Correlation Of Rate Of Compliance To A Prescribed Treatment Regimen With Sense Of Power Experienced By Elders With Type II Diabetes Mellitus

Elly Vance
Mississippi University for Women

Follow this and additional works at: https://athenacommons.muw.edu/msn-projects

Recommended Citation
Vance, Elly, "Correlation Of Rate Of Compliance To A Prescribed Treatment Regimen With Sense Of Power Experienced By Elders With Type II Diabetes Mellitus" (1998). MSN Research Projects. 65.
https://athenacommons.muw.edu/msn-projects/65

This Thesis is brought to you for free and open access by the MSN Research at ATHENA COMMONS. It has been accepted for inclusion in MSN Research Projects by an authorized administrator of ATHENA COMMONS. For more information, please contact acpowers@muw.edu.
Correlation of Rate of Compliance to a Prescribed Treatment Regimen with Sense of Power Experienced by Elders with Type II Diabetes Mellitus

by

Elly Vance

A Thesis
Submitted to the Faculty of Mississippi University for Women in Partial Fulfillment of the Requirements for the Degree of Master of Science in Nursing in the Division of Nursing Mississippi University for Women

August, 1988
Correlation of Rate of Compliance to a Prescribed Treatment Regimen with Sense of Power Experienced by Elders with Type II Diabetes Mellitus

by

Elly Vance

Raymond Skinner
Professor of Nursing
Director of Thesis

Mary Patricia Curtis
Associate Professor of Nursing
Member of Committee

Marie Soode
Instructor of Nursing
Member of Committee

James J. Newport
Director of the Graduate School
Acknowledgements

I wish to express my appreciation to Dr. Rayma Skinner, Mrs. Doris Saade, Mrs. Virginia Cora, and Mrs. Mary P. Curtis for their assistance with the preparation of this thesis. I also wish to thank Dr. Robert Coghlan for allowing me to conduct this research study at his office, and Mrs. Phyllis McCorkle for her patience and typing expertise.

Special thanks is expressed to Sharon Sanders, Anita Nichols, and Melissa Franklin for being such good listeners and support persons throughout the conduction of this thesis.

Lastly, I would like to express extreme gratitude to my family for all the love, support, and encouragement they have given me in all my endeavors.
Abstract

The purpose of this study was to identify the relationship between elderly diabetics' sense of power and their rate of compliance to a prescribed treatment regimen. The researcher hypothesized that there would be no significant correlation between sense of power and rate of compliance to a prescribed treatment regimen. The Health Care Practice Scale - Part A (HCPS-A) and the Health Care Practice Scale - Part B (HCPS-B) were administered to 16 Type II diabetics who were 65 years or older. Statistical analysis using Pearson $r$ found no significant relationship; therefore, the researcher failed to reject the hypothesis.

The researcher recommends that a similar study with a larger, more representative sample be conducted. The compliance measurement tool (HCPS-A) should be revised so that it is specific to diabetes. A study comparing diabetics' perception of the treatment regimen with an actual prescribed treatment regimen should also be conducted. In regards to nursing, Geriatric Nurse Clinicians should encourage compliance and stimulate clients with an external locus of control to accept more responsibility for health maintenance.
Table of Contents

Acknowledgements........................................................................ iii
Abstract...................................................................................... iv
List of Tables................................................................................ vii

Chapter

I. The Research Problem............................................................. 1
   Research Hypotheses......................................................... 5
   Definition of Terms.......................................................... 6
   Assumptions.......................................................................... 6

II. Theoretical Framework of Study............................................ 8

III. Review of the Literature....................................................... 13
   Compliance............................................................................ 13
   Power..................................................................................... 21

IV. Research Design and Methodology....................................... 28
   Research Design.............................................................. 28
   Variables............................................................................. 28
   Setting................................................................................... 28
   Population and Sample..................................................... 29
   Data-Gathering Process.................................................... 30
   Instrumentation............................................................... 31
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statistical Analysis</td>
<td>33</td>
</tr>
<tr>
<td>Limitations</td>
<td>33</td>
</tr>
<tr>
<td>V. Analysis of Data</td>
<td>27</td>
</tr>
<tr>
<td>Hypothesis</td>
<td>35</td>
</tr>
<tr>
<td>VI. Summary, Implications, and Recommendations</td>
<td>37</td>
</tr>
<tr>
<td>Summary</td>
<td>37</td>
</tr>
<tr>
<td>Implications</td>
<td>37</td>
</tr>
<tr>
<td>Recommendations</td>
<td>39</td>
</tr>
<tr>
<td>Research</td>
<td>39</td>
</tr>
<tr>
<td>Nursing</td>
<td>39</td>
</tr>
</tbody>
</table>

**APPENDICES**

| A. Consent Form                                                      | 41   |
| B. Health Care Practice Scale – Part A                              | 42   |
| C. Health Care Practice Scale – Part B                              | 45   |

**REFERENCES**                                                      | 47   |
List of Tables

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Raw Data</td>
<td>36</td>
</tr>
</tbody>
</table>
Chapter I

The Research Problem

In the past 20 years, there has been a shift of responsibility for active decision-making about a patient's health from the health care practitioner to the health care consumer. When individuals feel that control over their health lies within their grasp and perceive that the treatment regimen is established with their input, they can take responsibility to bring about desired health outcomes and are more likely to comply to the therapeutic regimen. Such individuals have an internal locus of control. However, if individuals have external locus of control and feel that they have no control over health outcome or input into the treatment regimen, they are less likely to accept responsibility and comply. Then the practitioner must stimulate a sense of responsibility so that compliance will occur (Miller, 1983; Zindler-Wernet & Weiss, 1987).

Compliance to a health care regimen is important for positive outcomes, yet many health care consumers do not comply. According to Rosenberg (cited in Carey, 1984), the average rate of compliance is 50%. Advances in medical technology have improved the care of those with chronic illness but are of little value if patients do not assume
responsibility and comply with the prescribed treatment regimen (Carey, 1984).

Continuous compliance with treatment regimens is required to prevent complications of chronic illness. However, compliance to treatment tends to decrease as the length of the illness increases. This inverse ratio is particularly true for patients with diabetes mellitus which is found in approximately 3% of men and 6% of women over age 65 (Gerber & Nehemkis, 1986). Diabetes mellitus requires a major amount of skillful and perpetual care by the patient. Supervision by the health care practitioner is only occasional so the responsibility to perform the daily functions of the prescribed treatment regimen lies with the patient. Because of the negative long-term effects of uncontrolled diabetes and because of its impact on lifestyle, it is important for individuals with diabetes to accept this responsibility and comply. Failure of patients to assume an active role in their treatment is a major obstacle in controlling diabetes (Swain & Steckel, 1981).

Failure to comply negatively impacts patient health and economics (Baer, 1986). Much time, energy, and money are expended in health care treatment by both patients and practitioners in areas ranging from cure of acute illnesses to prevention of complications of long-term illnesses, such as diabetes mellitus. The impact of noncompliance on patient economics is difficult to determine. However, the
negative impact of noncompliance on the health of a diabetic may include diabetic retinopathy, kidney failure, peripheral neuropathy, and increased risk for infection. Overall, the health and life of a noncompliant diabetic is in jeopardy.

In 1981, the health care market grossed $278 billion, and in 1982 the amount increased to $317 billion. Forty percent of this money was spent on hospitalization and hospital services. Approximately 33% of the health care dollar was accounted for by the individual health care consumer. Private insurance accounted for 26.5% of the health care dollar, and the remainder was accounted for by the government (Baer, 1986). Compliance to a therapeutic regimen could reduce the need for costly technical services, shorten or eliminate hospital stays, and lower health care costs (Baer, 1986).

The elderly population is especially affected by the economic impact of health care costs. Almost 30% of the total personal health care costs are expended by elders who comprise about 11% of the population. Annual health care costs of the aged per person is about $2,000, and about 65% of elders are covered by some type of private insurance (Ebersole & Hess, 1985).

Individuals with an internal locus of control believing that their actions affect outcomes may have a greater sense of responsibility for behavioral outcomes (Arakelian, 1980). Such individuals perceive that they have power or "the
ability to influence what happens to oneself" (Miller, 1983, p. 3) and are capable of providing individual self-care, directing others regarding self-care, and being the ultimate decision-maker regarding care.

Externals or persons who feel powerless to control outcome of a situation may be either compliant or noncompliant. If externals think their actions will not affect the outcome of an illness, they may fail to comply. On the other hand, these persons may comply if they think it will improve their ability to perform various roles, allow more time for activities, increase their comfort, and promote a positive self-concept (Miller, 1983).

As long as health care providers are giving advice and people are receiving that advice, strategies to improve compliance are needed (Todd, cited in Young, 1986). Research on compliance provides empirical support for its importance to health care. In the past two decades, a large amount of research on compliance has been reported. Out of 300 articles reviewed by Haynes and Sackett (1976), 185 dealt directly with compliance. Even though reports indicate elderly age groups are less likely to follow health care regimens and to take medication, very little research on compliance in elders has been reported (Chang, Umen, Linn, Ware, & Kane, 1985). In addition, there is very little research relating the concept of power or locus of control to compliance.
Compliance has been a major concern in clinical situations of the Geriatric Nurse Clinician (GNC) involving elders with diabetes. Methods to improve compliance in elders are important in preventing complications and improving quality of life. By functioning in roles of educator, consultant, support and resource person, and facilitator of self-care, the GNC can assist and stimulate elders to assume greater responsibility for health care and to comply with the prescribed treatment regimen. By receiving necessary information and support from health care providers, adults can choose and follow courses of actions which they judge to benefit their own treatment. Therefore, the purpose of this study is to examine the correlation of the sense of power and the rate of compliance in elders with Type II diabetes mellitus. The question in this study is: Is the rate of compliance to a prescribed treatment regimen affected by the sense of power experienced by elders with Type II diabetes mellitus?

**Research Hypotheses**

The research hypothesis is: There is a higher rate of compliance to a prescribed treatment regimen in elders with Type II diabetes mellitus who sense they have power to influence the outcome of their treatment than in those who sense they have no power to influence the outcome of treatment.
The null hypothesis is: There is no correlation in the rate of compliance to a prescribed treatment regimen and the sense of power experienced by elders with Type II diabetes mellitus.

**Definition of Terms**

The terms defined for this study are:

Rate of compliance is the extent to which a person's behavior coincides with medical advice as measured by the Health Care Practice Scale - Part A. A value of 0.80 to 1.0 denotes compliance.

Prescribed treatment regimen is the instructions from an established protocol given by a health care practitioner for the patient to follow. These instructions include taking medication, following a diet, or participating in an exercise program.

Elders with Type II diabetes mellitus are noninstitutionalized persons at least 65 years of age who developed diabetes mellitus after age 40.

Sense of power is the elder's perception of an ability to influence what happens to himself or herself as measured by the Health Care Practice Scale - Part B.

**Assumptions**

This study is based on the following assumptions:
1. Compliance to a prescribed treatment regimen can be measured.

2. A client's sense of power exists and can be measured.
Chapter II

Theoretical Framework of Study

Orem's self-care deficit theory of nursing is the theoretical framework for this research study correlating sense of power and locus of control in elders with Type II diabetes mellitus. Orem's theory of nursing consists of three related theories: the theory of self-care, the theory of self-care deficits, and the theory of nursing systems. Four basic concepts comprise this theory: self-care agency, self-care requisites, therapeutic self-care demand, and nursing agency (Orem, 1985).

Self-care is "the practice of activities that individuals initiate and perform on their own behalf in maintaining life, health, and well-being" (Orem, 1985, p. 24). The provider of self-care is termed a self-care agent. Dependent members of society such as children and the ill require complete care or assistance with self-care activities. Those who provide care to the dependent members of society are dependent self-care agents.

Self-care agency is the ability to care for oneself and results from learned behavior. Individuals may need assistance in identifying their self-care roles in order to determine their potential as self-care agents. Examining
one's self-care habits, appraising the benefits, recognizing a need for change, and becoming knowledgeable about new self-care requisites are important for maintaining the adequacy of the individual's self-care agency.

The purposes of self-care are referred to as self-care requisites. Orem identifies three types of self-care requisites: universal, developmental, and health-deviation (Orem, 1985). Universal self-care requisites are common to all human beings and are associated with life processes, maintenance of the integrity of human structure and functioning, and general well-being. Developmental self-care requisites are associated with human developmental processes, events occurring during various stages of the life cycle, and events that adversely affect development. Health-deviation self-care requisites are associated with illness and disease and medical and diagnostic treatment measures.

Therapeutic self-care demand is "the totality of self-care actions to be performed for some duration in order to meet self-care requisites by using valid methods and related sets of operations or actions" (Orem, 1985, p. 88). Individuals experience a self-care deficit when they are unable to care for themselves. When an individual's self-care capabilities are less than the therapeutic self-care demand, the nurse compensates by using specialized abilities which enable her to provide care. The power which enables
nurses to provide care is the nursing agency and is developed through education and practice.

Nursing systems are formed when nurses use their abilities to prescribe, design, and provide nursing care for legitimate patients by performing discrete actions and systems of action. Nursing systems stand for all the actions and interactions of nurses and patients in nursing practice situations (Orem, 1985).

Three types of nursing systems exist: wholly compensatory, partly compensatory, and supportive-educative. The type of nursing system employed depends on who can or should perform self-care actions. If persons cannot perform the actions, the system of nursing is wholly compensatory because a nurse compensates for a patient's total inability for engaging in self-care activities. If persons can perform some but not all self-care actions, then the nursing system is partly compensatory. If persons can and should perform all self-care actions, the supportive-educative nursing system exists. The supportive-educative nursing system is the only nursing system in which a patient's requirements for help are confined to decision-making, behavior control, and acquiring knowledge and skills. The nurse's role consists of combinations of support, guidance, provision of a developmental environment, teaching, and consulting.
Individuals with a chronic illness are primarily responsible for daily management of health problems. Responsible self-care is important for successful management of a chronic illness such as diabetes mellitus. The GNC can assist diabetic individuals to identify their self-care deficits and to realize their potential as self-care agents by using the supportive-educative nursing system. The nurse does not provide direct care but acts as a facilitator of self-care by performing roles of educator, support person, and guidance counselor. Individuals can then realize their responsibility for self-care and health maintenance of chronic illness. Thus, the amount of responsibility for self-care depends on an individual's self-care agency. By performing tasks of decision-making, acquiring knowledge, and modifying behavior with assistance from the nurse, compliance, responsible self-care, and successful treatment of diabetes mellitus can result (Connelly, 1987).

Inherent in self-care agency is an individual's perception of control over the outcome of an event or illness. Successful management of diabetes mellitus may depend on perceived individual control. According to Rotter's social learning theory (Saltzer & Saltzer, 1987), the expectancy regarding the occurrence of outcomes relates to whether persons perceive the outcome to be under their control or outside forces. Those who perceive their self-care agency's control is external believe that outcomes are determined by
luck, fate, chance, or powerful others. Nursing care is likely to be in wholly compensatory or partly compensatory nursing systems. These self-care agents perceive others as responsible for their health care outcome. On the other hand, those who perceive their self-care agency's control is internal believe they have power to determine outcomes based on their own characteristics and actions. Internals assume responsibility for self-care and nursing care is likely to be the supportive-educative nursing system.

By knowing individuals' perception of control over illness or situational outcomes and their potential as self-care agents, the GNC can use the appropriate nursing system to assist them to achieve a more therapeutic self-care agency. Nurses acting as facilitators of self-care can assist internals with diabetes in the daily maintenance of self-care and can assist externals with diabetes in assuming more responsibility for health care maintenance. The ultimate result would be successful self-care and health maintenance of this chronic illness.
Chapter III

Review of the Literature

While there has been research on compliance, there is limited research describing the relationship of compliance to power. An important factor in assumption of responsibility for health is an individual's belief that he/she has the power to reduce disease risks. When individuals sense control over health lies within their group (i.e., they have power), they can take responsibility to bring about desired health outcome. Therefore, the literature review of this study regarding elders with Type II diabetes mellitus focuses on role of compliance to a prescribed treatment regimen and sense of power.

Compliance

Cerkoney and Hart (1980) tested the Health Belief Model in terms of compliance in chronic illness. They conducted an interview survey to answer the following questions:

1. What is the relationship between the compliance levels of persons with diabetes mellitus regarding the specific aspects of their medical regimen (insulin administration, diet, hypoglycemia management, foot care, and urine testing) and the Health Belief Model and its specific
aspects (perceived susceptibility, perceived severity, perceived benefits, barriers or costs, and cues)?

2. Are there differences in the compliance levels of diabetic individuals when grouped according to the following variables: age, sex, race, marital status, education, satisfaction with medical care, length of time since last office visit, and length of time using insulin?

The sample consisted of 30 diabetics whose ages ranged from 18 to 73 years. All subjects were insulin-treated, following a regimen regulated by a physician, responsible for their own care, and able to speak English.

A 23-item compliance measurement tool was used to measure compliance. Items on this tool measured behaviors necessary for insulin-treated diabetic patients to remain in good control. The maximum score possible on the compliance measurement tool was 61. Subjects' scores ranged from 36 to 55. Over one-half of the subjects indicated compliance with at least 70% of the items measured. Only 2 subjects received 45 points for carrying out all behaviors. The group was most compliant with regard to insulin administration and least compliant regarding urine testing.

For measurement of health belief variables, a health belief measurement tool consisting of five statements measuring the five aspects of the Health Belief Model (perceived susceptibility, perceived severity, perceived benefits, barriers or costs, and cues) was utilized.
Perceptions of disease severity included how much subjects felt their diabetes limited their daily activities and its effect on the family. Twenty-two considered their diabetes to be serious, but only 14 felt it limited their activities and 4 believed it affected their family. Certain cues related to a subject's intention to comply and to his/her general concerns about health. Twelve indicated they "worried a lot about their health" and 13 indicated that "much of what happens to your health is a matter of chance." Ten indicated that "you use your own judgment in deciding how much of the doctor's advice to follow."

Twenty-eight of the 30 subjects reported that they believed that treatment would control their diabetes. Subjects who believed their diabetes to be serious performed better foot care, carried a source of sugar, wore diabetic identification, and were able to describe signs and symptoms of hypoglycemia. Most of the patients in this study did not include diet as part of their treatment but considered taking insulin and testing the urine as part of the treatment. In turn, 6 subjects, who perceived that they had adhered to the diet, had modified it by avoiding sweets instead of using exchange lists or counting calories.

The correlation of the health belief motivators and compliance in this study was not significant enough for the motivators to be used as reliable clinical indicators. Cerkoney and Hart (1980), as a result of the findings in
this study, proposed that "compliance behavior is likely to be influenced by a constellation of attitudes which are amenable to change and that changes might be facilitated by long-term follow-up care" (p. 597).

Another researcher viewed compliance in the diabetic treatment regimen in terms of dietary control and weight loss, based on individual perception of disease severity. Alogna (1980) believed an important factor in weight loss and compliance is an individual's perception of an illness and his locus of control. Alogna conducted a study to determine if compliant obese diabetic subjects could be identified by a correlation of internal locus of control and successful weight loss. Alogna predicted that compliant patients would perceive their disease as more severe and would be more internally controlled.

The study consisted of 50 obese, non-insulin dependent adult diabetics who attended the Diabetic Clinic of Grady Memorial Hospital in Atlanta, Georgia. All subjects attending the clinic within a 3-month time period had an opportunity to participate in the study.

Subjects were classified as compliant or noncompliant based on specific criteria. Those who were compliant (n = 25) had a weight loss of 20-25 pounds in 1 year or less and a loss of 10% of their initial weight each year up to 3 years. In addition, compliers had a random serum glucose of less than 195 mg/dl. Those who were noncompliant (n = 25)
had a minimal amount of weight loss (less than 10% initial weight each year up to 3 years) or an actual weight gain. Noncompliers had random serum glucoses of 250 mg/dl or higher. Statistical analysis revealed that on initial determination of weight, there was no significant difference in obesity and blood sugars between compliers and noncompliers.

Social and demographic variables were obtained, and each subject was verbally administered the Health Locus of Control Scale and the Perception of Severity of Disease Index. In comparing demographic variables between the two groups, $t$ tests revealed no significant differences on sex, race, marital status, duration of disease, education level, or complications of disease; however, the compliant group was significantly older.

A significant difference between the groups was noted on the Perception of Disease Severity Index. Compliant subjects viewed their illness as more severe than noncompliant subjects. There was a trend toward internal locus of control in the compliant group. Results of this study indicated that patients are more realistic about the consequences of the disease and are motivated to take action to control their diabetes if they perceive an illness to be serious.

While Alogna's (1980) study concerned the variables of compliance and perceived severity of disease, Talkington
(1978) conducted a study concerning other variables which influence compliance. Such variables include the physician-patient relationship, patient characteristics, the therapeutic regimen, and sociogeographic factors. Talkington initiated a patient compliance study in an effort to establish an efficient and practical procedure for maximizing patient compliance and shaping attitudes of self-directed health care and maintenance.

Before initiating the study, exploratory data were collected from patients of a family practice center to determine patients' reactions to talking about compliance and reasons for noncompliance. Based on the exploratory study, the following factors for maximizing compliance were identified:

1. Good rapport and free communication between the patient and physician.

2. Interaction which results in the patient feeling that (a) concerns were understood, (b) expectations were met; and (c) the health care provider was genuinely concerned about him.

3. Patient understanding of his medical problem, causes, treatment regimen, expected outcomes of treatment, and consequences of noncompliance.

4. Patient participation in planning treatment regimen, identification of, analysis of, and solutions to
problems which might interfere with compliance (Talkington, 1978).

An experimental group of 182 patients and a control group of 156 patients were used for the compliance study. Patients from both groups were randomly selected from the family practice center and a nearby comprehensive health care clinic.

A preliminary interview was conducted by a nurse with patients of the experimental group before each patient saw the physician. The interview focused on the patient's reason for the visit to the physician and what he hoped to have accomplished from the visit. Following the physician's examination, the nurse again interviewed the patient and a self-treatment form was completed jointly by the nurse and the patient. The form consisted of a list of the physician's recommendations, reasons for each recommendation, and exactly how they were to be carried out. Problems that might interfere with compliance were identified. Consequences of following or not following recommendations were explained. Patients were told that they would be asked to estimate their degree of compliance with physician recommendations.

During the interview, the nurse assessed history of poor compliance and the degree of complexity of the treatment regimen. Patients falling into poor compliance categories were contacted within two to three days of the visit
in order to give support and identify additional problems that might interfere with compliance. These patients along with all others in the experimental group were contacted two weeks after the initial visit and asked to estimate the percentage of time they followed the physician's recommendations. Of the 182 patients in the experimental group, only 153 were able to be contacted for follow-up by telephone or during the return visit to the physician two weeks after the initial visit.

Patients in the control group were chosen at random from the register of appointments. These patients were contacted by telephone two weeks after their visit. Patients in the control were asked to estimate the percentage of time they had complied with each of the physician's recommendations. Many patients, especially in the control group, had difficulty estimating the percentage of time they complied.

The treatments to which subjects were to comply included medication, appointments, treatment, and behavior modification. Compliance was tabulated in terms of compliance instances, or how many times the patient had the opportunity to comply with the physician's recommendations. The percentage of compliance was based on the total number of compliance instances in each category.

The compliance category containing the most compliance instances was medication followed by appointment, behavior
modification, and treatment. Patient compliance estimates for each category ranged from 0 to 100%. Patients in the experimental group had a higher percentage of compliance in each category than those in the control group. Mean patient compliance for all categories combined showed the experimental group was 73% compliant and the control group was 55% compliant.

Little correlation was found between previous experience with the recommended regimen and the rate of compliance. Patients' own expected rates of compliance did not seem to be related to the actual rates attained. Nearly all patients in the initial interview said they thought they would comply 100% of the time.

Talkington (1978) proposed that compliance programs may be more successful and less offensive if more emphasis is placed on assisting the patient to make his own informed decisions, helping him to identify and find solutions to problems which may interfere with compliance, and giving support and guidance as needed.

**Power**

Schlenk and Hart (1984) conducted a study to identify the relationship between patient compliance with the diabetes therapeutic regimen and the variables of health locus of control, health value, and perceived social support. The specific questions addressed by the study were:
1. What is the relationship between the compliance of insulin-dependent diabetics with their therapeutic regimen and their health locus of control, value of health, and level of social support?

2. What level of contribution do the independent variables of health locus of control, health value, and level of social support have to the prediction of the dependent variable compliance with a therapeutic diabetes regimen?

A nonexperimental study using questionnaires to measure the independent variables of health locus of control, health value, and perceived social support was performed. Self-report and direct observation were used to measure the dependent variable compliance. A convenience sample of 30 subjects was obtained from a diabetes outpatient clinic of a midwestern university hospital. All subjects had been instructed by the clinic’s nurse clinician and dietician regarding diet, exercise, foot care, self-monitoring blood glucose (SMBG), insulin administration, and the management of hypoglycemia. The subjects selected met the following criteria: greater than 16 years old, used insulin for at least 4 months, performed SMBG, were willing to participate, and were able to speak and read English.

The first research question concerning the relationship between compliance with the diabetes regimen and the variables of health locus of control, health value, and
social support was addressed using the Pearson Product Moment Correlation Coefficient procedure for all variables except health value. A point biserial correlation coefficient was tabulated to determine the relationship with compliance scores. A statistically significant relationship was found between compliance and social support, powerful other's health locus of control (PHLC), and internal locus of control (IHLC). Social support had a statistically significant relationship with IHLC and PHLC and perceived social support. Results of this study suggested that patients may be more amenable to prescriptions, recommendations, suggestions, or assistance by health care providers, family, and friends. Promotion of patients' PHLC and IHLC, through a self-care approach to health maintenance, may encourage both self-responsibility for health and active participation in health care (Schlenk & Hart, 1984).

In support of Schlenk and Hart's (1984) findings, Zindler-Wernet and Weiss (1987) conducted a study of locus of control but expanded the discussion of locus of control to include Chance Locus of Control. Zindler-Wernet and Weiss examined the relationship of preventive health behavior and an individual's health locus of control beliefs. Although most studies have examined belief in one's own ability to influence health as a predictor of preventive health behavior, this study proposed that belief in chance is a more critical discriminator between
individuals who participate in preventive health behavior and those who do not. Beliefs regarding the influence of chance represent an expectancy of perceived powerlessness in contrast to expectancies that reflect the belief that actions of either health care professionals or oneself can influence health status.

One hundred twenty-three subjects aged 25 to 69 years were conveniently sampled from a large health sciences campus in a major metropolitan area. A total of 92% had a college education with an average of 17 years of education. An ex post facto design was used to examine the relationships between health locus of control beliefs and preventive health behavior.

The first hypothesis proposed that subjects with a history of participation in preventive health behaviors would demonstrate significantly less belief in the influence of chance on health than the subjects with no history of preventive health behavior. Seventy-two percent of the subjects reported that they participated in some type of preventive health behavior prior to initiation of the study. Subjects with a history of preventive health behaviors had significantly lower Powerful Others Health Locus of Control and Chance Locus of Control scores than those who had no history of preventive health behavior.

The second hypothesis proposed that subjects, by virtue of their risks, would demonstrate significantly less belief
in the influence of chance on health than a normative group of healthy adults. The normative group consisted of a national sample of 1,287 healthy adults who completed the Multidimensional Health Locus of Control Scales in studies conducted by Wallston and Wallston in 1981 (cited in Zindler-Wernet & Weiss, 1987). Subjects in this study had a significantly lower mean score for Chance Locus of Control than the normative group indicating that subjects of this study had significantly greater belief in their own influence on health but significantly less belief in the influence of powerful others on health than did the normative group.

The third hypothesis in this study predicted that subjects who initiated recommended preventive health behaviors would have significantly less belief in the influence of chance on health than subjects who did not initiate preventive health behaviors after recommendation. The researcher failed to reject this hypothesis.

Findings of this study indicated that all subjects were highly internal in their locus of control and those with a history of preventive health behavior were more internal than those without such a history. Pure internals demonstrated a substantial belief in their own ability to influence health but minimal belief in the influence of chance or powerful others on their health. The results of this study indicated that individuals who were motivated to
seek a comprehensive appraisal of their health risks had less belief that fate or luck would determine their health than a normative population. Thus, a belief in their own personal influence determined good health outcome.

Cerkoney and Hart's (1980) study identified subjects who felt their diabetes was serious as those who tended to be more compliant and knowledgeable of the disease process of diabetes. Cerkoney and Hart suggested that behavioral changes might be easier with long-term follow-up care. This study along with Alogna's (1980) study empirically supported the efficacy of the Health Belief Model in chronic illness. Alogna's study regarding obese diabetics suggested that patients who are more realistic about the consequences of diabetes are motivated to take responsibility to control their diabetes.

Talkington (1978) suggested that compliance programs would result in successful individual health care practice if more emphasis is placed on assisting the patient in making informed decisions and helping him learn problem-solving skills as well as providing support and guidance. Schlenk and Hart's (1984) study closely related to Talkington's proposal. Schlenk and Hart suggested that promotion of an individual's Powerful Others Health Locus of Control and his/her Internal Health Locus of Control may encourage self-responsibility for health and active participation in health if a self-care approach is employed.
In conclusion, even though there have been many research studies involving compliance and many applications have been made concerning locus of control or power, little research exists linking the two concepts. More research of compliance needs to be conducted involving elders and those with diabetes mellitus. There should also be more research concerning locus of control and compliance in the elderly age group.
Chapter IV

Research Design and Methodology

Research Design

The research design employed in this study of a correlation of sense of power and rate of compliance in elders with Type II diabetes mellitus is descriptive correlational. The aim of descriptive correlational is to describe the relationship among variables rather than to infer cause-and-effect relationships (Polit & Hungler, 1987).

Variables

Correlated variables of interest included rate of compliance with a prescribed treatment regimen and sense of power in elderly adults with Type II diabetes mellitus. Controlled variables included age and diagnosis of diabetes mellitus. A possible intervening variable was the degree of client motivation. A subject in the study may have participated because he/she assumed it was his/her responsibility as a client to do so.

Setting

The setting of this research investigation was Aberdeen, Mississippi. Aberdeen is located in Northeast
Mississippi and is the county seat of Monroe County. The population in 1980 was 7,184 persons. No data are available to determine percentage of males, females, whites, and nonwhites in Aberdeen. The average per capita income in 1987 was $8,648 (Community Profile, 1988).

In regard to the labor force of the area, industries primarily consists of chemical plants and clothing factories. The health care delivery system is composed of four family practice clinics operated by six physicians. One clinic was used for data collection in this study. A local hospital with an 84-bed capacity, a health department, and a nursing home complete the health care network in Aberdeen (Community Profile, 1988).

Population and Sample

Subjects of this research investigation were clients of one of the local family practice clinics. The clinic serves both white and nonwhite persons and accepts Medicare and Medicaid recipients as well as persons with private insurance. The whole age span from birth to old adulthood is served by the clinic.

Subjects were selected by convenience sampling. In convenience sampling, the researcher uses the most readily available persons in a study (Polit & Hungler, 1987). The proposed number of subjects was 30; however, only 16 subjects completed the Health Care Practice Questionnaires
in the allotted 2-month time period established for data collection.

Data-Gathering Process

As a client entered the clinic to fulfill his/her appointment, he or she was invited to participate in the study. Persons invited to participate had to be at least 65 years of age oriented to person, place, and time, and have Type II diabetes mellitus. Level of orientation was determined by the client giving his full name, his present location (physician's office), and the present month. After subject eligibility had been determined, the client was given a description and explanation of the research study. A time for questions was allowed. The client was given an opportunity to participate in the study. If the client refused, he/she was thanked for listening to the researcher's proposal. If the client agreed to participate and signed a written consent (see Appendix A), the researcher distributed the Health Care Practice Questionnaires (Parts A and B). The researcher assisted those with vision problems and/or illiteracy. Those without these problems answered the questionnaires independently.

Privacy was ensured by use of a reserved office for data collection. Data collection was to take no longer than 15-20 minutes. A majority of the subjects used approximately 15 minutes to complete the questionnaires. The researcher was available at all times for questions.
Clients were assured that anonymity would be preserved and that participation in the study would not affect the care they received in the clinic.

**Instrumentation**

**Health Care Practice Scale - Part A.** The Health Care Practice Scale - Part A (HCPS-A), originally named the Compliance Scale, was formulated by King (1986) as part of a master's thesis. The name change of this instrument denotes the present researcher's effort to prevent patient bias toward compliance which sometimes has a negative connotation (see Appendix B). HCPS-A consists of seven pairs of questions concerning compliance in areas of regular visits to health care provider, use of medication, weight loss, special diet, smoking or chewing tobacco, exercise, and reduction of stress or pressure in life. The first question in each pair asks if the client has ever been told by the health care provider to do a specific action. The second question asks if the client did the behavior requested by the health care provider. No points are given for answers indicating noncompliance. One point is given for answers indicating partial compliance, and 2 points are given for answers reflecting full compliance.

A compliance index of 0–1 was determined by four steps:

1. The total number of opportunities for compliance were counted (0–7).
2. This number (0-7) was multiplied by 2 to establish the maximum score possible for compliance (0-14).

3. The actual compliance score was determined by adding the scores for individual areas of compliance (0-14).

4. Then the compliance score was divided by the maximum score possible for compliance to get a compliance index (0-1).

Questions at the conclusion of the questionnaire concern demographic factors of age, sex, race, educational level, income level, and marital status. The compliance scale, HCPS-A, was pretested for clarity by King who administered it to five individuals who did not participate in the study. The HCPS-A is assumed to have face validity within the confines of the study. No figures are available for reliability of this instrument.

Health Care Practice Scale - Part B. The Health Care Practice Scale - Part B (HCPS-B), originally named the Health Locus of Control Scale, is a self-administered instrument composed of 11 statements that are designed to elicit information about how much control an individual feels he/she has over personal health outcome. This instrument was also renamed by the present researcher to decrease potential bias (see Appendix C).

A 6-point Likert scale is used for responses with a numerical code of 1-6 assigned to six response categories. Responses to questions 1, 2, 8, 10, an 11 must be reversed
before being added to the responses of the remaining questions. Total score for the instrument may range from 11 to 66. A high score denotes belief in a high degree of external locus of control (powerlessness), and a low score reflects a high degree of internal control (power).

The test-retest characteristics of the variable (HLC) measured by the instrument was .71. Internal consistency varied from .40 to .72 (Wallston et al., 1976). No figures for validity are available. The instrument is assumed to have face validity within the confines of this study.

**Statistical Analysis**

Demographic variables of the sample were described by number and percentage. The Pearson Product Moment Correlation Coefficient was used to test the null hypothesis of this study. The Pearson Product Moment Correlation Coefficient is a linear correlation index which is used to summarize the magnitude and direction of a relationship between two variables.

**Limitations**

The results of analyzed data in this study are not generalizable to:

1. Persons with other chronic health problems.
2. Persons with Type I diabetes mellitus.
3. Persons of other age groups.
4. Persons in other geographical locations.
Chapter V

Analysis of Data

The purpose of this research study was to examine if a correlation existed between sense of power and the rate of compliance in elders with Type II diabetes mellitus. To achieve this purpose, two health care practice scales, one measuring locus of control and the other measuring compliance, were administered to 16 subjects.

Ages of the subjects ranged from 65 to 83 years with a mean age of 72 years. Three males (19%) and 13 females (81%) were included. Eleven subjects (69%) in the sample were Black persons and the remainder were Caucasian. Levels of education ranged from 3 to 12 years with a mean of 8 years. Most of the subjects (88%) had an annual income of less than $10,000, and the remainder had an income level of $10,000 to $20,000 annually. Some of the clients had other existing illnesses. Nine had hypertension, 2 had arthritis, one had a history of a cerebrovascular accident, one had heart disease, and one had elevated cholesterol.

The compliance indices in the HCPS-A varied from .50 to 1.0 with a mean of .80. A compliance index of .80 to 1.0 denotes compliance. Based on this criteria, 12 subjects (75%) were compliant. The range of scores on the HCPS-B,
measuring locus of control, was 32 to 65 with a mean of 55. High scores on this scale denote an external locus of control while low scores represent an internal locus of control. Thirteen subjects (81%) scored 50 or greater. See Table 1 for data.

**Hypothesis**

The researcher hypothesizes that there would be no correlation in clients' locus of control score and their compliance index when they were surveyed. To test this hypothesis, the Pearson \( r \) was subjected to the .05 level of significance. The obtained \( r \) value was .0094 which was not significant at the .05 level. As a result, the researcher failed to reject the null hypothesis.
<table>
<thead>
<tr>
<th>Subject</th>
<th>Age</th>
<th>Sex</th>
<th>Race</th>
<th>Education (Years)</th>
<th>Marital Status</th>
<th>Income (000)</th>
<th>HCPS-A (Compliance)</th>
<th>HCPS-B (HLC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>68</td>
<td>M</td>
<td>B</td>
<td>10</td>
<td>M</td>
<td>&lt; 10</td>
<td>0.800</td>
<td>58</td>
</tr>
<tr>
<td>2</td>
<td>66</td>
<td>F</td>
<td>W</td>
<td>12</td>
<td>M</td>
<td>10-20</td>
<td>0.800</td>
<td>41</td>
</tr>
<tr>
<td>3</td>
<td>73</td>
<td>M</td>
<td>B</td>
<td>3</td>
<td>M</td>
<td>10-20</td>
<td>0.500</td>
<td>52</td>
</tr>
<tr>
<td>4</td>
<td>83</td>
<td>F</td>
<td>B</td>
<td>8</td>
<td>W</td>
<td>&lt; 10</td>
<td>1.000</td>
<td>65</td>
</tr>
<tr>
<td>5</td>
<td>73</td>
<td>F</td>
<td>B</td>
<td>8</td>
<td>W</td>
<td>&lt; 10</td>
<td>0.830</td>
<td>63</td>
</tr>
<tr>
<td>6</td>
<td>67</td>
<td>F</td>
<td>B</td>
<td>12</td>
<td>S</td>
<td>&lt; 10</td>
<td>0.830</td>
<td>48</td>
</tr>
<tr>
<td>7</td>
<td>75</td>
<td>F</td>
<td>B</td>
<td>6</td>
<td>W</td>
<td>&lt; 10</td>
<td>0.875</td>
<td>61</td>
</tr>
<tr>
<td>8</td>
<td>71</td>
<td>F</td>
<td>W</td>
<td>11</td>
<td>W</td>
<td>&lt; 10</td>
<td>1.000</td>
<td>51</td>
</tr>
<tr>
<td>9</td>
<td>80</td>
<td>F</td>
<td>B</td>
<td>6</td>
<td>W</td>
<td>&lt; 10</td>
<td>0.830</td>
<td>64</td>
</tr>
<tr>
<td>10</td>
<td>76</td>
<td>F</td>
<td>B</td>
<td>5</td>
<td>W</td>
<td>&lt; 10</td>
<td>0.900</td>
<td>57</td>
</tr>
<tr>
<td>11</td>
<td>70</td>
<td>F</td>
<td>W</td>
<td>6</td>
<td>M</td>
<td>&lt; 10</td>
<td>0.800</td>
<td>58</td>
</tr>
<tr>
<td>12</td>
<td>75</td>
<td>M</td>
<td>W</td>
<td>9</td>
<td>M</td>
<td>&lt; 10</td>
<td>0.875</td>
<td>32</td>
</tr>
<tr>
<td>13</td>
<td>72</td>
<td>F</td>
<td>B</td>
<td>10</td>
<td>M</td>
<td>&lt; 10</td>
<td>0.800</td>
<td>59</td>
</tr>
<tr>
<td>14</td>
<td>76</td>
<td>F</td>
<td>B</td>
<td>9</td>
<td>M</td>
<td>&lt; 10</td>
<td>0.750</td>
<td>57</td>
</tr>
<tr>
<td>15</td>
<td>65</td>
<td>F</td>
<td>B</td>
<td>8</td>
<td>W</td>
<td>&lt; 10</td>
<td>0.500</td>
<td>58</td>
</tr>
<tr>
<td>16</td>
<td>66</td>
<td>F</td>
<td>W</td>
<td>9</td>
<td>M</td>
<td>&lt; 10</td>
<td>0.750</td>
<td>58</td>
</tr>
</tbody>
</table>
Chapter VI

Summary, Implications, and Recommendations

Summary
The purpose of this research study was to identify the relationship between elderly diabetics' sense of power and their rate of compliance to a prescribed treatment regimen. The researcher hypothesized that there would be no significant correlation between sense of power and rate of compliance to a prescribed treatment regimen. The HCPS-A and HCPS-B were administered to 16 Type II diabetics who were 65 years or older. Statistical analysis using Pearson r found no significant relationship; therefore, the researcher failed to reject the hypothesis.

Implications
Findings of this study indicate that no relationship exists between subjects' sense of power and their rate of compliance to a prescribed treatment regimen. While the subjects of this sample were highly compliant, they had an external locus of control. This finding contrasts with Miller's (1983) findings that those with an internal locus of control are more likely to comply.
The majority of the diabetics in this study complied with health care provider's recommendations about health care practices. These subjects did not assume an active role in decision-making but complied with the powerful other's (physician) recommendations. Such findings contradict Zindler-Wernet and Weiss' (1987) findings that those with a history of preventive health behaviors have more belief that their own actions control health outcome and less belief in powerful others or chance of health outcome. Perhaps, these results differ because Zindler-Wernet and Weiss' study involved young adults and not elders. Further research is needed concerning compliance and sense of power in elders.

The compliance scale (HCPS-A) used in this study is not specific to diabetic treatment regimens and relies on the client's perception of what the health care provider recommended. A tool specific to a diabetic treatment, including such things as blood glucose and urine monitoring, is recommended. In addition, diabetics' perceptions of what the health care provider recommended need to be compared to the prescribed treatment.

While the findings of this study do not support other research, the sample size was small and nonrandomly selected. Further studies using larger and representative samples are needed to determine the relationship of power to compliance.
The results of this study support the use of the supportive-educative nursing system in Orem's self-care deficit theory. Elders in this study were attaining self-care and complying to health care practices. The GNC needs to support patient compliance to a prescribed treatment regimen and to educate elders about the importance of compliance. When dealing with individuals with an external locus of control, the GNC needs to create a climate which fosters development of self-responsibility. The end result should be an increase in individuals' self-care agencies and a more internal locus of control.

Recommendations

Research

1. Conduction of a similar study with a larger, more representative sample.

2. Revision of the compliance measurement tool (HCPS-A) so that it is specific to diabetes.

3. Conduction of a study which compares diabetics' perception of treatment regimen to actual prescribed regimen.

Nursing

1. Encouragement of clients to comply with prescribed treatment regimen to prevent disease risks.

2. Stimulation of clients with an external locus of control to accept more responsibility for health maintenance.
Appendix A

Consent Form

In signing this document I am giving consent for data from the Health Care Practice Questionnaire to be used in the research study as explained by Elly Vance, RN, MUW Graduate Student.

These questionnaires were granted freely. I have been informed that participation in this research study is entirely voluntary and that even after the process of data gathering begins I can refuse to answer any specific questions or decide to withdraw at any point. I have been told that my answers to questions will not be given to anyone else, and no reports of this study will ever identify me in any way. I have also been told that my participation or nonparticipation or my refusal to answer questions will have no effect on services that I or any member of my family may receive from this office.

I understand that the results of this research will be given to me if I ask for them and that Elly Vance, RN, 307 Hospital Drive, Apartment 22, Columbus, Mississippi 39701, is the person to contact if I have any questions about the study or about my rights as a study participant.

I do hereby give consent for data from Health Care Practice Questionnaires to be used in the research study as explained above.

__________________________  ________________________
Date                      Patient's Signature

__________________________
Investigator's Signature
Appendix B

Health Care Practice Scale - Part A

1. Do you have any past or present health problem(s)? _ _ _
   If yes, what? ____________________________ When? _____
   Doctor: ________________________________

2. Has your doctor recommended regular visits (routine checkups)? Yes ___ No ___ If so, how often? __________

3. Do you keep these visits as requested? Yes ___ No ___

4. If no, why not?
   _____ I do not have transportation.
   _____ I do not have money.
   _____ I was too sick to make trip.
   _____ I see the doctor more often than he requested.

5. Are you currently or have you recently been placed on medicine for your problem? Yes ___ No ___

6. How often do or did you take your medicine?
   _____ Always
   _____ Sometimes
   _____ Occasionally
   _____ Never

7. When you miss your medicine, what is the usual reason?
   _____ I do not miss any of my medicine.
   _____ I forget to take the medicine.
   _____ I run out of medicine.
   _____ The medicine costs too much.
   _____ It is too far to go to get the prescription filled.
   _____ I think that I do not need the medicine.
   _____ The medicine makes me feel sick or faint.
   _____ The medicine ruins sex.
   _____ Other.

8. Have you ever been told to lose weight? Yes ___ No ___
9. If you were told to lose weight, what did you do?
   _____ I lost weight and kept it off.
   _____ I lost weight and gained it back.
   _____ I did not lose any weight.

10. Are you on a special diet? Yes ___ No ___
    If yes, what type? ______________________

11. How often do you follow your special diet?
    _____ Always
    _____ Sometimes
    _____ Occasionally
    _____ Never

12. When you are not on a special diet, what is the usual reason?
    _____ I always follow my diet.
    _____ The diet is too hard to understand.
    _____ I cannot afford the right foods.
    _____ I do not care or think the diet is important.
    _____ I do not like the diet.
    _____ I crave things that are not allowed on the diet.
    _____ Other reasons.

13. Do you smoke or chew tobacco? Yes ___ No ___. Have you ever been told to stop smoking or chewing by a health care provider? Yes ___ No ___

14. If you were told to stop smoking or chewing tobacco what did you do?
    _____ I never smoked or chewed tobacco.
    _____ I quit smoking or chewing tobacco.
    _____ I quit and started smoking or chewing tobacco again.
    _____ I cut down smoking or chewing tobacco.
    _____ I did not quit smoking or chewing tobacco.

15. If you smoke or chew tobacco, have you:
    _____ tried to quit but have been unable?
    _____ decided you enjoy smoking and/or chewing and do not want to stop?
    _____ ever been told to stop smoking or chewing tobacco?

16. Have you ever been told to exercise regularly? Yes ___ No ___.
17. If you were told to exercise regularly, what did you do?

_____ I exercise regularly.
_____ I started but stopped exercising.
_____ I never started exercising.

18. If you do not exercise regularly, what is the usual reason?

_____ I do not enjoy exercise.
_____ I was never told to exercise.
_____ It is too hard.
_____ I do not have time to exercise.
_____ I am too tired to exercise.

19. Have you ever been told to reduce stress or pressure in your life? Yes ___ No ___.

20. If you were told to reduce stress, what did you do?

_____ I cut down stress.
_____ I did not cut down stress.

21. If you did not try to decrease stress, what was the reason?

_____ It was not important.
_____ My job will not permit it.
_____ It was too hard.
_____ I was too tired.

Demographics

22. Age: ___

23. Sex: ___

24. Race: ___

25. Marital Status: __________

26. Income:  
Less than $10,000 ___
$10,000 - $20,000 ___
$20,000 - $30,000 ___
$30,000 - $40,000 ___
More than $40,000 ___

27. Education: Last grade completed ________
Appendix C

Health Care Practice Scale - Part B

1. If I take care of myself, I avoid illness.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>Moderately Disagree</td>
<td>Slightly Disagree</td>
<td>Slightly Agree</td>
<td>Moderately Agree</td>
<td>Strongly Agree</td>
<td></td>
</tr>
</tbody>
</table>

2. Whenever I get sick, it is because of something I've done or not done.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>Moderately Disagree</td>
<td>Slightly Disagree</td>
<td>Slightly Agree</td>
<td>Moderately Agree</td>
<td>Strongly Agree</td>
<td></td>
</tr>
</tbody>
</table>

3. Good health is largely a matter of good fortune.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>Moderately Disagree</td>
<td>Slightly Disagree</td>
<td>Slightly Agree</td>
<td>Moderately Agree</td>
<td>Strongly Agree</td>
<td></td>
</tr>
</tbody>
</table>

4. No matter what I do, if I am going to get sick I will get sick.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>Moderately Disagree</td>
<td>Slightly Disagree</td>
<td>Slightly Agree</td>
<td>Moderately Agree</td>
<td>Strongly Agree</td>
<td></td>
</tr>
</tbody>
</table>

5. Most people do not realize the extent to which their illnesses are controlled by accidental happenings.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>Moderately Disagree</td>
<td>Slightly Disagree</td>
<td>Slightly Agree</td>
<td>Moderately Agree</td>
<td>Strongly Agree</td>
<td></td>
</tr>
</tbody>
</table>

6. I can only do what my doctor tells me to do.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>Moderately Disagree</td>
<td>Slightly Disagree</td>
<td>Slightly Agree</td>
<td>Moderately Agree</td>
<td>Strongly Agree</td>
<td></td>
</tr>
</tbody>
</table>
7. There are so many strange diseases around that one can never know how or when one could be picked up from someone.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>Moderately Disagree</td>
<td>Slightly Disagree</td>
<td>Slightly Agree</td>
<td>Moderately Agree</td>
<td>Strongly Agree</td>
<td></td>
</tr>
</tbody>
</table>

8. When I feel ill, I know it is because I have not been getting the proper exercise or eating right.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>Moderately Disagree</td>
<td>Slightly Disagree</td>
<td>Slightly Agree</td>
<td>Moderately Agree</td>
<td>Strongly Agree</td>
<td></td>
</tr>
</tbody>
</table>

9. People who never get sick are just plain lucky.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>Moderately Disagree</td>
<td>Slightly Disagree</td>
<td>Slightly Agree</td>
<td>Moderately Agree</td>
<td>Strongly Agree</td>
<td></td>
</tr>
</tbody>
</table>

10. People's ill health results from their own carelessness.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>Moderately Disagree</td>
<td>Slightly Disagree</td>
<td>Slightly Agree</td>
<td>Moderately Agree</td>
<td>Strongly Agree</td>
<td></td>
</tr>
</tbody>
</table>

11. I am directly responsible for my health.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>Moderately Disagree</td>
<td>Slightly Disagree</td>
<td>Slightly Agree</td>
<td>Moderately Agree</td>
<td>Strongly Agree</td>
<td></td>
</tr>
</tbody>
</table>

Adapted from King, 1986.
References


