score, the Mann-Whitney U test was used.

In Table 4 the means and standard deviations for internals and externals on total compliance scores are presented. Means for total compliance scores for internal and external subjects were 30.6 and 35.2, respectively. Comparison of the means of the two groups revealed no difference. Standard deviations for total compliance scores for internal and external subjects were 7.3 and 6.9, respectively. As in the comparison of means, no difference was noted. The Mann-Whitney U test revealed that the groups were not different ($U = 76$, $p = .117$) at the .05 level.

Table 4

Means and Standard Deviations on Total Compliance Scores for Internals and Externals According to Mann-Whitney U

Group	Means	Standard Deviation
Internals (N = 21)	30.6	7.3
Externals (N = 11)	35.2	6.9

Additional analysis of the data was performed. The compliance scores of internals and externals were compared to the six areas identified as indicators of

compliance. These areas are regime complexity, doctor/patient relationship, perceived severity, perceived susceptibility, costs vs. benefits, and social system influence. The Mann-Whitney U was used in the treatment of data. The means and standard deviations for selected areas of compliance for internals and externals are presented in Table 5. Data presented reveals no significant difference between total compliance scores for externals and internals for five of the six areas of compliance. The five areas not affected by locus of control were regime complexity, perceived severity, perceived susceptibility, cost vs. benefits, and social system influence.

One area did reach the level of significance. This area was doctor/patient relationship. For the area doctor/patient relationship, a mean score of 11.8 was found for externals and a mean score of 8.5 for internals. The standard deviation for internal and external subjects for doctor/patient relationship was 2.7. The Mann-Whitney U value was 47 and $p = .01$. Thus, doctor/patient relationship demonstrated a difference in compliance scores for internal and external hypertensive black male subjects.

Table 5

Means and Standard Deviations for Selected Areas of Compliance for Internals and Externals According to Mann-Whitney U

Groups	Regime Complexity		Doctor/Patient Relationship		Perceived Severity		Perceived Susceptibility		Costs vs. Benefits		Social System Influence	
	Means	S.D.	Means	S.D.	Means	S.D.	Means	S.D.	Means	S.D.	Means	S.D.
Internals (N = 21)	7.5	2.8	8.5	2.7	5.7	1.7	2.0	1.1	3.1	1.8	3.8	2.3
Externals (N = 11)	7.9	1.9	11.8	2.7	5.8	2.1	2.1	1.2	3.9	1.5	3.5	2.3
Mann-Whitney U	99		47		116		113		72		123	
p-value	.69		.01		.83		.83		.22		.76	

Further analysis of the data involved examination of compliance with locus of control and the demographic variables age, employment, income, and education. First, locus of control scores and compliance scores were compared using linear regression techniques (Table 6). This analysis revealed that compliance scores were not affected at the level of significance when locus of control was introduced ($R = .27$, $p < .14$).

Table 6

Analysis of Variance Comparing Locus of Control with Compliance Among Subjects

Analysis of Variance	df	Sum of Squares	Mean Square	F	Significance
Regression	1	6.76	6.76	2.30	$p < .14$
Residual	30	88.46	2.94		

The second phase of the regression analysis involved the examination of compliance with locus of control and the demographic variables age, employment, income, and education. This analysis was performed to determine if the compliance score could be predicted from these variables. Analysis of variance comparing compliance with demographic variables and locus of control is presented in Table 7.

Table 7

Analysis of Variance Comparing Compliance with Demographic Variables and Locus of Control Among Subjects

Analysis of Variance	df	Sum of Squares	Mean Square	F	Significance
Regression	4	32.44	8.11	3.49	$p < .02$
Residual	27	62.80	2.32		

The analysis revealed that knowing the demographic data does improve the predictive capabilities of the caregiver ($R = .58$, $p < .02$). The multiple-regression equation obtained yielded:

compliance = -.705 x Education - 1.831 x (0 if unemployed; 1 if employed) + .599 x Income + .060 x LOC score + 5.91

Using this equation, 33.6% of the variation in the compliance score can be explained. The manner in which each variable affects the compliance score can be determined by looking at the sign of the coefficients. Recall, that the lower the compliance score, the more compliant the individual is judged to be. From the equation, the following relationships are seen: (a) the higher the education the more compliant, (b) unemployed subjects tended to be less compliant than employed

subjects, (c) the higher the income, the less compliant, and (d) the more external for control, the lower the compliance. Age did not add any information to the equation, thus it was not a significant factor.

Summary of Findings

In summary, there is no difference in the compliance scores of internal and external hypertensive black males ($p = .117$). Furthermore, at the .05 level of significance, there was no relationship between compliance and locus of control ($R = .27$, $p < .14$). Through further analysis of data, a relationship between compliance and the demographic variables and locus of control was found ($R = .58$, $p < .02$). These variables can explain 33.6% of the variation in compliance.

CHAPTER 5

SUMMARY OF THE STUDY

This study examined the compliance to prescribed health regime by internal and external hypertensive black males. Only one hypothesis was examined in this study. The hypothesis stated there is no difference in the health regime compliance scores of internal hypertensive black males and external hypertensive black males. Social learning theory was the theoretical basis for this study. The theory is based on the individual's behavior that carries a certain expectancy that a specific reinforcement will occur in a given situation. This study examined compliance with health regime as the end result of the learning process identified in social learning theory.

Hypertension is the disorder used for investigating the compliance behaviors of internally and externally controlled black males. The complex nature of hypertension and its prevalence among the black population is well-known. Detection of hypertension is possible through a relatively simple test. Treatment for this disorder is readily available. Despite the availability

of treatment, compliance with prescribed health regime is required for adequate medical management.

Summary

The study involved the direct interview of middle- and lower-income subjects residing in a metropolitan area of the north central region of Texas. Subjects were obtained from three physicians' offices. Inclusion of subjects in the study was based on the criteria that they must be black, male, 35 years or older, recently diagnosed (2 years or less) as having essential hypertension, and under their present medical regime for not less than 4 months. Using convenience sampling, a total of 32 subjects consented to participate in the study.

Three data collection instruments were used in the direct interview of the subjects. The Demographic Data Form, Personal Opinion Questionnaire, and Health Regime Questionnaire were used for data collection. These instruments were used to describe the sample, classify subjects as internal or external for locus of control, and determine compliance scores, respectively. The Mann-Whitney *U* test was used in the treatment of data.

Discussion of Findings

Findings of this study did not demonstrate a difference in compliance and locus of control for the sample investigated. Based on the findings, the hypothesis stating there is no difference in health regime compliance scores of internal hypertensive black males and external hypertensive black males was supported.

Previous studies on compliance did not investigate locus of control as an indicator of compliance. These studies principally investigated such common demographic variables as age, sex, race, income, education, and religion (Blackwell, 1976; Marston, 1970; Podell & Gray, 1976; Sackett & Hayes, 1976; Vincent, 1971; Weintraub et al., 1973).

Further analysis of data evidenced a significant finding. Comparison of locus of control and the six areas indicative of compliance was performed using non-parametric analysis. The six areas were regime complexity, doctor/patient relationship, perceived susceptibility, perceived severity, costs vs. benefits, and social system influence. Doctor/patient relationship was the only area significant ($p < .01$). Howard et al. (1970), Becker and Maiman (1975), and Marston (1970) supported the importance of a personal interaction between the patient and caregiver as a factor that influences

compliance behavior. Other studies (Blackwell, 1976; Jellinek, 1978; Schmidt, 1977) suggested that a viable, personal interaction between the patient and the care-giver was found to influence compliance behavior.

In this study the significance of doctor/patient relationship as a compliance motivator has four possible explanations. First, all the physicians were black, which might have influenced a more personal relationship through racial identity. Second, the majority of the subjects reported positive feelings toward their physician. The third explanation was the location of the physicians' offices. Each office was located in the area served. The locations provided increased accessibility for patients and offered a more personal health care environment. The fourth explanation is approximately 75% of the subjects saw the same physician during office visits. This last explanation finds support in a study conducted by Becker and Maiman (1975). The study found compliance to be improved when the same physician was seen during office visits.

Additional analysis of data was also performed using linear regression techniques. The .05 level of significance was not reached when locus of control was compared with compliance. However, when education, employment,

income, and age were added to the analysis, significant findings resulted. An equation that was predictive of 33.6% of the variation in compliance was formulated. Age did not add to the equation, and thus, was not significant. When the demographic variables and locus of control were examined collectively, knowledge of these variables improved the predictive capabilities for assessing compliance behaviors. This type of analysis differed from previous studies. The major difference reported in previous studies was potential compliance motivating variables were investigated independently.

Conclusions and Implications

The findings of this study emphasized the continued dilemma surrounding compliance behavior and compliance motivating variables. Based on the findings of this study, the following conclusions were made by the investigator.

1. Locus of control can be used to predict compliance behaviors for the sample studied.

2. The small sample size and the variability in educational and income levels were possible factors that influenced the outcome of this investigation.

3. The reliability and validity of the Personal Opinion Questionnaire and Health Regime Questionnaire were not known, and thus might have been factors influencing the findings of this investigation.

The findings of this study suggest three implications for nursing and applied disciplines. These implications are:

1. The level of understanding of nurses and other clinicians regarding the importance of identifying compliance motivating variables would be increased through continued research and observation of compliance behaviors during clinical practice.

2. Nurses should continue to assess the role of compliance variables in the management of health impairing disorders such as essential hypertension in the clinical setting.

3. Since additional findings demonstrated the relationship between the doctor and the patient as a significant factor influencing compliance, nurses in practice should be more aware of the nurse's influence on compliance.

Recommendations for Further Study

The following recommendations for further study are made:

1. Examination of compliance indicators in the determination of influences on compliance behavior.

2. Replication of this study using a larger sample size.

3. Replication of this study with the reliability and validity of the questionnaires determined.

4. Validation of the compliance equation formulated in this study.

APPENDIX A

National Center 7320 Greenville Avenue Dallas Texas 75231 214 750-5390

American Heart Association

WE'RE FIGHTING FOR YOUR LIFE

April 17, 1981

Delories Hilliard, RN
Texas Woman's University
7130 San Mateo #156
Dallas, TX

Dear Ms. Hilliard:

We are in receipt of your letter requesting permission to reprint graphs from the 1978 and 1981 HEART FACTS publication. These graphs include (a) hypertension prevalence by sex and race, U.S. adults age 20 and over: 1975 estimates and 1978 estimates, and (b) estimated economic costs of cardiovascular diseases by type of expenditure United States: 1978 and 1981.

The American Heart Association is pleased to grant you permission to reprint the above mentioned material one time only for you manuscript.

When reprinting, please use the following credit lines:

© Reprinted with permission.
American Heart Association.

We hope we have been of service to you on this matter.

Sincerely,

Mary Lou Schriefer
Chief, Creative Services
Assistant Director
Communications Division

/ds

APPENDIX B

TEXAS WOMAN'S UNIVERSITY

Human Research Committee

Name of Investigator: Delories Hilliard Center: Dallas

Address: 8350 Park Lane, #266 Date: 12/14/73

Dallas, Texas 75231

Dear Ms. Hilliard:

Your study entitled Locus of Control and Medical Regime Compliance by the Hypertensive Black Male

has been reviewed by a committee of the Human Research Review Committee and it appears to meet our requirements in regard to protection of the individual's rights.

Please be reminded that both the University and the Department of Health, Education and Welfare regulations require that written consents must be obtained from all human subjects in your studies. These forms must be kept on file by you.

Furthermore, should your project change, another review by the Committee is required, according to DHEW regulations.

Sincerely,

Estelle D. Young

Chairman, Human Research
Review Committee

at Dallas.

APPENDIX C

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE _____

GRANTS TO _____
a student enrolled in a program of nursing leading to a Master's Degree at Texas Woman's University, the privilege of its facilities in order to study the following problem.

What is the [illegible]

The conditions mutually agreed upon are as follows:

1. The agency (may) (~~may not~~) be identified in the final report.
2. The names of consultative or administrative personnel in the agency (may) (~~may not~~) be identified in the final report.
3. The agency (~~wants~~) (does not want) a conference with the student when the report is completed.
4. The agency is (willing) (~~unwilling~~) to allow the completed report to be circulated through interlibrary loan.
5. Other _____

Date: _____

_____
Signature of Agency Personnel

_____
Signature of Student

_____
Signature of Faculty Advisor

*Fill out & sign three copies to be distributed as follows: Original - Student: First copy - Agency; Second copy - TWU College of Nursing.

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE [illegible]

GRANTS TO [illegible]
a student enrolled in a program of nursing leading to a Master's Degree at Texas Woman's University, the privilege of its facilities in order to study the following problem.

[illegible]

The conditions mutually agreed upon are as follows:

1. The agency (may) (~~may not~~) be identified in the final report.
2. The names of consultative or administrative personnel in the agency (may) (~~may not~~) be identified in the final report.
3. The agency (~~wants~~) (does not want) a conference with the student when the report is completed.
4. The agency is (willing) (~~unwilling~~) to allow the completed report to be circulated through interlibrary loan.
5. Other _____

Date: 5/14/[illegible]

[illegible]
Signature of Agency Personnel

[illegible]
Signature of Student

Marge P. Johnson
Signature of Faculty Advisor

*Fill out & sign three copies to be distributed as follows: Original - Student: First copy - Agency; Second copy - TWU College of Nursing.

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE [illegible]

GRANTS TO [illegible]
a student enrolled in a program of nursing leading to a Master's Degree at Texas Woman's University, the privilege of its facilities in order to study the following problem.

"[illegible]"

The conditions mutually agreed upon are as follows:

1. The agency (may) (~~may not~~) be identified in the final report.
2. The names of consultative or administrative personnel in the agency (may) (~~may not~~) be identified in the final report.
3. The agency (~~wants~~) (does not want) a conference with the student when the report is completed.
4. The agency is (willing) (~~unwilling~~) to allow the completed report to be circulated through interlibrary loan.
5. Other _____

Date: [illegible]

[illegible]
Signature of Agency Personnel

[illegible]
Signature of Student

[illegible]
Signature of Faculty Advisor

*Fill out & sign three copies to be distributed as follows: Original - Student; First copy - Agency; Second copy - TWU College of Nursing.

APPENDIX D

VERBAL EXPLANATION OF STUDY

Hello, I am Delories Hilliard. I am a registered nurse and graduate student at Texas Woman's University. I would like for you to participate in a study designed to examine the personal opinions and beliefs of adult black males who have high blood pressure.

You will be asked to give verbal responses to questions on three forms. I will read the questions on the forms and record your verbal response. Completion of the forms will take approximately 15-20 minutes.

The risks involved in this study are (a) the possibility of public embarrassment, (b) improper release of data, and (c) possible anxiety experienced in answering the questions. I will attempt to reduce these risks by (a) separating the consent forms from the data forms once the data forms are completed, (b) responses will be reported in groups only, (c) your name and other identifying information will not appear on the forms, and (d) there are no right or wrong answers.

This study will update and add to existing knowledge about the black male population. If you are willing to participate in this study, please sign the consent form. You may withdraw from participation in the study any time during the administration of the forms.

APPENDIX E

DEMOGRAPHIC DATA FORM

Employed: Yes_____ No_____

If yes, indicate occupation_____

Age Range:
_____35-44 years
_____45-54 years
_____55-64 years
_____65-74 years
_____75 and over

Income Range:
_____Below $5,000/year
_____$5,000-$9,000/year
_____$10,000-$14,000/year
_____$15,000 or above/year

Educational Level Completed:
_____No formal education
_____1-5 grade
_____6-12 grade
_____1-2 years college
_____2.5-4 years college
_____College graduate

APPENDIX F

PERSONAL OPINION QUESTIONNAIRE

1. ___a. Children get into trouble because their parents punish them too much.
   ___b. The trouble with most children nowadays is that their parents are too easy with them.

2. ___a. One of the major reasons why we have wars is because people don't take enough interest in politics.
   ___b. There will always be wars, no matter how hard people try to prevent them.

3. ___a. The idea that teachers are unfair to students is nonsense.
   ___b. Most students don't realize the extent to which their grades are influenced by accidental happenings.

4. ___a. No matter how hard you try some people just don't like you.
   ___b. People who can't get others to like them don't understand how to get along with others.

5. ___a. I have often found that what is going to happen will happen.
   ___b. Trusting to fate has never turned out as well for me as making decisions to take a definite course of action.

6. ___a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.
   ___b. Getting a good job depends mainly on being in the right place at the right time.

7. ___a. When I make plans, I am almost certain that I can make them work.
   ___b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.

8. ___a. In my case, getting what I want has little or nothing to do with luck.
   ___b. Many times we might just as well decide what to do by flipping a coin.

9. ___a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.
___b. By taking an active part in political and social affairs, the people can control world events.

10. ___a. One should always be willing to admit mistakes.
___b. It is usually best to cover up one's mistakes.

11. ___a. In the long run, the bad things that happen to us are balanced by the good ones.
___b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.

12. ___a. Sometimes I can't understand how teachers arrive at the grades they give.
___b. There is a direct connection between how hard you study and the grades you get.

13. ___a. Many times I feel taht I have little influence over the things that happen to me.
___b. It is impossible for me to believe that chance or luck plays an important role in my life.

14. ___a. People are lonely because they don't try to be friendly.
___b. There's not much use in trying too hard to please people, if they like you, they like you.

15. ___a. What happens to me is my own doing.
___b. Sometimes I feel that I don't have enough control over the direction my life is taking.

APPENDIX G

HEALTH REGIME QUESTIONNAIRE

1. Is getting transportation to the doctor's office a problem?

Never	Occasionally	Half the time	Most the time	Always
1	2	3	4	5

2. Do you see the same doctor each office visit?

Never	Occasionally	Half the time	Most the time	Always
5	4	3	2	1

3. Is the doctor you are seeing friendly and courteous?

Never	Occasionally	Half the time	Most the time	Always
5	4	3	2	1

4. Do you take any medication prescribed for this illness or problem?

Never	Occasionally	Half the time	Most the time	Always
5	4	3	2	1

5. Do you take medications that have not been recommended by your doctor?

Never	Occasionally	Half the time	Most the time	Always
1	2	3	4	5

6. Is a family member or friend helpful in seeing that you are able to keep your appointments at the doctor's office?

Never	Occasionally	Half the time	Most the time	Always
5	4	3	2	1

7. Do you do any special things to try and keep healthy?

Never	Occasionally	Half the time	Most the time	Always
5	4	3	2	1

8. How serious do you consider your present illness to be?

Not at all serious	Not serious	Somewhat serious	Moderately serious	Very serious
5	4	3	2	1

9. Do you think the treatment you receive is likely to help your problem or illness?

Never likely	Occasionally likely	Likely half the time	Likely most the time	Always likely
5	4	3	2	1

10. Do changes occur in the way you feel physically when you do not follow your doctor's orders or instructions?

Never	Occasionally	Half the time	Most the time	Always
5	4	3	2	1

11. Is it difficult for you to follow your doctor's orders?

Never	Occasionally	Half the time	Most the time	Always
1	2	3	4	5

12. Do you restrict any types of foods or food seasonings you have been advised to avoid or cut down on by your doctor?

Never	Occasionally	Half the time	Most the time	Always
5	4	3	2	1

13. Is a family member or friend helpful in seeing that you are able to follow your doctor's orders?

Never	Occasionally	Half the time	Most the time	Always
5	4	3	2	1

14. Does your doctor allow you time to express your concerns about your illness or treatment plan?

Never	Occasionally	Half the time	Most the time	Always
5	4	3	2	1

15. Has your doctor advised you to cut down or stop smoking cigarettes or cigars?

No advice	No advice but stopped	Advised to cut down or stop and did
1	2	3

Advised to stop	Advised to cut down or stop but have not
4	5

16. When do you expect to get over this illness completely?

Never	Some day	A few years	A few months	Very soon
5	4	3	2	1

APPENDIX H

TEXAS WOMAN'S UNIVERSITY

Consent to Act as a Subject for Research and Investigation

(The following information is to be read to or read by the subject.)

1. I hereby authorize Delories Hilliard, R.N. to perform the following procedure(s) or investigation(s):

   To elicit and record responses to items listed on the Demographic Data Form, Personal Opinion Questionnaire, and Health Regime Questionnaire in assessing beliefs and health opinions of the hypertensive black male.

2. The procedure of investigation listed in Paragraph 1 has been explained to me by Delories Hilliard.

3. I understand that the procedures or investigations described in Paragraph 1 involves the following possible risks or discomforts:

   Possible anxiety in completion of questionnaires during the administration. Chance of possible embarrassment should the data forms be lost or misplaced.

4. I understand that the procedures and investigations described in Paragraph 1 have the following potential benefits to myself and/or others:

   Increasing existing knowledge about the hypertensive, black male client.

5. An offer to answer all of my questions regarding the study has been made. If alternative procedures are

more advantageous to me, they have been explained. I understand that I may terminate my participation in the study at any time.

Subject's Signature _____ Date _____

APPENDIX I

The University of Connecticut

STORRS, CONNECTICUT 06268

THE COLLEGE OF
LIBERAL ARTS AND SCIENCES
Department of Psychology

January 19, 1981

Delories Hilliard, RN
7130 San Mateo Blvd. #156
Dallas, Texas 75223

Dear Ms. Hilliard:

You have my permission to reproduce the I-E Scale for your research, providing you are supervised by or consult with someone who is trained in the use and interpretation of personality tests.

Very truly yours,

Julian B. Rotter

Julian B. Rotter
Professor of Psychology

JBR/isw

AMERICAN PSYCHOLOGICAL ASSOCIATION
1400 NORTH UHLE STREET
ARLINGTON, VA 22201

Telephone (Area Code 202) - 833-7600

Date: December 31, 1980

For: Study entitled: LOCUS OF CONTROL AND MEDICAL REGIME COMPLIANCE BY THE HYPERTENSIVE BLACK MALE

Delories Hilliard, RN
7130 San Mateo Blvd. #156
Dallas, TX 75223

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Clara Sky

Clara Sky, Permissions Office

APPENDIX J

McMASTER UNIVERSITY
Department of Clinical Epidemiology & Biostatistics
1200 Main Street West, Hamilton, Ontario, L8S 4J9
Telephone Area Code 416 525-9140

August 22nd, 1978.

Ms. Delories Hilliard,
8350 Park Lane,
Apartment #266,
Dallas, Texas.

Dear Ms. Hilliard:

As requested, I am enclosing a copy of the Compliance Questionnaire. I should just mention that the questionnaire has not been modified since the 1976 edition.

I wasn't sure whether you became aware of the questionnaire through our book on compliance or via some other reference. In the event you have not read the book, the citation is:

Compliance with Therapeutic Regimens, edited by D.L. Sackett and R.B. Haynes, published by Johns Hopkins University Press, 1976.

I am also enclosing some reference citations which may be of interest (if you do not already have them).

I hope this information is useful in your studies.

Sincerely yours,

Jane Sicurella

Jane Sicurella (Mrs.).

js
Encls.

APPENDIX K

HEALTH REGIME QUESTIONNAIRE

PANEL RATINGS FOR CLARITY

Scores

21 1. Is getting transportation to the doctor's office a problem?

Never Occasionally Half the time Most the time Always
1 2 3 4 5

23 2. Do you see the same doctor each office visit?

Never Occasionally Half the time Most the time Always
5 4 3 2 1

25 3. Is the doctor you are seeing friendly and courteous?

Never Occasionally Half the time Most the time Always
5 4 3 2 1

23 4. Do you take any medication prescribed for this illness or problem?

Never Occasionally Half the time Most the time Always
5 4 3 2 1

23 5. Do you take medications that have not been recommended by your doctor?

Never Occasionally Half the time Most the time Always
1 2 3 4 5

24 6. Is a family member or friend helpful in seeing that you are able to keep your appointments at the doctor's office?

Never Occasionally Half the time Most the time Always
5 4 3 2 1

20 7. Do you do any special things to try and keep healthy?

Never Occasionally Half the time Most the time Always
5 4 3 2 1

22 8. How serious do you consider your present illness to be?

Not at all serious Not serious Somewhat serious
5 4 3

Moderately serious Very serious
2 1

Scores

19 9. Do you think the treatment you receive is likely to help your problem or illness?

Never likely (5) Occasionally likely (4) Likely half the time (3)

Likely most the time (2) Always likely (1)

19 10. Do changes occur in the way you feel physically when you do not follow your doctor's orders or instructions?

Never (5) Occasionally (4) Half the time (3) Most the time (2) Always (1)

23 11. Is it difficult for you to follow your doctor's orders?

Never (1) Occasionally (2) Half the time (3) Most the time (4) Always

19 12. Do you restrict any types of foods or food seasonings you have been advised to avoid or cut down on by your doctor?

Never (5) Occasionally (4) Half the time (3) Most the time (2) Always (1)

23 13. Is a family member or friend helpful in seeing that you are able to follow your doctor's orders?

Never (5) Occasionally (4) Half the time (3) Most the time (2) Always (1)

20 14. Does your doctor allow you time to express your concerns about your illness or treatment plan?

Never (5) Occasionally (4) Half the time (3) Most the time (2) Always (1)

22 15. Has your doctor advised you to cut down or stop smoking cigarettes or cigars?

No advice (1) No advice but stopped (2) Advised to cut down or stop and did (3)

Advised to stop (4) Advised to cut down or stop but have not (5)

22 16. When do you expect to get over this illness completely?

Never (5) Some day (4) A few years (3) A few months (2) Very soon (1)

REFERENCE LIST

American Heart Association. Heart facts. Chicago: American Heart Association, 1978.

Becker, M. H., Drachman, R. H., & Krischt, J. P. A new approach to explaining sick role behavior in low-income populations. American Journal of Public Health, 1974, 64, 205-216.

Becker, M. H., & Maiman, L. Sociobehavioral determinants of compliance with health and medical care recommendation. Medical Care, 1975, 13, 10-24.

Blackwell, B. Treatment adherence in hypertension. American Journal of Pharmacy, 1976, 148, 75-85.

Brody, D. An analysis of patient recall of their therapeutic regimens. Journal of Chronic Diseases, 1980, 33, 57-36.

Brunner, L., Emerson, C., Ferguson, L., & Suddarth, D. Textbook of medical surgical nursing. 2nd ed. New York: J. B. Lippincott Co., 1970.

Charney, E., Bynum, R., & Eldredge, D. How well do patients take oral penicillin? A collaborative study in private practice. Pediatrics, 1967, 40, 188-195.

Curtis, E. B. Medication errors made by patients. Nurse Outlook, 1960, 9, 290-291.

Davis, W. T., & Phares, E. J. Internal-external control as a determinant of information-seeking in a social influence situation. Journal of Personality, 1967. 35, 547-561.

Ducett, J., & Wolk, S. Cognitive and motivational correlates of generalized expectancies for control. Journal of Personality and Social Psychology, 1973, 26, 420-426.

Freis, E. Introduction to the nature and management of hypertension. Englewood Cliffs, N.J.: Prentice-Hall Co., 1974.

Garcia, C., & Levenson, H. Differences between blacks' and whites' expectations of control by chance and powerful others. Psychological Reports, 1975, 37(2), 563-566.

Gold, D. Some correlation coefficients: Relationships among I-E scores and other personality variables. Psychological Reports, 1968, 22, 983-984.

Gutman, M. C. & Benson, H. Interaction of environmental factors and systemic arterial blood pressure: A review. Medicine, 1971, 50(6), 543-553.

Heinzelmann, F., & Bagley, R. Response to physical activity programs and their effects on health behavior. Public Health Report, 1970, 85, 905-911.

Hilgard, E., & Bower, G. Theories of learning. Englewood Cliffs, N.J.: Prentice-Hall Inc., 1975.

Howard, K., Rickels, K., & Mock, J. E. Therapeutic style and attrition rate from psychiatric drug treatment. Journal of Nervous Mental Disorders, 1970, 150, 102-110.

Houston, B. K. Control over stress, locus of control, and response to stress. Journal of Personality and Social Psychology, 1972, 21, 249-255.

James, S. A., & Klienbaum, D. G. Socioecologic stress and hypertension related mortality rates in North Carolina. American Journal of Public Health, 1976, 66(4), 354-358.

Jellinek, M. Referrals from a psychiatric emergency room: Relationship of compliance to demographic and interview variables. American Journal of Psychiatry, 1978, 135(2), 209-213.

Joe, V. C. Review of the internal-external construct as a personality variable. Psychological Reports, 1971, 28, 619-640.

Kaplan, N. Clinical hypertension. New York: Medcom Press, Inc., 1973.

Kinder, D. R., & Reeder, L. G. Ethnic differences in beliefs about control. Sociometry, 1975, 38(2), 261-272.

Kochar, M. S., & Daniels, L. Hypertension control. St. Louis: The C. V. Mosby Co., 1978.

Lefcourt, H. Internal versus external control of reinforcement: A review. Psychological Bulletin, 1966, 65(4), 206-220.

MacDonald, A. P., & Hall, J. Internal-external locus of control and perception of disability. Journal of Consulting and Clinical Psychology, 1971, 36, 338-343.

Marston, M. V. Compliance with medical regimens: A review of the literature. Nursing Research, 1970, 19, 312-323.

Naditch, M. P. Denial, anxiety, locus of control, and the discrepancy between aspirations and achievements as components of depression. Journal of Abnormal Psychology, 1975, 84, 1-9.

Noether, G. E. Introduction to statistics. Boston: Houghton-Mifflin, 1971.

Page, L. B. Epidemiologic evidence on the etiology of human hypertension and its possible prevention. American Heart Journal, 1976, 91(4), 527-534.

Pickering, G. Hypertension: Cause, consequences and management. 2nd ed. New York: Churchill-Livingston Co., 1974.

Podell, R. N., & Gray, L. Compliance: A problem in medical management. American Family Physician, 1976, 13(4), 74-80.

Race, Education and Prevalence of Hypertension. American Journal of Epidemiology, 1977, 106(5), 351-361.

Rotter, J. B. Generalized expectancies for internal versus external control of reinforcement. Psychological Monographs, 1966, 80(1, Whole No. 609).

Rotter, J. B. Social learning and clinical psychology. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1973.

Rotter, J. B. Some problems and misconceptions related to the construct of internal versus external control of reinforcement. Journal of Consulting and Clinical Psychology, 1975, 43, 56-67.

Sackett, D. L., & Hayes, T. B. The Standardized Compliance Questionnaire. Mimeographed, 1975.

Sackett, D. L., & Hayes, T. B. Improvement of medication compliance in uncontrolled hypertension. Lancet, 1976, 1, 1265-1268.

Schmidt, D. D. Patient compliance: The effect of the doctor as a therapeutic agent. Journal of Family Practice, 1977, 4, 853-856.

Seftel, H. C. Diseases in urban and rural black populations. South African Medical Journal, 1977, 51(5), 121-123.

Vincent, P. Factors influencing patient noncompliance: A theoretical approach. Nursing Research, 1971, 20, 509-515.

Weintraub, M., Au, W. Y., & Lasagna, L. Compliance as a determinant of serum digoxin concentration. Journal of American Medical Association, 1973, 224, 481-485.

Wennerholm, M. A., & Zarle, T. H. Internal-external control, defensiveness, and anxiety in hypertensive patients. Journal of Clinical Psychology, 1976, 32 (3), 644-648.