

MASLOW'S HIERARCHY OF NEEDS AND LEVEL OF
TREATMENT COMPLIANCE OF PATIENTS
WITH EPILEPSY

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ABSTRACT

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The problem of the study was: When subjects with epilepsy are classified according to indicators of compliance, are there differences in the levels of unmet needs? Maslow's Hierarchy of Needs served as the study framework. Five indicators of compliance and seven human needs were examined. Only two human needs, security and respect, and one compliance indicator, independent living, were associated. Subjects who scored higher in unmet security and respect needs demonstrated significantly lower compliance, as indicated by independent living. Thus, in general, when subjects with epilepsy were classified according to indicators of compliance, few differences in unmet needs existed.

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CHAPTER I

INTRODUCTION

Clients, diagnosed with a chronic disorder, and their families, face not only a barrage of complex medical problems but must also make important psychological, social, and economic adjustments. For some time, health care providers have recognized the impact of basic needs on the client's ability to comply with treatment regimens. Yet, little has been written on compliance in relation to the needs identified by Abraham Maslow (1968). Basic survival needs for food, water, and shelter must first be met before the client can be expected to grasp the notion that treatment compliance can offer him/her long-term benefits and possibly lead to achievement of a higher functioning lifestyle and level of wellness.

If the health care industry is truly interested in moving the public towards health promotion, attention must be directed at the problems related to health maintenance. Health education for the public can do little to promote compliance if health care providers do not first recognize and address the underlying contributing factors that

impact the ability or willingness to comply with treatment regimens.

This study focused on the client's energy and motivational resources to comply with treatment plans or treatment regimens. Those clients with the least available resources are often those surviving at or below the poverty line or those who have been defined as being indigent. This study looked at the level of unmet human needs and compliance.

Problem of the Study

The problem of this study was: When subjects with epilepsy are classified according to indicators of compliance, are there differences in the levels of unmet needs?

Justification of the Problem

If clients' needs can be identified that impact their health problems, interventions can be implemented that will allow them more personal control over their own health. If clients' needs are met, their ability to comply with treatment regimens may increase.

When the client can achieve a higher level of wellness, not only does the client benefit, but on the larger scope, so does society. Attainment and maintenance

of health improve the quality of life for the client, decrease the costs to the client and society, and have the potential to decrease the morbidity associated with any disease process. It is therefore imperative that nursing, as well as other health care disciplines, begin addressing those economic, psychological, and sociocultural factors that affect the individual's access to and ability to achieve a higher level of health. If a relationship between one's level of unmet needs and treatment compliance were to be determined, it might serve as the basis of generating intervention modes that could increase compliance with treatment regimens.

Conceptual Framework

This study was based on Maslow's motivational theory and Neuman's Health Care Systems Model. Maslow will be discussed first.

Abraham Maslow (1970) is credited with the development of the humanistic theory of personality. His theory is one of motivation. Maslow identified a hierarchy or pyramid of needs ranging from the most basic to the higher levels of human functioning. Basic needs must be fulfilled if the individual is to move into the realization of his/her potential. Maslow (1970) stated,

Human life will never be understood unless its highest aspirations are taken into account. Growth, self-actualization, the striving towards health, the quest for identity and autonomy, the yearning for excellence (and other ways of phrasing the striving "upward") must now be accepted beyond question as a widespread and perhaps universal tendency. (pp. 12-13)

Maslow suggested that all human desires are arranged in an ascending hierarchy of priorities. His theory includes concepts of human sickness and of human health as they relate to self-fulfillment of the individual.

Maslow (1970) specifically cited nine assumptions on which his theory is based.

1. We have, each of us, an essential biologically based inner nature, which is to some degree "natural," intrinsic, given, and in a certain limited sense, unchangeable, or, at least, unchanging.
2. Each person's inner nature is in part unique to himself and in part species-wide.
3. It is possible to study this inner nature scientifically and to discover what it is like.
4. This inner nature, seems not to be intrinsically or primarily or necessarily evil. The basic needs (for life, safety and security, for belongingness and affection, for respect and self-respect, and for self-actualization), the basic human emotions and the basic human capacities are either neutral, pre-moral or positively "good". Destructiveness, sadism, cruelty, malice, etc., seem to be not intrinsic but rather a violent reaction against frustration of our intrinsic needs, emotions, and capacities.
5. Since this inner nature is good or neutral rather than bad, it is best to

- bring it out and to encourage it rather than to suppress it. If it is permitted to guide our life, we grow healthy, fruitful, and happy.
6. If this essential core of the person is denied or suppressed, he gets sick, sometimes in obvious ways, sometimes in subtle ways, sometimes immediately, sometimes later.
 7. This inner nature is weak and delicate and easily overcome by habit, cultural pressure, and wrong attitudes towards it.
 8. Even though weak, the inner nature of an individual rarely disappears, even in the sick. When denied, it persists underground forever pressing for actualization.
 9. These conclusions are articulated with the necessity of discipline, deprivation, frustration, pain and tragedy. To the extent that these experiences reveal and foster and fulfill our inner nature, to that extent they are desirable experiences. These experiences have to do with a sense of achievement and ego strength and therefore with a sense of healthy self-esteem and self-confidence. The person who hasn't conquered, withstood and overcome continues to feel doubtful that he could. (pp. 4-5)

The framework for the development of Maslow's Hierarchy of Needs is based on these nine assumptions. The needs begin with the most basic of physiological needs and ascend upward to safety needs, belongingness and love needs, esteem needs, and, finally, self-actualization needs. In order to reach the highest level of needs fulfillment, lower level needs must first be met. In reflecting on this hierarchy of needs, Maslow suggested

that improving individual health is one way of making a healthier society.

The Betty Neuman (1989) model provides a holistic approach to nursing interventions to assist the client to adapt to stressors in a manner that maintains his or her basic core's physiological, psychological, sociocultural, and developmental subsystems. The Neuman model sees the patient as a holistic individual interacting with his/her environment, which in turn impacts health behavior. According to Neuman, the primary goal of nursing intervention is maintenance of the client's system stability. The model considers the basic core, flexible lines of defense, normal lines of defense, and internal lines of resistance to be the major concepts. These concepts make up the framework from which nursing interventions are derived and implemented to assist the client in reconstitution (return to and maintenance of system stability following treatment of stressor reaction).

The basic core of an individual is his/her very substance of being and includes those factors necessary for survival and maintenance of health/wellness. These factors are considered to be unique to the individual, but share a commonality with other human beings.

The flexible lines of defense serve as a protective mechanism against stressor penetration. The flexible lines of defense are thought of as dynamic and accordion-like, rapidly expanding away from or drawing closer to the normal lines of defense in response to stress.

Neuman described the normal lines of defense as the second protective mechanism. Normal lines of defense are those behavioral responses the individual develops over a period of time that maintain a normal or usual wellness state. The normal lines of defense, like the flexible lines, can expand or contract in response to stress, but do so more slowly.

The protective mechanism that lies between the basic structure and the normal lines of defense are the lines of resistance. Neuman defined lines of resistance as internal forces encountered by a stressor that act to decrease the degree of reaction. The protective mechanisms the individual engages are behavioral responses which serve to maintain a state of wellness and balance and adaptation to environmental stressors. Loss of these protective mechanisms can be caused by stressors encountered by the individual and may result in death or illness.

The client whose energy and motivational resources are spent on meeting the demands of basic needs is less likely to be able to meet higher level needs. Compliance with health care regimens is dependent on both resources available as well as personal motivation. If the client demonstrates a high degree of unmet needs, compliance would probably not be observed.

If clients are concerned with meeting their basic needs (food, shelter, and safety), energy sources as well as resources are tied up in the act of surviving. Little is available to support achievement of a higher level of wellness, such as compliance.

Assumptions

The assumptions of this study were:

1. Humans possess an inner motivation and have the ability to strive upward to reach the height of their potential.
2. Lower level needs must be met before higher level needs are met.
3. The motivation of a human being's behavior is measurable.
4. Motivation impacts behavior.
5. Maintenance of therapeutic drug levels, appointments kept, prescribed medications taken, seizure

frequency, independent living, and gainful employment reflect, at least in part, treatment compliance.

Hypotheses

There are six needs (physical, security, relationship, respect, independence, and self-actualization) and six indicators of treatment compliance (maintenance of therapeutic drug levels, appointments kept, prescribed medications taken, seizure frequency, independent living, and gainful employment). Each of the six needs is analyzed for each of the six compliance indicators. Thus, 36 hypotheses were generated.

1. When subjects with epilepsy are classified according to therapeutic drug level categories, as an indicator of compliance, there are differences in the level of unmet physical needs.

2. When subjects with epilepsy are classified according to appointments kept categories, as an indicator of compliance, there are differences in the level of unmet physical needs.

3. When subjects with epilepsy are classified according to prescribed medications taken categories, as an indicator of compliance, there are differences in the level of unmet physical needs.

4. When subjects with epilepsy are classified according to frequency of seizure categories, as an indicator of compliance, there are differences in the level of unmet physical needs.

5. When subjects with epilepsy are classified according to gainful employment categories, as an indicator of compliance, there are differences in the level of unmet physical needs.

6. When subjects with epilepsy are classified according to independent living categories, as an indicator of compliance, there are differences in the level of unmet physical needs.

7. When subjects with epilepsy are classified according to therapeutic drug level categories, as an indicator of compliance, there are differences in the level of unmet security needs.

8. When subjects with epilepsy are classified according to appointments kept categories, as an indicator of compliance, there are differences in the level of unmet security needs.

9. When subjects with epilepsy are classified according to prescribed medications taken categories, as an indicator of compliance, there are differences in the level of unmet security needs.

10. When subjects with epilepsy are classified according to frequency of seizure categories, as an indicator of compliance, there are differences in the level of unmet security needs.

11. When subjects with epilepsy are classified according to gainful employment categories, as an indicator of compliance, there are differences in the level of unmet security needs.

12. When subjects with epilepsy are classified according to independent living categories, as an indicator of compliance, there are differences in the level of unmet security needs.

13. When subjects with epilepsy are classified according to therapeutic drug level categories, as an indicator of compliance, there are differences in the level of unmet relationship needs.

14. When subjects with epilepsy are classified according to appointments kept categories, as an indicator of compliance, there are differences in the level of unmet relationship needs.

15. When subjects with epilepsy are classified according to prescribed medications taken categories, as an indicator of compliance, there are differences in the level of unmet relationship needs.

16. When subjects with epilepsy are classified according to frequency of seizure categories, as an indicator of compliance, there are differences in the level of unmet relationship needs.

17. When subjects with epilepsy are classified according to gainful employment categories, as an indicator of compliance, there are differences in the level of unmet relationship needs.

18. When subjects with epilepsy are classified according to independent living categories, as an indicator of compliance, there are differences in the level of unmet relationship needs.

19. When subjects with epilepsy are classified according to therapeutic drug level categories, as an indicator of compliance, there are differences in the level of unmet respect needs.

20. When subjects with epilepsy are classified according to appointments kept categories, as an indicator of compliance, there are differences in the level of unmet respect needs.

21. When subjects with epilepsy are classified according to prescribed medications taken categories, as an indicator of compliance, there are differences in the level of unmet respect needs.

22. When subjects with epilepsy are classified according to frequency of seizure categories, as an indicator of compliance, there are differences in the level of unmet respect needs.

23. When subjects with epilepsy are classified according to gainful employment categories, as an indicator of compliance, there are differences in the level of unmet respect needs.

24. When subjects with epilepsy are classified according to independent living categories, as an indicator of compliance, there are differences in the level of unmet respect needs.

25. When subjects with epilepsy are classified according to therapeutic drug level categories, as an indicator of compliance, there are differences in the level of unmet independence needs.

26. When subjects with epilepsy are classified according to appointments kept categories, as an indicator of compliance, there are differences in the level of unmet independence needs.

27. When subjects with epilepsy are classified according to prescribed medications taken categories, as an indicator of compliance, there are differences in the level of unmet independence needs.

28. When subjects with epilepsy are classified according to frequency of seizure categories, as an indicator of compliance, there are differences in the level of unmet independence needs.

29. When subjects with epilepsy are classified according to gainful employment categories, as an indicator of compliance, there are differences in the level of unmet independence needs.

30. When subjects with epilepsy are classified according to independent living categories, as an indicator of compliance, there are differences in the level of unmet independence needs.

31. When subjects with epilepsy are classified according to therapeutic drug level categories, as an indicator of compliance, there are differences in the level of unmet self-actualization needs.

32. When subjects with epilepsy are classified according to appointments kept categories, as an indicator of compliance, there are differences in the level of unmet self-actualization needs.

33. When subjects with epilepsy are classified according to prescribed medications taken categories, as an indicator of compliance, there are differences in the level of unmet self-actualization needs.

34. When subjects with epilepsy are classified according to frequency of seizure categories, as an indicator of compliance, there are differences in the level of unmet self-actualization needs.

35. When subjects with epilepsy are classified according to gainful employment categories, as an indicator of compliance, there are differences in the level of unmet self-actualization needs.

36. When subjects with epilepsy are classified according to independent living categories, as an indicator of compliance, there are differences in the level of unmet self-actualization needs.

Definition of Terms

For the purpose of this study the following operational definitions were applied:

1. Maslow's Hierarchy of Needs--each of the six needs are measured separately utilizing the relevant subscale score on the Self-Actualization Inventory (modified) (Appendix A). The higher the scores, the higher the level of unmet needs.

(a) Physiologic needs--are the most basic and obvious of all human needs. These are the needs for physical survival. Included in this category are food, drink, oxygen, activity and sleep, sex, protection from extreme

temperatures, and sensory stimulation. The summed score obtained on items 1, 13, 16, 22, 25, 34, 40, 48, 51, 60, 63, 72, 75, and 78 measures physiologic needs.

(b) Security needs--the need for safety and security is the second ascending level on Maslow's hierarchy. These needs include a certain degree of certainty, order, structure, and predictability in one's environment. Also included in safety needs in the adult are job security, which includes financial protection and the acquisition of insurance (medical, unemployment, and old age). The summed score obtained on items 2, 4, 10, 19, 28, 35, 37, 45, 50, 54, 59, 69, 77, and 84 measures security needs.

(c) Relationship needs--this third hierarchical level of needs emerges when the physiological and safety needs have been met. An individual seeks for affectionate relationships with others, a place in his or her family structure, and group membership. If unmet, the individual feels loneliness, social ostracism, and personal rejection. The summed score obtained on items 3, 5, 14, 17, 29, 31, 38, 44, 47, 53, 57, 66, 74, and 81 measures relationship needs.

(d) Respect needs--needs in this category include the desire for competence, personal strength, adequacy, achievement, independence, and freedom. Mastery at this

level enables the individual to develop a sense of self-worth and feeling that they have control over their life. If unmet, the individual experiences feelings of inferiority, ineptness, weakness, and helplessness. This then causes negative self-perceptions which give rise to basic discouragement, a sense of futility and hopelessness, and inability to deal with life's daily demands. The summed score obtained on items 7, 11, 20, 23, 30, 36, 41, 43, 46, 65, 68, 71, 80, and 83 measures respect needs.

(e) Independence needs--the need for obtaining autonomy is crucial to the individual becoming an independent and self-sufficient being. If independence is not achieved by the individuals, they remain in a dependent role and unable to function on their own. Unmet needs in this domain prevent one from developing a sense of inner self. The summed score obtained on items 8, 15, 18, 26, 32, 39, 42, 49, 52, 56, 58, 62, 79, and 82 measures independence needs.

(f) Self-actualization needs--if individuals achieve the aforementioned levels, they then seek to achieve self-actualization. This is the desire to become everything that one is capable of being. If achieved, individuals pursue the desire to rise to the fullest of their

capabilities and potential and become the person they desire to be. This desire is manifested in self-improvement and accomplishment of one's personal goals and gives the individual a sense of peace with self. The summed score obtained on items 6, 9, 12, 21, 24, 27, 33, 55, 61, 64, 67, 70, 73, and 76 measures self-actualization needs.

2. Compliance refers to the degree to which an individual's behavior (in terms of taking medications, following diets, or executing lifestyle changes) coincides with medical or health advice. Six indicators of compliance were used: (a) maintenance of client's therapeutic drug levels, (b) number of appointment kept, (c) pill counts, (d) number of seizures, (e) gainful employment, and (f) independent living measured by the compliance inventory (Appendix C).

(a) Maintenance of therapeutic drug levels-- therapeutic drug levels were measured using the normal therapeutic range for each anti-epileptic medication. Subjects were classified into one of three categories (high compliance, average compliance, or low compliance) based on the following rules: subjects whose drug values fell within the therapeutic ranges were classified high compliance, subjects whose drug values fell 25% above or

below the therapeutic range were classified average compliance, subjects whose drug values fell more than 25% above or below the therapeutic range were classified low compliance.

(b) Appointments kept--the percentage of clinic appointments kept out of all clinic visits scheduled over a 6-month period was calculated. Subjects were classified into one of three categories (high compliance, average compliance, or low compliance) using the following rules: subjects who attended all scheduled clinic visits were classified high compliance, subjects who attended 75% of all scheduled clinic visits were classified average compliance, subjects who attended less than 75% of all scheduled clinic visits were classified low compliance.

(c) Prescribed medications taken--compliance with taking prescribed medications was assessed by comparing the number of pills present at the clinic visit to the number of pills the client should have taken. Subjects were classified into one of three categories (high compliance, average compliance, or low compliance) using the following rules: subjects whose pill count difference was zero were classified high compliance, subjects whose pill count indicated that 75% of the prescribed medications were taken were classified average compliance,

subjects whose pill count indicated that less than 75% of the prescribed medications were taken were classified low compliance.

(d) Seizure frequency--the subjects' seizure frequency was measured by counting the number of seizures that had occurred within a 1 year period. Subjects were classified into one of three categories (high compliance, average compliance, or low compliance) using the following rules: subjects who had experienced less than one seizure a year were classified high compliance, subjects who had experienced less than one seizure in 4 months were classified average compliance, subjects who had experienced greater than one seizure in 4 months were classified low compliance.

(e) Gainful employment--gainful employment was calculated based on the individual's employment status. Subjects were classified into one of three categories (high compliance, average compliance, or low compliance) based on the following rules: subjects who were employed full-time were classified high compliance, subjects who were employed part-time were classified as average compliance, and unemployed subjects were classified low compliance.

(f) Independent living--independent living was assessed based on the individual's independent living status. Subjects were classified into one of three categories (high compliance, average compliance, or low compliance) using the following rules: subjects living on their own without assistance were classified high compliance, subjects living on their own with assistance were classified average compliance, and subjects living dependently with others were classified low compliance.

Limitations

According to Polit and Hungler (1987), limitations of a study are variables beyond the control of the researcher. The limitations of this study were as follows:

1. The study took place in the clinical setting; therefore, the control available in the laboratory environment was not possible.
2. Another limitation may have been the Hawthorne effect. As the clients knew they were participating in a study, they may have inadvertently altered their behavioral responses.
3. The sample was one of convenience and may not be reflective of all clients with epilepsy throughout the United States. The number of operating clinics per month

and the time available made convenience sampling a necessity.

4. Sample size was another limitation as there is a limited number of clients seen in the outreach clinics each month.

5. The reliability and validity of the modified Self-Actualization Inventory is not known.

Summary

In determining the impact of Maslow's Hierarchy of Needs on one's level of compliance, the nurse can identify interventions that may facilitate the client's ability to comply with treatment regimens. Interventions directed at meeting the client's basic needs may have the potential to impact the client's willingness and ability to improve treatment compliance, thus, improving both compliance and the client's well-being.

CHAPTER II

LITERATURE REVIEW

This review focuses on compliance with treatment regimens. Various aspects of theories related to compliance are presented. In this section motivational theories of compliance (Lewin's Change Theory, Murray's Theory of Personality, Maslow's Hierarchy of Needs Theory) and care-seeking behavior theories of compliance (Lauver's Theory of Care Seeking Behavior, Becker's Health Belief Model) are discussed. Next, the impact of epilepsy as a chronic disorder is described. Finally, compliance in epilepsy is presented.

Theories Related to Compliance

General theories of motivation are summarized in this section. Theories specific to care seeking behavior are then described.

Motivation

Concepts related to human motivation have been discussed since the time of the Greek philosophers, Plato and Aristotle. The quest to understand that which drives and motivates human beings is still sought in today's

society. The general motivation theories of Lewin, Murray, and Maslow are presented.

Lewin's Change Theory

Kurt Lewin (1951) maintained that an individual's behavior is always guided by some intention to do one thing or another. Lewin also held fast to the belief that in order to explain a causal relationship between motivation and behavior one must consider achievement concepts. Achievement concepts define behavior in terms of consequences.

Lewin (1938) asserted that a man's actions are to be explained on the grounds that he perceives particular ways and means of discharging certain tensions. Those activities that an individual perceives as making possible the release of tension will attract him, they will have positive valence for the individual, and he will experience a force moving him to engage in those activities. Certain other activities may have the opposite effect; they are seen as increasing tension, have a negative effect, and generate repulsive forces.

Lewin (1938) referred to energy, tension, and force as psychological facts.

The reality of the psychological forces is the same as that of the "biological forces governing the brain." . . . It is often asked whether

psychological force is something "real" or only an "analogy." The problem of the reality of a dynamic construct is a peculiar one in a science. . . . It will suffice here to emphasize that a psychological force is as real as any other kind of dynamical construct in psychology and certainly as real as a physical force. The situation is not merely one in which the person appears to locomote in the direction to a goal. A change in the position of the goal easily proves that the dynamical interrelation between person and goal expressed in the term force is a real one. (Lewin, 1938, p. 87)

Lewin (1951) discussed basic assumptions related to the measurement of will power. These assumptions include: (a) the intention to reach a certain goal corresponds to a tension in a certain system within the individual, (b) the tension is released if the goal is reached, (c) the need for the goal corresponds to a force acting upon the person and causing a tendency to move toward the goal.

Murray's Theory of Personality

According to Murray (1938), the behavior of an individual person reveals rhythms of rest and activity. Behavior is defined in terms that take the organism from some prior state into some consequent state that is assumed to be due to a hypothetical force (a drive, need, or propensity) that operates homeostatically.

Bolles (1975) discussed the work of Murray's purposive motivation model as including the following sequence of events:

1. Some stimulus feature in the environment promises to have some effect upon the organism, either desirable or undesirable.

2. A drive or need is aroused.

3. The organism is activated to engage in certain kinds of activity that may be motor, verbal, merely ideational, or even unconscious.

4. This activity has the effect of causing a trend in the overall behavior of the organism that tends to restore equilibrium.

5. The achievement of a demotivated state is only possible in many cases through the attainment of some particular goal object.

6. This re-establishment of equilibrium, dispelling the drive, arouses a pleasurable affect.

Bolles believed that there is a large number of social as well as biological drives that motivate human behavior.

Maslow's Hierarchy of Needs

Abraham Maslow (1970) is credited with the development of the humanistic theory of personality. His theory is one of motivation. Maslow identified a hierarchy or pyramid of needs ranging from the most basic to the higher levels of human functioning. Basic needs must be fulfilled if the individual is to move into the

realization of his or her potential. Maslow (1968) suggested that all human desires are arranged in an ascending hierarchy of priorities. His theory includes concepts of human sickness and of human health as they relate to self-fulfillment of the individual (Maslow, 1968).

Research literature regarding the impact of Maslow's hierarchy on compliance is practically nonexistent. However, current literature alludes to areas of psychological, social, and economic issues which impact compliance in the client with epilepsy.

Care-Seeking Behavior/Compliance

Two theories of care-seeking behavior are summarized. Specific theories discussed are those of Lauver and Becker.

Lauver's Theory of Care-Seeking Behavior

Lauver (1992) identified a new approach to looking at patients' rationale for seeking health care. Lauver identified primary prevention as the prevention of disease. Secondary prevention includes diagnosing disease, detecting disabilities, and treating disease to prevent sequelae. In contrast, engagement in care-seeking behaviors for the goals of screening or evaluation of

symptoms exposes the patient to the possibility of learning that something may be seriously wrong. Lauver discussed the Theory of Reasoned Action in her development of the Care-Seeking Behavior Theory. She identified variables central to the Theory of Reasoned Action that included attitude, subjective norm, and intention. The individual's social norms and attitudes determine intentions, which subsequently determine behavior. The behavior of interest is one that people can initiate voluntarily. One's attitudes are determined by both perceived consequences of the behavior and evaluations of those consequences. Lauver found that previous experience with the symptoms or behavior, while not included in the theory, have been found to be important in the explanation of behavior.

Lauver described the probability of engaging in health behavior as a function of psychosocial variables. Affect, expectations and values about outcomes, habits, norms, and facilitating conditions regarding the behavior as care-seeking behavior were found to be variables. Affect refers to feelings associated with care-seeking behavior. Examples of affect include anxiety about a serious diagnosis or embarrassment about an examination. Expectations refer to the individual's beliefs about the

likelihood of relevant outcomes and the importance of those outcomes to the individual. Lauver further defined the variables of normative influence to include social and personal norms, as well as interpersonal agreements to engage in care seeking.

Becker's Health Belief Model

Over the past two decades a number of conceptual models have offered an explanation of individual personal health-related behaviors. The most popular is the Health Belief Model (Becker, 1974). Although various models and variables have been utilized in research on compliance, little has been written related to chronic illness.

Patient noncompliance with medical regimens interferes with public health and health care providers' efforts in a variety of ways. Noncompliance disrupts the benefits of preventative or curative services, involves the patient in additional diagnostic and treatment procedures, generates additional costs, makes it difficult for practitioners to conduct accurate assessments and evaluation of care provided, and negatively influences the client's views about services received (Becker, 1985). Current research data suggest that noncompliance often occurs whenever there is some form of self-administration or discretionary action involved (Becker, 1985).

The basic components of the Health Belief Model are founded in well-established psychological and behavioral theories (Becker, Maiman, Kirscht, Haefner, & Drachman, 1977). The Health Belief Model approaches behavior or decision-making under conditions of uncertainty. Behavior is predicted from both the individual's evaluation of an outcome and the expectation that a specific action will result in that outcome (Becker et al., 1977).

The major concepts of the original Health Belief Model include: (a) perceived susceptibility; (b) perceived severity; and (c) estimates of physical, psychological, financial, or other costs in the proposed action (perceived barriers) (Becker et al., 1977). The model also consists of specific stimuli that must occur in order to bring about the appropriate health behavior. These stimuli are referred to as cues to action and include symptoms of bodily states, while external cues focus on health communication or advice from others. The individual's perception of illness, and/or susceptibility, together with cues to action predict the likelihood that health-related behavior will be taken by the individual. Becker et al. discussed a number of studies on obese adolescents, which found that interventions based on physiological, psychological, and group methods yielded

rates of compliance ranging from 0 to 28%. This lack of success was believed due in part to research approaches that ignored fundamental attitudes and subjective perceptions about health and obesity.

A number of research studies have examined the relationship between care-seeking behavior and patients' subjective perceptions regarding their health. Various studies specific to health beliefs and attitudes are discussed.

Becker and Green (1975) found that the relevant health beliefs and attitudes of responsible others are often the primary determinants of the degree to which dependent patients follow treatment programs. Becker et al. (1977) identified one such study that examined health-behaviors of individuals responsible for a child's daily care. The study took place in a large ambulatory pediatric clinic at a major teaching hospital. The age of the respondents ranged from 17 to 62 years (mean 37.2 years) and the children were from 19 months to 17 years (mean 11.5 years). The 182 eligible respondents were interviewed regarding their beliefs, concerns, and motives relative to health care, and to obesity in particular.

To create a measurement of the respondents' compliance behavior, a ratio of long-term clinic

appointment keeping was calculated for each child, by dividing appointments kept by appointments made during a 12-month period. The respondents were also asked to respond to an estimate of the likelihood that they would be able to keep the child on the prescribed diet.

The study further evaluated circumstances in the home that might interfere with compliance, respondents' perceptions with respect to frequency with which the family is troubled with problems, and whether they find it relatively easy or difficult to get through the day. It was found that having fewer difficulties in the home environment had an enabling effect on diet compliance in the first month, but declined in influence in the subsequent monthly follow-up visits.

Becker (1985) looked at both determinants of noncompliance and strategies for enabling patient adherence to treatment regimens. The provision of information at an abstract level by health care providers has generally not increased patient adherence to treatment regimens. Further, variability in the effect of patients' knowledge on compliance can be attributed to several factors: (a) knowledge about certain details of the prescribed therapy is essential for correct compliance; (b) patients frequently do not possess all the information

they need to follow the regimen; and (c) providing the necessary information to the patient does not, in itself, ensure subsequent cooperation.

Becker's (1985) study was designed to evaluate patients' knowledge and the effect of knowledge on taking prescribed medications. In the study evaluating patients' knowledge of medications prescribed, 50% could not report how long they were to take the medications, 25% did not know the dosage of their medications, 15% did not know how often to take their medications, 15% took their PRN medications as regularly scheduled medications, and 20% did not know the purpose of taking their prescribed medications.

Information that specifically informed the patients about their treatment regimens increased adherence. Becker found that 70% of those who correctly understood the instructions were adhering to their treatment regimens. Thus, for individuals who are motivated to comply, but who are ignorant of the correct procedure, the provision of information appears beneficial; however, for already-knowledgeable but insufficiently motivated patients, additional information about the regimen is unlikely to enhance compliance.

Impact of Epilepsy as a Chronic Disorder

Epilepsy is a chronic disorder that can have devastating effects on the patient. A review of the financial and emotional impact of epilepsy as a chronic disorder will be discussed.

Literature on epilepsy clearly has identified that the condition is not just a medical problem, but also manifests emotional and social stressors. Lessman (1982) cited descriptive studies done by both the National Epilepsy League and the National Commission for the Control of Epilepsy and Its Consequences. Such studies indicated that psychosocial issues of concern took priority over medical treatment. It was determined that an individual's adaptation to epilepsy was dependent on his/her seizures, the associated psychological reactions to them, and the societal and familial beliefs that they held. Lessman further identified that loss of self-esteem, social isolation, and financial issues plague the client with epilepsy.

A 1-year study done by the Commission for the Control of Epilepsy and Its Consequences (1978) identified epilepsy as having the following statistical characteristics:

1. Two million Americans (1%) of the United States population have epilepsy.

2. Average annual cost of drug therapy is \$213/person.

3. Average weekly salary for the client with epilepsy is \$148.55.

4. Unemployment is twice the national rate.

The Commission for the Control of Epilepsy and Its Consequences (1978) further reported in a 1-year study the significant economic impact on the nation that epilepsy evokes:

1. Costs of unemployment reached more than \$1 billion.

2. Excess mortality in the population with epilepsy costs \$435 million.

3. Treatment costs reached \$333 million.

4. Care for the disabled client with epilepsy reached \$4,278 million.

5. Drugs cost \$110 million.

6. Research expenditures totaled \$38 million.

This study also identified the economic hardships the individual with epilepsy and his or her family face.

Shope (1982) identified the importance of recognizing the client's perspective of his/her condition: epilepsy

is a chronic illness; epilepsy is incurable; epilepsy does not show; epilepsy necessitates the taking of medication; epilepsy requires restrictions on driving, alcohol consumption, occupations, and recreational activities. Each client's symptoms are unique to him or her. The condition of epilepsy carries with it a stigma potentiated by myths and erroneous beliefs. Epilepsy also brings about financial difficulties that impact both individuals and their families.

Compliance in Epilepsy

As epilepsy is a life-long chronic disorder, compliance with treatment regimens is often problematic. This section will review those emotional and social factors that influence the patient's ability to comply with treatment regimens.

Leppik (1988) found compliance in subjects with epilepsy to have three distinct dimensions. These three dimensions were type of behavior, extent of compliance, and degree of intentionality. He found that although a client may be advised of certain behaviors (i.e., adequate sleep patterns, absence of alcohol, limited exposures to psychosocial stress, and limited audiovisual sensory stimuli), the client may choose to continue with his/her present behaviors. He described the extent of compliance

as being a continuum of behavior. On one end of this continuum is the client who follows without deviation the directions given to him or her, and on the opposite end is the client who never complies with the treatment recommendations. Leppik's study demonstrated that the majority of clients fell somewhere in-between. The third dimension is intentionality. Clients may intend to comply, but because of personal or cultural beliefs regarding their condition, they choose to act otherwise.

The most common measurement of compliance is determined through anti-epileptic drug levels. Those who fall in the therapeutic range are considered to be compliant; those who fall outside the range are considered as noncompliant. In Leppik's study, the serum Dilantin levels of clients over a period of time were measured. The study's validity was further supported by examining clients undergoing treatment with novel anti-epileptic drugs. Prepackaged medications were provided to the client and clinical observations documented by a Clinical Nurse Specialist.

Padrick (1986) described a condition of client burnout. Clients who lived with unrelieved stress, the constant fear of the unknown, the worry about long-term consequences of their disease and its treatment may become

listless, indifferent, careless, forgetful, and even bored. This burnout evolves from the client's daily attempt to cope with his or her disease process.

Strategies for improving treatment compliance in the client with epilepsy can possibly be improved with appropriate intervention. McCord (1986) found compliance higher in those clients who had positive support systems, possessed an internal locus of control, and had a positive body image and positive self-perception.

In order to bring about changes in client compliance, issues that are of a concern to the client must be recognized. These issues are deeply rooted in the client's psychological, sociological, and economic needs. Until these needs are addressed, there is little hope that the client will become totally compliant with medical and nursing recommended regimens.

Summary

Current literature supports the notion that internal motivation drives individuals in their decision-making process in all situations, including those choices related to health care. As chronic health conditions are long-standing, following recommended health care regimens is difficult and requires long-term commitment by the client. Literature regarding the impact of motivation on

compliance is limited, as measurement is difficult to achieve. However, there have been various studies that allude to areas of psychological, social, and economic issues which impact compliance in the client. Motivation is a consistent influencing factor identified in the patient's desire to seek and follow health care regimens. Attitudes and perceptions, as well as social and demographic variables, have also been identified as major factors in the choice to seek health care.

Epilepsy, as with any chronic condition, is emotionally, socially, and financially draining for those encountering the illness. These factors impact both the patient's ability and motivation for complying with treatment regimens.

Maslow's Hierarchy of Needs theory was utilized for the present research study, as it focuses on the basic needs of life that impact personal motivation. Personal motivation further influences one's desire to seek out specific behaviors for achieving the highest level of personal achievement. Care-seeking behaviors are motivation driven, thereby having the potential to influence health care decision-making by the patient.

CHAPTER III

PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

The design utilized for this research study was a nonexperimental, ex-post facto approach. According to Polit and Hungler (1987), in order for one to have a true experimental or quasi-experimental design, the element of manipulation of the independent variable must exist. Because there was no manipulation of the independent variable, this design can be classified as nonexperimental, ex-post facto.

With the absence of a control group and manipulation of the independent variable, controlling extraneous variables becomes very important. Only English-speaking subjects participated. This controlled the potential for misinterpretations of the questionnaire used for data collection. To control for instrumentation, the data were collected by the same investigator.

Setting

Data collection took place in four clinic sites in the southwestern United States. The clinics were four

federally, grant-supported, outreach clinics in the metropolitan area of a large southwestern city. Data were collected by the researcher in the privacy of a closed room. The physical facilities provided for privacy and confidentiality.

Population and Sample

The target population was subjects with epilepsy receiving nursing care in an outpatient environment throughout the United States who met the delimitations of the study. The accessible population, however, was those English-speaking subjects receiving nursing care in the outreach clinics of a large county-supported teaching institution in the southwestern United States who met the delimitations of the study.

Delimitations of the sample include the following: subjects between the age of 18 and 65 years, 3 years or greater history of epilepsy, subjects in the outreach community program, at or below poverty income according to federal guidelines, and English-speaking. The population was both multicultural and multilingual. In an attempt to control this variable, only English-speaking clients were included in the study. The use of an interpreter to translate could influence the accuracy of data collection.

By including only English-speaking subjects, the sample was not reflective of the entire clinic population.

The sample was a nonprobability, convenience sample. The researcher obtained data from 10 subjects in each of the four outreach clinics, for a total of 40 subjects. Data collection occurred over a period of 1 month to include all four clinic locations.

Protection of Human Subjects

This study utilized an interactive questionnaire and data gathered from medical records as the data collection method. The researcher had personal contact with the subjects and knew their identity; therefore, anonymity could not be maintained. Thus, the study was classified as Category II research. There were no immediate benefits identified for the subjects. The possibility existed that the research data could be used in helping to identify the needs of future clients.

Subjects were solicited from those clients presenting to the clinic on any given day that the researcher was present to collect data. If the client did not wish to participate in the study, no benefits, treatments, or aspects of patient care were changed. The choice to participate was totally voluntary, with freedom to withdraw from the study at any point in time. Subjects

were verbally solicited to participate in the study as they awaited their clinic appointments (Appendix D).

Each subject was requested to verbally answer 84 questions. They chose a number value to correspond with their agreement with the statement on a Likert scale. The questionnaire was given to the subject during his/her regular clinic visit. The time required to complete the questionnaire ranged from 30 minutes to 1 hour.

The subjects' medical records were also reviewed to determine compliance with the prescribed medications via pill counts, therapeutic drug levels, number of appointments kept, number of seizures the client experienced, independent living status, and employment status. The subjects were told that if they wished a summary of the results of this study, a copy would be available in the Texas Woman's University library after May 1994.

The subject's right to confidentiality was preserved. Data collection was performed in a private room to eliminate interruption or intrusion on the subject's privacy. All data collected were coded to protect the names of the subjects and prevent the linkage of specific data to specific subjects. At the conclusion of the study and determination of study results, all raw data collected

from the subjects were destroyed. No actual names appeared on any of the study results. Data collection took place only after appropriate approvals were received from Texas Woman's University Human Subjects Review Committee (Appendix E), Texas Woman's University graduate school (Appendix F), and The University of Texas Southwestern Medical Center at Dallas Institutional Review Board (Appendix G). Agency permission was received from Parkland Memorial Hospital (Appendix H) and subject informed consents were signed (Appendix I).

Instruments

Two instruments were used to collect the data for this study. These instruments were the Self-Actualization Inventory (modified) and the Compliance Inventory.

Self-Actualization Inventory (modified)

The first instrument used in this study was the investigator-modified Self-Actualization Inventory. The Self-Actualization Inventory by Reddin (1981) (Appendix B) is purported to measure the degree to which the needs of physical, security, relationship respect, independence, and self-actualization are measured. The tool consisted of 28 sets of three statements. The subject is asked to assign 3 points to each set by distributing 1 or more

points to one or more of the three statements.

Distribution of points is based on the subjects' individual responses. The instrument was modified (by the investigator) to provide equal weighting to each selected response.

The modified tool consists of a series of 84 items with 14 each relating to the six categories of needs. Each of these items consists of statements in the form of "I wish that (I had/could/were/knew)." Possible subscores ranged from 14 to 56. A Likert scale with a range of 1 to 4 was used to score the client's response to each of the separate statements (Appendix A). A strong disagreement with the statement rated a 1, disagreement with the statement rated a 2, agreement with the statement rated a 3, and strong agreement with the statement rated a 4. A high score indicated a high level of unmet needs in that category.

Compliance Inventory

A second instrument was utilized to measure the compliance indicators. Parts of the inventory utilized self-report for data collection (seizure frequency, gainful employment, and independent living); other parts utilized a retrospective review of the medical records to collect the data (therapeutic drug levels, number of

appointments kept, pill counts) (Appendix C). An ordinal ranking scale was utilized to measure the degree of subject compliance. Six separate areas of compliance indicators were evaluated: (a) therapeutic drug levels, (b) appointments kept, (c) prescribed medications taken, (d) frequency of seizures, (e) independent living, and (f) gainful employment. Subjects were classified into three groups (high compliance, average compliance, and low compliance) for each of the six compliance indicators.

Data Collection

Each subject was approached by the researcher while awaiting his/her clinic appointment in the waiting area and verbally solicited to participate in the study. Subjects who agreed to participate and signed the consent form were then taken to a room that provided for subject privacy, and the questionnaire was administered at that time.

The Self-Actualization Inventory (modified) questionnaire was verbally administered to the subject and their responses recorded by the investigator. Ten subjects were selected to participate from each of the four outreach clinics. Selection of subjects was from the total number of attendees on any one day in the clinic. The first 10 English-speaking subjects who agreed to

participate in the study were chosen as subjects. A total of 40 subjects completed the Self-Actualization Inventory (modified). Data collection occurred at the time of the client's clinic visit, thus negating the need for additional appointments. Compliance Inventory data were collected from a retrospective review of the subject's medical record and self-report of the subject.

Treatment of Data

An analysis of variance was computed for each of the hypotheses with the level of significance set at $p = .05$. When significant differences were found, Duncan statistical comparisons were computed to determine the nature of the differences.

CHAPTER IV

ANALYSIS OF DATA

This chapter presents the findings of the study. The sample is described and the test of the hypotheses is presented. A summary of the findings is presented.

Description of the Sample

The sample of 40 subjects was predominantly male (60%), African American (68%), and single (70%). The sample included 24 (60%) male and 16 (40%) female subjects. Male subjects ranged from 18 to 61 years of age, with a mean of 34.25 years. Female subjects ranged from 20 to 59 years of age, with a mean of 36.3 years. The mean age for both males and females combined was 35.07 years. The marital status of the sample included 28 (70%) single, 8 (20%) married, 3 (7%) separated, and 1 (.02%) divorced subject. The sample included 27 (67.5%) African American, 8 (20%) Hispanic, and 5 (12.5%) Caucasian subjects. All races were included at the four clinic sites.

Overall, the sample was classified predominantly low in the categories of compliance (48%), except for the

categories of appointments kept and medications taken (Table 1). Subjects fell into the category of low compliance (45%) more frequently with therapeutic drug levels than either high compliance (35%) or low compliance (20%). Patients' self-report of taking prescribed medications indicated a fairly equal distribution among the categories of compliance (high, 30%; average, 37.5%; and low, 32.5%). However, the compliance indicator of seizure frequency showed that 57.5% of the subjects were classified as low, 15% average, and 27.5% high compliance.

Table 1

Percent of Subjects Classified into Levels of Compliance
Categories

Compliance indicator	High		Average		Low	
	frequency	%	frequency	%	frequency	%
Drug level	14	35.0	8	20.0	18	45.0
Appointment kept	25	62.5	9	22.5	6	15.0
Meds taken	12	30.0	15	37.5	13	32.5
Seizure frequency	11	27.5	6	15.0	23	57.5
Employment	4	10.0	7	17.5	29	72.5
Independent living	<u>5</u>	<u>12.5</u>	<u>7</u>	<u>17.5</u>	<u>28</u>	<u>70.0</u>
Totals	71	30.0	52	22.0	117	48.0

The majority of the subjects (70%) were found to be living dependently with others (low compliance), 17.5% living on own with assistance (average compliance), and 12.5% living independently without assistance (high compliance). Similar results were noted with the compliance indicator of employment--72.5% being unemployed, 17.5% employed part-time, and 10% employed in a full-time status.

Overall, the subjects' scores indicated a homogeneous sample with high scores for unmet needs on all levels of Maslow's Hierarchy of Needs. Needs scores for the sample indicated a fairly equal distribution with the exception of relationship (38.55) and security (46.55) needs. The scores for physical (44.55), self-actualization (44.55), independence (41.00), and respect needs (41.07) demonstrated little variance among the levels of unmet needs based upon Maslow's Hierarchy of Needs (Table 2).

Findings

The findings for this study are relative to the 36 hypotheses presented in Chapter I. The statistical test ANOVA was used.

Table 2

Table of Means and Standard Deviations for the Unmet Needs Scores on Maslow's Hierarchy of Needs

Level of unmet needs	Means	<u>SD</u>
Physical	44.55	10.31
Security	46.55	7.30
Relationship	38.55	8.90
Respect	41.07	8.44
Independence	41.00	12.79
Self-actualization	44.55	7.38

Hypotheses

The results of the test of each hypothesis are reported. A summary of these results follows.

Hypothesis 1

Hypothesis 1 stated: When subjects with epilepsy are classified according to therapeutic drug level categories, as an indicator of compliance, there are differences in the level of unmet physical needs. ANOVA was computed, $F(2,37) = .87, p = .42$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet physical needs among the categories of therapeutic drug levels.

Hypothesis 2

Hypothesis 2 stated: When subjects with epilepsy are classified according to appointments kept categories, as an indicator of compliance, there are differences in the level of unmet physical needs. ANOVA was computed, $F(2,37) = .51, p = .60$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet physical needs among the categories of appointments kept.

Hypothesis 3

Hypothesis 3 stated: When subjects with epilepsy are classified according to prescribed medications taken categories, as an indicator of compliance, there are differences in the level of unmet physical needs. ANOVA was computed, $F(2,37) = .56, p = .57$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet physical needs among the categories of prescribed medications taken.

Hypothesis 4

Hypothesis 4 stated: When subjects with epilepsy are classified according to frequency of seizure categories, as an indicator of compliance, there are differences in the level of unmet physical needs. ANOVA was computed,

$F(2,37) = 1.39, p = .25$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet physical needs among the categories of seizure frequency.

Hypothesis 5

Hypothesis 5 stated: When subjects with epilepsy are classified according to gainful employment categories, as an indicator of compliance, there are differences in the level of unmet physical needs. ANOVA was computed, $F(2,37) = .23, p = .78$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet physical needs among the categories of gainful employment.

Hypothesis 6

Hypothesis 6 stated: When subjects with epilepsy are classified according to independent living categories, as an indicator of compliance, there are differences in the level of unmet physical needs. ANOVA was computed, $F(2,37) = 2.26, p = .11$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet physical needs among the categories of independent living.

Hypothesis 7

Hypothesis 7 stated: When subjects with epilepsy are classified according to therapeutic drug level categories, as an indicator of compliance, there are differences in the level of unmet security needs. ANOVA was computed, $F(2,37) = .90$, $p = .41$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet security needs among the categories of therapeutic drug levels.

Hypothesis 8

Hypothesis 8 stated: When subjects with epilepsy are classified according to appointments kept categories, as an indicator of compliance, there are differences in the level of unmet security needs. ANOVA was computed, $F(2,37) = .31$, $p = .73$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet security needs among the categories of appointments kept.

Hypothesis 9

Hypothesis 9 stated: When subjects with epilepsy are classified according to prescribed medications taken categories, as an indicator of compliance, there are differences in the level of unmet security needs. ANOVA

was computed, $F(2,37) = .20$, $p = .81$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet security needs among the categories of prescribed medications taken.

Hypothesis 10

Hypothesis 10 stated: When subjects with epilepsy are classified according to frequency of seizure categories, as an indicator of compliance, there are differences in the level of unmet security needs. ANOVA was computed, $F(2,37) = 2.81$, $p = .07$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet security needs among the categories of seizure frequency.

Hypothesis 11

Hypothesis 11 stated: When subjects with epilepsy are classified according to gainful employment categories, as an indicator of compliance, there are differences in the level of unmet security needs. ANOVA was computed, $F(2,37) = .57$, $p = .56$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet security needs among the categories of gainful employment.

Hypothesis 12

Hypothesis 12 stated: When subjects with epilepsy are classified according to independent living categories, as an indicator of compliance, there are differences in the level of unmet security needs. ANOVA was computed, $F(2,37) = 3.78, p = .03$ (Table 3). The research hypothesis was supported. This indicates there were differences in the level of unmet security needs among the categories of independent living. The Duncan statistical test, with a statistical significance of .05, was computed. Subjects classified average compliance (living on own without assistance) scored significantly lower in unmet security needs than did subjects classified low compliance (living dependently with others) (Table 4).

Table 3

ANOVA Table for Security Needs Scores and Independent Living Categories of Compliance

Source	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Between groups	353.35	2	176.67	3.78	.03
Within groups	1726.54	37	46.66		
Total	2079.90				

Table 4

Table of Means and Standard Deviations for Security Needs Scores by the Compliance Indicator of Independent Living Categories

Independent living categories of compliance	Mean	SD
1. Living on own without assistance (high compliance)	42.0	5.35
2. Living on own with assistance (average compliance)	41.57	7.23
3. Living dependently with others (low compliance)	48.37	6.88

Hypothesis 13

Hypothesis 13 stated: When subjects with epilepsy are classified according to therapeutic drug level categories, as an indicator of compliance, there are differences in the level of unmet relationship needs. ANOVA was computed, $F(2,37) = 1.16$, $p = .32$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet relationship needs among the categories of therapeutic drug levels.

Hypothesis 14

Hypothesis 14 stated: When subjects with epilepsy are classified according to appointments kept categories, as an indicator of compliance, there are differences in the level of unmet relationship needs. ANOVA was computed, $F(2,37) = .69$, $p = .50$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet relationship needs among the categories of appointments kept.

Hypothesis 15

Hypothesis 15 stated: When subjects with epilepsy are classified according to prescribed medications taken categories, as an indicator of compliance, there are differences in the level of unmet relationship needs. ANOVA was computed, $F(2,37) = 2.4$, $p = .10$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet relationship needs among the categories of prescribed medications taken.

Hypothesis 16

Hypothesis 16 stated: When subjects with epilepsy are classified according to frequency of seizure categories, as an indicator of compliance, there are

differences in the level of unmet relationship needs. ANOVA was computed, $F(2,37) = .82$, $p = .44$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet relationship needs among the categories of seizure frequency.

Hypothesis 17

Hypothesis 17 stated: When subjects with epilepsy are classified according to gainful employment categories, as an indicator of compliance, there are differences in the level of unmet relationship needs. ANOVA was computed, $F(2,37) = 2.31$, $p = .11$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet relationship needs among the categories of gainful employment.

Hypothesis 18

Hypothesis 18 stated: When subjects with epilepsy are classified according to independent living categories, as an indicator of compliance, there are differences in the level of unmet relationship needs. ANOVA was computed, $F(2,37) = 1.59$, $p = .21$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet relationship needs among the categories of independent living.

Hypothesis 19

Hypothesis 19 stated: When subjects with epilepsy are classified according to therapeutic drug level categories, as an indicator of compliance, there are differences in the level of unmet respect needs. ANOVA was computed, $F(2,37) = 1.14$, $p = .32$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet respect needs among the categories of therapeutic drug levels.

Hypothesis 20

Hypothesis 20 stated: When subjects with epilepsy are classified according to appointments kept categories, as an indicator of compliance, there are differences in the level of unmet respect needs. ANOVA was computed, $F(2,37) = 1.01$, $p = .37$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet respect needs among the categories of appointments kept.

Hypothesis 21

Hypothesis 21 stated: When subjects with epilepsy are classified according to prescribed medications taken categories, as an indicator of compliance, there are differences in the level of unmet respect needs. ANOVA

was computed, $F(2,37) = 1.88$, $p = .16$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet respect needs among the categories of prescribed medications taken.

Hypothesis 22

Hypothesis 22 stated: When subjects with epilepsy are classified according to frequency of seizure categories, as an indicator of compliance, there are differences in the level of unmet respect needs. ANOVA was computed, $F(2,37) = 1.18$, $p = .31$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet respect needs among the categories of seizure frequency.

Hypothesis 23

Hypothesis 23 stated: When subjects with epilepsy are classified according to gainful employment categories, as an indicator of compliance, there are differences in the level of unmet respect needs. ANOVA was computed, $F(2,37) = 1.66$, $p = .20$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet respect needs among the categories of gainful employment.

Hypothesis 24

Hypothesis 24 stated: When subjects with epilepsy are classified according to independent living categories, as an indicator of compliance, there are differences in the level of unmet respect needs. ANOVA was computed, $F(2,37) = 4.77$, $p = .01$ (Table 5). The research hypothesis was supported. This indicates that differences were found in the level of unmet respect needs scores among the categories of independent living. The Duncan statistical test with a significance of .05 was computed.

Subjects classified low compliance (living dependently with others) scored significantly higher in unmet respect needs than did subjects classified high compliance (living on own without assistance) or average compliance (living on own with assistance) (Table 6).

Table 5

ANOVA Table for Respect Needs Scores and Independent Living Categories of Compliance

Source	<u>SS</u>	<u>df</u>	Mean	<u>F</u>	<u>p</u>
Between groups	570.79	2	285.39	4.77	.01
Within groups	2211.98	37	59.78		
Total	2782.77				

Table 6

Table of Means and Standard Deviations for Respect Needs Scores by the Compliance Indicator of Independent Living Categories

Independent living categories of compliance	Mean	<u>SD</u>
1. Living on own without assistance (high compliance)	33.0	5.09
2. Living on own with assistance (average compliance)	36.28	9.17
3. Living dependently with others (low compliance)	43.34	7.62

Hypothesis 25

Hypothesis 25 stated: When subjects with epilepsy are classified according to therapeutic drug level categories, as an indicator of compliance, there are differences in the level of unmet independence needs. ANOVA was computed, $F(2,37) = 1.30$, $p = .28$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet independence needs among the categories of therapeutic drug levels.

Hypothesis 26

Hypothesis 26 stated: When subjects with epilepsy are classified according to appointments kept categories, as an indicator of compliance, there are differences in the level of unmet independence needs. ANOVA was computed, $F(2,37) = .17$, $p = .84$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet independence needs among the categories of appointments kept.

Hypothesis 27

Hypothesis 27 stated: When subjects with epilepsy are classified according to prescribed medications taken categories, as an indicator of compliance, there are differences in the level of unmet independence needs. ANOVA was computed, $F(2,37) = .02$, $p = .97$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet independence needs among the categories of prescribed medications taken.

Hypothesis 28

Hypothesis 28 stated: When subjects with epilepsy are classified according to frequency of seizure categories, as an indicator of compliance, there are

differences in the level of unmet independence needs. ANOVA was computed, $F(2,37) = .41$, $p = .66$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet independence needs among the categories of seizure frequency.

Hypothesis 29

Hypothesis 29 stated: When subjects with epilepsy are classified according to gainful employment categories, as an indicator of compliance, there are differences in the level of unmet independence needs. ANOVA was computed, $F(2,37) = .30$, $p = .74$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet independence needs among the categories of gainful employment.

Hypothesis 30

Hypothesis 30 stated: When subjects with epilepsy are classified according to independent living categories, as an indicator of compliance, there are differences in the level of unmet independence needs. ANOVA was computed, $F(2,37) = .61$, $p = .54$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet independence needs among the categories of independent living.

Hypothesis 31

Hypothesis 31 stated: When subjects with epilepsy are classified according to therapeutic drug level categories, as an indicator of compliance, there are differences in the level of unmet self-actualization needs. ANOVA was computed, $F(2,37) = .62$, $p = .54$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet self-actualization needs among the categories of therapeutic drug level.

Hypothesis 32

Hypothesis 32 stated: When subjects with epilepsy are classified according to appointments kept categories, as an indicator of compliance, there are differences in the level of unmet self-actualization needs. ANOVA was computed, $F(2,37) = .70$, $p = .50$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet self-actualization needs among the categories of appointments kept.

Hypothesis 33

Hypothesis 33 stated: When subjects with epilepsy are classified according to prescribed medications taken

categories, as an indicator of compliance, there are differences in the level of unmet self-actualization needs. ANOVA was computed, $F(2,37) = 1.62$, $p = .21$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet self-actualization needs among the categories of prescribed medications taken.

Hypothesis 34

Hypothesis 34 stated: When subjects with epilepsy are classified according to frequency of seizure categories, as an indicator of compliance, there are differences in the level of unmet self-actualization needs. ANOVA was computed, $F(2,37) = .38$, $p = .68$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet self-actualization needs among the categories of seizure frequency.

Hypothesis 35

Hypothesis 35 stated: When subjects with epilepsy are classified according to gainful employment categories, as an indicator of compliance, there are differences in the level of unmet self-actualization needs. ANOVA was

computed, $F(2,37) = 1.39, p = .26$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet self-actualization needs among the categories of gainful employment.

Hypothesis 36

Hypothesis 36 stated: When subjects with epilepsy are classified according to independent living categories, as an indicator of compliance, there are differences in the level of unmet self-actualization needs. ANOVA was computed, $F(2,37) = 1.80, p = .17$. The research hypothesis was not supported. This indicates that there were no differences in the level of unmet self-actualization needs among the categories of independent living.

Additional Findings

Although no hypotheses were predicted in advance, ANOVAs were computed utilizing the needs scores (physical, security, relationship, respect, independence, and self-actualization) as the dependent variable and the demographic variables (sex, age, race, marital status, and location) as the independent variables. No significant differences were found in the level of unmet needs except

for physical and independence needs and the demographic variable of marital status. Analysis of variance tables and means and standard deviation for each of the significant analyses are presented. In addition, three of the analyses approached significance: marital status and security needs and location and independence and self-actualization needs. ANOVA tables and means and standard deviations for these analyses are presented.

Marital Status and Physical Needs

ANOVA was computed using marital status as the independent variable and physical need scores as the dependent variable (Table 7). This suggests there are significant differences in unmet physical need scores according to marital status. The Duncan statistical test identified differences among the groups of separated and married subjects and among the groups of separated and single subjects at the .05 level of significance (Table 8). Subjects who were classified as married scored lower on unmet physical needs than did those who were classified as single, divorced, or separated.

Table 7

ANOVA Table for Physical Needs Scores and Marital Status

Source	<u>SS</u>	<u>df</u>	Mean	<u>F</u>	<u>p</u>
Between groups	1160.26	3	386.75	4.07	.00
Within groups	2879.63	35	82.27		
Total	4039.89				

Table 8

Table of Means and Standard Deviations for Physical Needs Scores by the Demographic Variable of Marital Status

Marital status	Means	<u>SD</u>
Single (<u>n</u> = 28)	42.96	6.01
Married (<u>n</u> = 8)	41.00	8.28
Divorced (<u>n</u> = 1)	49.00	
Separated (<u>n</u> = 3)	62.66	28.84
Total (<u>N</u> = 40)	44.28	10.28

Marital Status and Independence Needs

ANOVA was computed using marital status as the independent variable and independence need scores as the dependent variable (Table 9). There were differences in unmet independence needs scores according to marital status. The Duncan statistical test noted specific differences among the groups of separated and single subjects (Table 10). Subjects who were classified as married scored lower on unmet independence needs than did those classified as single, divorced, or separated.

Table 9

ANOVA Table for Independence Needs Scores and Marital Status

Source	<u>SS</u>	<u>df</u>	Mean	<u>F</u>	<u>p</u>
Between groups	1435.11	3	478.37	3.38	.02
Within groups	4939.85	35	141.13		
Total	6374.96				

Table 10

Table of Means and Standard Deviations for Independence Needs Scores and the Demographic Variable of Marital Status

Marital status	Means	<u>SD</u>
Single (n = 28)	39.35	10.36
Married (n = 8)	38.71	7.93
Divorced (n = 1)	41.00	
Separated (n = 3)	62.00	28.84
Total (N = 40)	41.02	12.95

Marital Status and Security Needs

ANOVA was computed using security needs scores as the independent variable and marital status as the dependent variable, $F(3,35) = 2.51$, $p = .07$ (Table 11, Table 12). This indicates that differences in security needs approached significance.

Table 11

ANOVA Table for Security Needs Scores and Marital Status

Source	<u>SS</u>	<u>df</u>	Mean	<u>F</u>	<u>p</u>
Between groups	369.06	3	123.02	2.51	.07
Within groups	1708.67	35	48.81		
Total	2077.73				

Table 12

Table of Means and Standard Deviations for Security Needs Scores and the Demographic Variable of Marital Status

Marital status	Means	SD
Single (<u>n</u> = 28)	45.53	6.1
Married (<u>n</u> = 8)	45.57	6.3
Divorced (<u>n</u> = 1)	49.00	
Separated (<u>n</u> = 3)	57.00	14.7
Total (<u>N</u> = 40)	46.51	7.39

Location and Independence Needs

ANOVA was computed using independence needs scores as the dependent variable and location as the independent variable, $F(3,35) = 2.65$, $p = .06$ (Table 13, Table 14).

This indicates that differences in independence needs associated with clinic location approached significance.

Table 13

ANOVA Table for Independence Needs Scores and Location

Source	<u>SS</u>	<u>df</u>	Mean	<u>F</u>	<u>p</u>
Between groups	1177.87	3	392.62	2.65	.06
Within groups	5181.10	35	148.03		
Total	6358.97				

Table 14

Table of Means and Standard Deviations for Independence Needs Scores and the Demographic Variable of Location

Location	Means	SD
Clinic A (<u>n</u> = 10)	42.10	7.29
Clinic B (<u>n</u> = 10)	35.66	7.53
Clinic C (<u>n</u> = 10)	37.10	10.00
Clinic D (<u>n</u> = 10)	45.90	6.80
Total (<u>N</u> = 40)	40.97	12.93

Location and Self-Actualization Needs

ANOVA was computed using self-actualization needs scores as the dependent variable and location as the independent variable, $F(3,35) = 2.53, p = .07$ (Table 15, Table 16). This indicates that differences in self-actualization needs associated with clinic location approached significance.

Table 15

ANOVA Table for Self-Actualization Needs Scores and Location

Source	<u>SS</u>	<u>df</u>	Mean	<u>F</u>	<u>p</u>
Between groups	374.38	3	124.79	2.53	.07
Within groups	1723.05	35	49.23		
Total	2097.43				

Summary of Findings

This section presents a brief summary of the findings. Findings for this research project were as follows:

1. The sample consisted predominantly of African Americans (68%), male (60%), and single (70%) subjects.

Table 16

Table of Means and Standard Deviations for Self-
Actualization Needs Scores and the Demographic
Variable of Location

Location	Means	<u>SD</u>
Clinic A (<u>n</u> = 10)	44.30	6.0
Clinic B (<u>n</u> = 10)	47.22	6.90
Clinic C (<u>n</u> = 10)	39.50	7.84
Clinic D (<u>n</u> = 10)	46.90	7.17
Total (<u>N</u> = 40)	44.41	7.42

2. Except for the compliance indicators of appointments kept and prescribed medications taken, the sample was predominantly classified into the category of low compliance.

3. No significant differences in the level of unmet needs were associated with the various indicators of compliance levels except for security and respect needs and the compliance indicator independent living.

4. Subjects classified in the category of average compliance for independent living (living on own without assistance) scored significantly lower in unmet security

needs than did subjects classified low compliance for independent living (living dependently with others).

5. Subjects classified in the low compliance category for independent living scored significantly higher in unmet respect needs than did subjects classified in the high compliance category (living on own without assistance) or average compliance category (living on own with assistance).

6. Married subjects had significantly lower unmet physical needs than did single, separated, or divorced subjects.

7. Married and single subjects had significantly lower unmet independence needs than did separated or divorced subjects.

8. Differences in security needs associated with marital status approached significance ($p = .07$).

9. Differences in independence needs ($p = .06$) and self-actualization needs ($p = .07$) associated with location approached significance.

SUMMARY OF THE STUDY

This section presents a summary of the study. Discussion of the findings, conclusions, implications, and recommendations for further study are indicated.

Summary

The problem of this study was: When subjects with epilepsy are classified according to indicators of compliance, are there differences in the levels of unmet needs? The theoretical frameworks used for this study was Maslow's Hierarchy of Needs and the Betty Neuman Health Care Systems Model. The assumptions of this study were:

1. Human beings possess an inner motivation and have the ability to strive upward to reach the height of their potential.
2. Lower level needs must be met before higher level needs are met.
3. The motivation of a human being's behavior is measurable.
4. Motivation impacts behavior.

5. Maintenance of therapeutic drug levels, appointments kept, prescribed medications taken, seizure frequency, independent living, and gainful employment reflect, at least in part, treatment compliance.

Limitations inherent in this research study included variables beyond the control of the researcher:

1. The study took place in the clinical setting; therefore, the control available in the laboratory environment was not possible.

2. As the clients knew they were participating in a study, they may have inadvertently altered their behavioral responses (Hawthorne effect).

3. The sample was one of convenience and may not be reflective of all clients with epilepsy throughout the United States. The number of operating clinics per month and the time available made convenience sampling a necessity.

4. Sample size was based on the limited number of clients seen in the outreach clinics monthly.

5. The reliability and validity of the modified Self-Actualization Inventory were not known.

The design was a nonexperimental, ex-post facto approach. With the absence of a control group and manipulation of the independent variable, controlling

extraneous variables became very important. To control for instrumentation, all the observations were made by the same investigator.

Data collection took place in four clinic sites in the southwestern United States. The clinics were four federally, grant-supported, outreach clinics in the metropolitan area of a large southwestern city. Data were collected by the researcher in a private room which provided privacy and confidentiality.

The target population was subjects with epilepsy receiving nursing care in an outpatient environment throughout the United States who met the delimitations of the study. Delimitations of the sample included the following: (a) subjects between the ages of 18 and 65 years, (b) 3 years or greater history of epilepsy, (c) subjects in the outreach community program, (d) at or below poverty income according to federal guidelines, and (e) English-speaking.

The nonprobability convenience sample consisted of 40 subjects; there were 10 subjects from each of the four outreach clinics. Data collection occurred over a 1-month time period.

Subjects were solicited from those clients presenting to the clinic on any given day that the researcher was

present to collect data. If the client did not wish to participate in the study, no benefits, treatments, or aspects of patient care were changed. The choice to participate was totally voluntary, with freedom to withdraw from the study at any point in time.

Two instruments were used to collect the data for this study. The Self-Actualization Inventory by Reddin (1981) is purported to measure the degree to which the needs of physical, security, relationship, respect, independence, and self-actualization are measured. The instrument was modified (by the investigator) to provide equal weighting to each of the selected responses.

The Self-Actualization Inventory (modified) was verbally administered to the subjects and their responses recorded by the investigator. Compliance Inventory data were collected from a retrospective review of the subjects' medical records and self-reports of the subjects.

An analysis of variance was computed for each of the hypotheses utilizing the level of compliance classification as the independent variable and the needs scores as the dependent variable. The level of significance was set at $p = .05$. When significant

differences were found, Duncan statistical comparisons were computed to determine the nature of the differences.

Of the 36 hypotheses tested, only 2 were found to be significant. Findings for this research project were as follows:

1. The sample consisted predominantly of single, African-American, male subjects.

2. Except for the compliance indicators of appointments kept and prescribed medications taken, the sample was predominantly classified into the category of low compliance.

3. No significant differences in the level of unmet needs associated with various indicators of compliance levels were identified except for security and respect needs and the compliance indicator independent living.

4. Subjects classified in the category of average compliance for independent living (living on own without assistance) scored significantly lower in unmet security needs than did subjects classified low compliance for independent living (living dependently with others).

5. Subjects classified in the low compliance category for independent living scored significantly higher in unmet respect needs than did subjects classified in the high compliance category (living on own without

assistance) or average compliance category (living on own with assistance).

6. Married subjects had significantly lower unmet physical needs than did single, separated, or divorced subjects.

7. Married and single subjects had significantly lower unmet independent needs than did separated or divorced subjects.

8. Differences in security needs associated with marital status approached significance.

9. Differences in independence needs and self-actualization needs associated with location approached significance.

Discussion of the Findings

This section presents a discussion of the study findings relative to the theoretical framework. Research findings are presented in relation to the conceptual framework and literature review.

The majority of the research hypotheses were not supported. This may have been, in part, due to the sample being homogeneous, the instruments used to measure compliance were imperfect, reliability and validity were not established, and compliance indicators were not conclusive indicators of compliance.

Compliance with treatment regimens continues to represent an area that has been difficult to adequately research. In fact, various perspectives exist in an attempt to define compliance. However, it is recognized that an individual's actions are driven by an innate desire or need, which motivates them to accomplish a given goal. Human behavior, in general, is influenced by personal motivation or intention (Becker et al., 1977; Lauver, 1992; Lewin, 1951; Murray, 1938).

Maslow's (1968) theory of motivation arranges needs basic to survival on a pyramid, ascending from the most basic to higher levels of human functioning. Maslow's hierarchy begins with motivation of the most basic of needs (lowest level) and ascends to the highest level of needs fulfillment. In order to reach a next higher level, lower level needs must first be met.

Study results indicated that subjects who scored higher in unmet security needs demonstrated lower compliance among the categories of independent living and that subjects who scored higher in unmet respect needs demonstrated lower compliance among the categories of independent living. In order to achieve a higher level on Maslow's Hierarchy of Needs, the unmet lower level needs (security, respect) must first be met.

Unmet needs scores for the sample were highest for physical, security, and self-actualization needs. Additional findings noted that married subjects had significantly lower unmet physical and independence needs scores, with security status approaching significance. This finding could represent the presence of a significant other as assisting to meet the individuals' physical and independence needs.

The Neuman Systems Model recognizes that interaction between individuals and their environment impacts health behavior. Neuman (1989) described the basic structure as the core of an individual necessary for survival, with the primary goal being that of system stability for maintenance of health/wellness. Protective mechanisms of the individual include responses the individual engages in to maintain a state of wellness/balance and if penetrated, results in illness/death. The degree of an individual's response is grounded in those behaviors learned in order to adapt to environmental stressors.

Loss of these protective mechanisms can be caused by environmental stressors that the individual encounters. Certainly living at or below poverty, according to federal guidelines (as were all 40 subjects), can be an external stressor. External stressors for the sample included

access to health care, economic and psychosocial barriers, as well as the inability to foresee future benefits of health maintenance. The psychosocial impact of epilepsy is greater than simply the presence of a disease process. Epilepsy as a chronic condition exerts significant financial, social, and emotional stressors on the patients and their families (Commission for the Control of Epilepsy and Its Consequences, 1978; Lessman, 1982; Shope, 1982).

With limited resources, either economic or social, the individual may be more concerned with these potential barriers than with compliance to the health care regimen (Becker, 1985; Becker et al., 1977). The lack of having higher level needs met can, at least in part, be related to the impact of environmental stressors or barriers influencing motivation.

Greater compliance was found in subjects who had fewer difficulties in the home environment (Becker et al., 1977). Social support (particularly family) is a major factor influencing compliance (Becker, 1985; McCord, 1986). Increased compliance was found in five of six investigations where there were adequate family support systems (Becker, 1985). Results of this study showed that married subjects consistently scored lower in unmet needs than did single, divorced, or separated subjects.

Of the 36 hypotheses tested, only 2 were found to be statistically significant by ANOVA. Subjects in the sample were a relatively homogeneous group (all at or below poverty level and relying on some degree of public assistance). Had the subjects been more dispersed over Maslow's six needs levels, the study's results may have noted greater differences in the level of unmet needs among the categories of compliance.

One could further postulate that the subjects were so focused on attainment of basic needs, that it was unlikely that they would see the long-range benefits associated with improvement of health through compliance with health care regimens. It is imperative that health care providers address those social, economic, and environmental factors that erect barriers to achieving higher levels of human functioning. Current health care systems may recognize the clients' psychosocial needs. However, few take into account their influence on one's willingness or ability to comply with treatment regimens.

As the sample consisted of predominantly single African-American males, there is an inadequate distribution between the sexes or remaining ethnic groups. Societal norms regarding the perception of health care stereotypically expect the male to be macho and the family

breadwinner, which could have the potential to influence the males' attitudes of illness and their desire to seek out health care. If the clients do not see themselves as ill, the perception may arise that there is no real reason to comply with treatment regimens (Becker et al., 1977). As cultural norms influence one's perception of health, this may represent a variable that was unaccounted for. Additionally, single females living at or below poverty may have greater access to federally supported health care programs. A single mother with young children has the advantage of WIC programs that serve to increase availability of resources.

Married subjects consistently scored lower on unmet needs than did those who were single, divorced, or separated. Married subjects may have not only felt more secure, but had less real physical needs than did their counterparts. Support systems have been validated as being an influencing factor in compliance (Becker & Green, 1975), and the lack of such may exert a negative influence on compliance. Single, divorced, or separated subjects may view health as attainable. Without family support to encourage seeking of health maintenance, these perceptions are unlikely to change. Recognition and inclusion of family subsystems into a client's health care regimen is

essential to encourage compliance. Ignoring the influence of family support systems may contribute negatively to the client's compliance.

If the health care industry is truly interested in moving the public towards health promotion, and not just crisis intervention, attention must be directed to looking at the total problem related to health maintenance. Health education for the public can do little to promote compliance if health care providers do not first recognize and address underlying contributing factors that interfere with a person's ability to follow treatment regimens.

Conclusions and Implications

The sample predominantly functioned on the lower levels of Maslow's Hierarchy of Needs. Due to lack of variance in the level of needs fulfillment in the sample, the hypotheses were not adequately tested. Therefore, no conclusions or generalizations can be made. As the study cannot be generalized, there are no implications for change in practice.

Recommendations for Further Study

Research is an ongoing process. Further recommendations for study include the following:

1. Further studies regarding those psychosocial factors influencing compliance need to be conducted. Enlarging the sample size to include subjects representative of all levels on Maslow's Hierarchy of Needs could provide for generalizability of the study results.

2. Studies to identify the impact of family subsystems on compliance should be completed to provide further quantitative data regarding familial influence on health-seeking behaviors.

3. Research to ascertain the influence of cultural and gender norms on health-seeking behaviors is important to address the needs of the diverse populations seeking health care in the United States today.

4. Research is needed to develop reliable and valid tools that quantitatively define and measure compliance.

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APPENDIX A

Self-Actualization Inventory
(modified)

The Self-Actualization Inventory (modified) may be obtained from:

Camilla Beth Walker
5343 N. MacArthur Blvd., #2137
Irving, Texas 75038
Phone: 214/580-9031

APPENDIX B

Reddin Self-Actualization Inventory

The Reddin Self-Actualization Inventory may be purchased from:

Organizational Tests Canada, Ltd.
P. O. Box 324
Fredericton, N.B.
Canada E3B 4V19
Phone: 506/452-7194

APPENDIX C

Compliance Inventory

COMPLIANCE INVENTORY

1. Therapeutic drug levels:
 - (a) in therapeutic range
 - (b) within 25% of therapeutic range
 - (c) not within therapeutic range and greater than 25% out of range

2. Number of appointment kept:
 - (a) appointments kept 100% of time
 - (b) appointments kept 75% of time
 - (c) appointments kept less than 75% of time

3. Pill count
 - (a) medication taken 100% of time
 - (b) medication taken 75% of time
 - (c) medication taken less than 75% of time

4. Number of seizures
 - (a) less than one seizure in a year
 - (b) less than one seizure in 4 months
 - (c) greater than one seizure in 4 months

5. Gainful employment
 - (a) employed full-time
 - (b) employed part-time
 - (c) unemployed

6. Independent living
 - (a) living on own without assistance
 - (b) living on own with assistance
 - (c) living dependently with others

APPENDIX D

Solicitation of Subjects

Date

What you would be asked to do in my study and an explanation of your rights.

TITLE: Maslow's Hierarchy of Needs and Treatment Compliance in Patients with Epilepsy

INVESTIGATOR: Camilla Beth Walker, BSN, RN
Graduate Nursing Student
Texas Woman's University
Daytime office phone: 590-8859
Night and weekends: 590-8000
(Page #21079)

PURPOSE OF THE STUDY

The study that you are invited to join is research designed to measure the relationship between the level of your needs and your ability to follow treatment plans. The study is available for both men and women between the ages of 18 and 65 years of age with a history of partial or generalized seizures for 3 years or more. You must be able to speak and understand the English language to participate in this study.

WHAT YOU WILL BE ASKED TO DO IF YOU PARTICIPATE IN THE STUDY

During your regular clinic visit you will be verbally asked 84 questions which you will rate how strongly you agree with the statements. These questions include what you believe to be your most important needs now or those needs you would like to have met. Your medical records will be reviewed by the nurse researcher to determine compliance with medications ordered, drug level results, appointment schedules, seizure frequency, independent living, and employment. It will take about 45 minutes to complete the questions. The chart review will not take any of your time to complete.

POTENTIAL RISKS AND BENEFITS

This research involves only the collection of information and the study of your medical records. The information will be collected in such a way that you cannot be identified by anyone other than the nurse researcher. Once the questionnaire is completed, the nurse researcher will assign a number to your answer sheet. Your name will not be recorded on the questionnaire. As the nurse researcher will know your name at the time of data collection, there is a possible loss of confidentiality. There are no other foreseen risks or discomforts expected. You are free to end the session at any time, including during the time the questions are being asked.

In order to protect your rights, the questionnaires will be provided to you in the privacy of a closed room. This will prevent interruption or intrusion from others during the time you are answering the questionnaire. All information will be collected by only one nurse researcher. At the conclusion of the study and determination of study results, all data will be destroyed. No actual names will appear on any of the study results. Study results will be used in the thesis which I will be submitting to Texas Woman's University as part of the requirements for graduation.

There are no immediate benefits to be received. The possibility exists that the research data could be applied in the identification of needs for yourself and other patients in the future.

SUBJECT RIGHTS

Participation in this research study is entirely voluntary. Refusal to participate will not involve penalty or loss of benefits to which you are otherwise entitled. If you decide to participate, you are free to withdraw your consent and discontinue participation at any time without affecting your status, or the medical care that you will receive.

At the completion of the study, you may contact Camilla Beth Walker at the phone number listed at the front of this form to obtain results of this research project. These results will be provided to you only after written

request is obtained by the researcher. If you should have any further questions regarding this research either at the completion of the study, or in the period of time in which the study is going on, please contact Camilla Beth Walker.

You are being asked to participate in a research study. Persons who participate in research are entitled to certain rights. These rights include, but are not limited to, the subject's right to:

1. Be informed of the nature and purpose of the research;
2. Be informed of the nature of the procedure to be followed in the research;
3. Be given an explanation of any benefits to the individual reasonably to be expected;
4. Be given a disclosure of any appropriate alternatives, drugs, or devices that may be advantageous to the subject, their relative risks and benefits;
5. Be informed of the alternatives of medical treatment, if any, available to the subject during or after the experiment if complications arise;
6. Be given an opportunity to ask questions concerning the research and procedures to be involved;
7. Be instructed that consent to participate in the study may be withdrawn at any time, and the person may discontinue participation without prejudice;
8. Be given a copy of the signed and dated consent form;
9. Be given the opportunity to decide to consent or not consent to participate in the research without the intervention of any element of force, fraud, deceit, duress, coercion, or undue influence on the person's decision.

Having heard (or read) about this study, if you want to participate in the study, please ask for the Consent Form. Read the Consent Form carefully. If you agree to everything on the Consent Form, please sign it and you will then be part of the study.

If you do NOT want to participate in this study, you do not need to do anything more.

Thank you for your time.

APPENDIX E

Texas Woman's University Human Subjects Review
Committee Permission to Conduct Study

TEXAS WOMAN'S UNIVERSITY
 Box 23717, TWU Station
 Denton, Texas 76204

1810 Inwood Road
 Dallas Parkland Campus

HUMAN SUBJECTS REVIEW COMMITTEE

Name of Investigator: Camilla Beth Walker Center: Dallas
 Address: 5343 N. McArthur Blvd. #2137 Date: 10/15/91
Irving, Texas 75039

Dear Ms. Walker:

Your study entitled Maslow's Hierarchy of Needs and Treatment
Compliance in Patients with Epilepsy

has been reviewed by a committee of the Human Subjects 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 typically require that signatures indicating informed consent be obtained from all human subjects in your studies. These are to be filed with the Human Subjects Review Committee. Any exception to this requirement is noted below. Furthermore, according to DHEW regulations, another review by the Committee is required if your project changes.

Any special provisions pertaining to your study are noted below:

Add to informed consent form: No medical service or compensation is provided to subjects by the University as a result of injury from participation in research.

Add to informed consent form: I UNDERSTAND THAT THE RETURN OF MY QUESTIONNAIRE CONSTITUTES MY INFORMED CONSENT TO ACT AS A SUBJECT IN THIS RESEARCH.

The filing of signatures of subjects with the Human Subjects Review Committee is not required.

Other:

 X No special provisions apply.

Sincerely,

Lois Hough

Chairman, Human Subjects Review
Committee

At Dallas

LH/cl
1/90

APPENDIX F

Graduate School Approval Letter

TEXAS WOMAN'S UNIVERSITY
DENTON DALLAS HOUSTON
THE GRADUATE SCHOOL
P.O. Box 22479, Denton, Texas 76204-0479 817/898-3400



January 17, 1992

Ms. Camilla Beth Walker
4349 Timberglen Rd.
Dallas, TX 75287

Dear Ms. Walker:

I have received and approved the Prospectus for your research project. Best wishes to you in the research and writing of your project.

Sincerely yours,

Leslie M Thompson

Leslie M. Thompson
Dean for Graduate Studies
and Research

dl

cc Dr. Shirley Ziegler
Dr. Carolyn Gunning

APPENDIX G

Human Subjects Review Committee Permission
University of Texas Southwestern

THE UNIVERSITY OF TEXAS
Southwestern Medical Center
 AT DALLAS

Institutional Review Board

September 20, 1991

Camilla Beth Walker
 Department of Nursing Education/PMH

Southwestern Medical School
 Southwestern Graduate School
 of Biomedical Sciences
 Southwestern Allied Health Sciences School

RE: IRB FILE # 0991 29800
 Maslow's Hierarchy of Needs and Treatment Compliance in
 Patients with Epilepsy

Dear Ms. Walker:

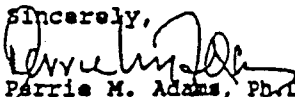
On September 20, 1991, the Institutional Review Board considered the above-referenced study and approved the protocol and consent form as enclosed. Please use this approved consent form and destroy all other drafts or undated copies. The annual review of this study is scheduled for September 1992.

University and Federal regulations require that written consent be obtained from all human subjects in your studies. The consent form should be kept on file for a period of three years past completion of the study. A copy of the consent form should be given to each participant in your study. Also, the University attorneys have asked us to remind investigators to put a copy of the consent form in the subject's medical record. Investigators should keep the original, executed copy of the consent form and file it with their records of the protocol.

The HHS regulations require you to submit annual and terminal progress reports to our Institutional Review Board and to receive continuing review of your activity annually by this Board. You are also required to report to this Board any death or serious reactions resulting from your study. Failure to submit the above reports may result in severe sanctions being placed on the Southwestern Medical Center. Furthermore, if you require a modification to this protocol contact me in order that appropriate review and approval can be made prior to implementing the change.

If you have any questions related to this protocol or to the Institutional Review Board please contact me at extension 82258 or Romelle Hase at extension 83060.

Sincerely,



Parrie M. Adams, Ph.D.
 Associate Dean for Research
 Chairman
 Institutional Review Board

PMA/rh
 Enclosure

APPENDIX H

Parkland Memorial Hospital Agency Permission
to Conduct Study

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE DALLAS COUNTY HOSPITAL DISTRICT (PARKLAND MEMORIAL HOSPITAL)

GRANTS TO CAMILLA BETH WALKER

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.

MASLOW'S HIERARCHY OF NEEDS AND LEVEL OF TREATMENT

COMPLIANCE OF PATIENTS WITH EPILEPSY

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. Other:

September 10, 1991

 Date
Camilla Beth Walker

 Signature of Student

May Mancini

 Signature of Agency Personnel
Shirley M. Zepke

 Signature of Faculty Advisor

* Fill out & sign 3 copies to be distributed:
 Original: Student, 1st copy: Agency
 2nd copy: TWU College of Nursing

APPENDIX I

Informed Consent Form

THE UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL CENTER
 AT DALLAS
 SUBJECT CONSENT TO PARTICIPATE IN RESEARCH

TITLE: Maslow's Hierarchy of Needs and Treatment Compliance
 in Patients with Epilepsy

INVESTIGATORS:

- (1) Camilla Beth Walker, RN, BSN
 Office Phone: 590-8859
 Night & Weekend: 590-8000 (PAGE)

You are being asked to participate in a research study. Persons who participate in research are entitled to certain rights. These rights include but are not limited to the subject's right to:

- (1) Be informed of the nature and purpose of the research;
- (2) Be informed of the nature of the procedure to be followed in the research;
- (3) Be given a description of any attendant discomforts and risks reasonable to be expected;
- (4) Be given an explanation of any benefits to the individual reasonable to be expected;
- (5) Be given a disclosure of any appropriate alternatives, drugs, or devices that may be advantageous to the subject, their relative risks and benefits;
- (6) Be informed of the alternatives of medical treatment, if any, available to the subject during or after the experiment if complications arise;
- (7) Be given an opportunity to ask questions concerning the research and procedures to be involved;
- (8) Be instructed that consent to participate in the study may be withdrawn at any time, and the person may discontinue participation without prejudice;
- (9) Be given a copy of the signed and dated consent form;
- (10) And be given the opportunity to decide to consent or not consent to participate in the research without the intervention of any element of force, fraud, deceit, duress, coercion, or undue influence on the person's decision.

Page 1 of 4

TITLE OF STUDY: Maslow's Hierarchy of Needs and Treatment Compliance in the Patient with Epilepsy

Page 2 of 4

You have the right to privacy. All information that is obtained in connection with this study that can be identified with you will remain confidential within the limits of State Law. Information gained from this study that can be identified with you will be released only to the investigator, and if appropriate, to your physician and the sponsors of the study. For studies regulated by the Food and Drug Administration (FDA), there is the possibility that the FDA may inspect your records. The results of this study may be published in scientific journals without identifying you by name.

In addition, the records of your participation in this study may be reviewed by members and staff of the Board of Information about your experience with this study. If you wish, you may refuse to answer any questions the Board may ask you. We also would like for you to understand that your record may be selected at random (as by drawing straws) for examination by the Board to insure that this research project is being conducted properly.

We will make every effort at preventing physical injury that could result from this research. Compensation for physical injuries incurred as a result of participating in the study is not available. The investigators are prepared to advise you about medical treatment in case adverse effects of these procedures, which you should report to them promptly. Phone numbers where the investigators may be reached are listed in the heading of this form.

If you have any questions about the research or about your rights as a subject, we want you to ask us. If you have any questions later, or if you wish to report a research-related injury (in addition to notifying the investigator), you may call the Chairman of the Institutional Review Board during office hours at (214) 688-2258.

Participation in the research study is entirely voluntary. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. If you decide to participate, you are free to withdraw your consent and discontinue participation at any time without affecting your status (as a patient, student, employee, etc.), or the medical care that you will receive.

Any significant new findings developed during the course of the research which may relate to your willingness to continue participation in this study will be provided to you.

YOU WILL BE GIVEN A COPY OF THIS FORM TO KEEP

TITLE OF STUDY: Maslow's Hierarchy of Needs and Treatment Compliance in the Patient with Epilepsy

Page 3 of 4

PURPOSE

The study that you are invited to join is research meant to establish a relationship between the degree of attainment of Maslow's Hierarchy of Needs and the level of patient compliance with the therapeutic treatment modalities. The study is available for both men and women between the ages of 18-65 years of age with a history of partial or generalized seizures for greater than three years.

WHAT YOU WILL BE ASKED TO DO IF YOU PARTICIPATE IN THE STUDY

During your regular clinic visit you will be verbally asked 84 questions which you will rate how strongly you agree with the statements. These questions include what you believe to be your most important needs now or those needs you would like to have fulfilled. Your medical record will be reviewed to determine compliance with medications ordered, antiepileptic drug level results, appointment schedules, seizure frequency, and employment. It will take about 45 minutes to complete the questions. The chart review will not take any of your time to complete.

EXPERIMENTAL PROCEDURES

This research involves only the collection of information and the study of your medical records. The information will be collected in such a way that you cannot be identified directly or through any other information associated with you.

POSSIBLE RISKS AND DISCOMFORTS

There are no foreseen risks or discomforts expected. You are free to end the session at any time during the time the questions are being asked.

POSSIBLE BENEFITS

There are no immediate benefits to be received. The possibility exists that research data could be applied in the identification of needs for yourself and future patients.

ALTERNATIVES

Another or similar study may occur in the future for your consideration. Any new findings from the current study will be told to you which may affect your participation. If you want, results of the current study are available on request.

TITLE OF STUDY: Maslow's Hierarchy of Needs and Treatment
Compliance in the Patient with Epilepsy

Page 4 of 4

If you do not wish to participate in the study, no benefits, treatments or patient care will be changed. YOU ARE MAKING A DECISION WHETHER OR NOT TO PARTICIPATE IN THIS STUDY. YOU SHOULD NOT SIGN UNTIL YOU UNDERSTAND ALL THE INFORMATION PRESENTED IN THE PREVIOUS PAGES AND UNTIL ALL YOUR QUESTIONS ABOUT THE RESEARCH HAVE BEEN ANSWERED TO YOUR SATISFACTION. YOUR SIGNATURE INDICATES THAT YOU HAVE DECIDED TO PARTICIPATE HAVING READ (OR BEEN READ) THE INFORMATION PROVIDED ABOVE.

I agree to participate in the study titled above. I acknowledge that the study as described in this informed consent document has been explained to my satisfaction and that I have been given the opportunity to ask all my questions about the study.

SIGNATURE OF SUBJECT

AGE

DATE

TIME

SIGNATURE OF LEGALLY
RESPONSIBLE REPRESENTATIVE

SIGNATURE OF WITNESS

RELATIONSHIP TO SUBJECT

SIGNATURE OF INVESTIGATOR

ADDRESS OF SUBJECT

TELEPHONE NUMBER

SUBJECT'S PRINTED NAME

HOSPITAL AND UNIT NUMBER