THE EFFECTIVENESS OF A TEACHING APPROACH ON SELF-CONCEPT IN POST-MYOCARDIAL INFARCTION PATIENTS

by

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STATEMENT BY AUTHOR

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ABSTRACT

Studies done in recent years indicate that the post-myocardial infarction patient undergoes an alteration in his self-concept as a result of a threat which he perceives as harmful to himself. The stress process of illness initiated by a stimulus, the myocardial infarction, is perceived as a threat and results in a response, an altered self-concept. Intervention to change the patient's perception of the threat influences the response of the patient.

This research study is of an experimental design, comparing the effects of a short teaching unit on the self-concept of post-myocardial infarction patients who experience the teaching interaction with post-myocardial infarction patients who do not experience the teaching interaction. Tools for data collection include the Institute for Personality and Ability Testing Anxiety Scales for measuring free anxiety level and semantic differential scales for measuring perception of the meaning of words that reflect the patient's self-concept.

Research findings indicate that the patients experiencing the teaching unit, designed to alter perceived threat, had significantly higher scores on a semantic differential scale administered after the teaching interaction.
than patients who did not experience the teaching interaction as measured by a difference-of-means test at .05 level.
CHAPTER 1

THE PROBLEMS AND HYPOTHESIS TO BE TESTED

Introduction

Professional nursing care includes helping patients to restore or to maintain health. The restoration or maintenance of health is a most important aspect of care. One of the most prevalent threats to health today is coronary heart disease, an enormous health problem by whatever means one measures it (Cook, 1966, p. 17). Helping the patient who suffers from coronary heart disease to resume or to maintain as nearly a normal life as possible is in part the responsibility of the professional nurse.

This study was an attempt to learn whether an instructional nursing approach to persons with myocardial infarction effects a positive influence on a patient's self-concept as measured by his own perception of the meaning of words related to his concept of himself as a member of a family and of a community. Perception of meaning is related to a patient's view of himself as both a family member and as a member of the community. The perception of meaning served as a measure of self-concept.
Statement of the Problem
The main purpose of the study was to compare the effects of teaching on the self-concept of post-myocardial infarction patients who experience a teaching unit with the self-concept of post-myocardial infarction patients who do not experience a teaching unit. A desired result of the study was that new knowledge, or an increase in knowledge, for the nursing profession would be realized.

Significance of the Problem
The problem is significant to nursing because it added to nursing knowledge of the care of the post-myocardial infarction patient. In adding to the body of nursing knowledge, any contribution affects the education of nurses and of nursing personnel. The problem is significant to the patient in terms of psychological health, convalescence, and total outlook on life. As Lewis (1966) suggested, many persons convalescing from myocardial infarctions should look forward to relatively normal life activities. Medical and nursing personnel might help patients to understand this. The problem is significant to society in its effect upon the attitude of individuals who have suffered a myocardial infarction and their resultant adaptation to a somewhat altered way of life.
Hypothesis to be Tested

The following hypothesis was tested in this study: Teaching post-myocardial infarction patients about possible contributing factors to their heart attack and possible implications for their daily life has a significantly positive effect on their perception of meaning as measured by a semantic differential when compared with scores of patients not receiving the instruction.

The above was the hypothesis which served as the basis for the research study.

Theoretical Framework

Lazarus' psychological stress theory served as a general framework for this study. In analyzing psychological stress, Lazarus (1967, p. 153) described it as a condition influenced by the variable of threat, which implies that the individual perceives a confrontation with a harmful condition in the future. A stimulus can produce a stress reaction psychologically by communicating this harm in some way to a person. The harm does not have to have occurred; anticipation is sufficient to affect a person (Lazarus, 1967, p. 163). Therefore, the person experiences stress as a stimulus, perceives it as a threat, and responds.

Lazarus (1967, p. 152) suggested that one might look more closely at the response characteristics,
indicating that understanding and controlling processes involved in stress have great value for the clinical practitioner. He said that "... physiological indices have been widely used in the assessment of stress reaction even when the interest is on psychological mechanisms and the term employed is anxiety" (p. 165). He also indicated that a crucial process in psychological stress is the appraisal, or perception, which occurs between the stimulus and the reaction. In this process, the individual evaluates the significance of the stimulus and its possible harm to his being. If one could change the perception, the degree or kind of response would be changed (Lazarus, 1967, p. 175). In other words, if a person's beliefs about the harm produced by the stimulus might be altered, the response reactions might also be altered.

The cardiac patient experiences anxiety as a result of stress. This stress occurs as a result of a threat to his life. The patient fears both death and the unknown. As Lazarus (1967) said, "... the prospect of death is automatically regarded as a major stress producing condition..." (p. 164). The myocardial infarction was the stimulus that led to the perceived threat. There was a threat to the person's concept of his whole self, leading to the occurrence of increased anxiety.

Lazarus (1967) also indicated that intervention affects a person's response to a threat. Herein was the
area of concentration of this research study. The response that the patient with a myocardial infarction had to threat was manifested, in one way, by an altered self-concept. Intervention in the situation occurred with the administration of a short teaching unit to the patient. Attempts to reduce fear of the unknown and to increase understanding of possible contributing factors to a heart attack were basic to the instruction which was designed to affect the patient's perception of threat. An attempt to teach the post-myocardial infarction patient about possible implications for his daily life was also part of the instruction. Intervention took place between the stimulus of the myocardial infarction, and the response reaction of the altered self-concept, in an attempt to influence the patient's perception of the threat caused by a heart attack. Figure 1 illustrates the point of intervention and the desired result of the instructional approach on the patient's perceptive process.

Assumptions

The design of the study rests upon the following assumptions:

1. The three hospitals utilized for research data in the study have a comparable standard of medical and nursing care for the patients with myocardial infarctions.
Psychological Stress Theory

STRESS CYCLE
WITHOUT INTERVENTION

RESPONSE
*Altered self-concept
Anxiety
Fear of death
Fear of unknown

THREAT STIMULUS--
Myocardial infarction

PERCEPTION--
Evaluation of threat

STRESS CYCLE
WITH INTERVENTION

RESPONSE
*More positive self-concept
Lessened anxiety
Reduced fear of unknown
Reduced fear of death

THREAT STIMULUS--
Myocardial infarction

INPUT--
KNOWLEDGE
INFORMATION

PERCEPTION--
Evaluation of threat

Figure 1. Model of Theoretical Framework
2. Each patient has sound mental processes that are altered by the effects of the myocardial infarction.
3. Each patient has a satisfactory relationship with his family.
4. Each patient maintains a satisfactory position in a community.
5. Each patient has a satisfactory relationship with his doctor.

The above assumptions provided a basis for the study. Each assumption had a part as a basic idea underlying the problem to be studied.

Limitations

The following appeared to be the major limitations of the study:

1. The sample size was limited to fourteen adult patients because of the unavailability of more patients with first myocardial infarctions in the community during the three month period of data collection.
2. The sample was limited to patients whose physicians gave permission and who themselves gave permission to be included in the study.
3. The sample was restricted to literate English-speaking patients.
4. The sample was restricted to patients in three different hospitals and to patients who had been in three different coronary care units where orientation and teaching programs varied.

5. The sample was limited to patients between the ages of thirty and seventy.

6. Limitations occurred in the inherent variables present in each patient's background.

7. Limitations occurred in the inherent variables present in each patient's relationship with his individual doctor.

8. The study was further limited by the fact that one nurse, the researcher, did all the teaching and all the testing of all patients.

The data collection and analysis occurred within the framework of the above limitations.

**Definitions**

Definitions of the specific terms as utilized throughout the text are:

**Anxiety**, as defined by the Institute for Personality and Ability Testing (IPAT) Anxiety Scale measures, is "free-floating manifest concern" (Cattell and Schéier, 1963, p. 13).
Self-concept, for the purposes of this study, was defined as an organized structure of perceptions regarding the self held by the individual (Wylie, 1968, p. 739).

The term self-concept was chosen rather than self-image or self-esteem because the terms self-image, or body-image, connoted primarily physical attributes and the term self-esteem connoted worthiness or the "worthwhileness" of the self. Self-concept, then, seemed to be an all encompassing word, more suited to the purpose of the research.

Health teaching, for this study, was the promotion of an optimum condition of mind and body through the dissemination of knowledge and understanding of the biopsychosocial aspects of a person's illness.

Meaning was the internal process or the state in the behavior of a person that represented the consequence of and the relation between stimuli and response production as measured by the semantic differential (Osgood, Suci, and Tannenbaum, 1967, p. 9).

The above terms represent words and ideas that had particular connotation for this study.

In summary, the study attempted to measure the effect of an instructional nursing approach on the post-myocardial infarction patient's self-concept. The significance of the problem was in its relationship to
nursing, to the individual patient, and to society in general. Testing of the hypothesis relating the effects of teaching on the post-myocardial infarction patient's self-concept occurred. Intervention took place between the stimulus and the patient's perception of the stimulus, in order to effect a more positive response as indicated by self-concept.
CHAPTER 2

REVIEW OF RELATED LITERATURE

Various authors have treated the subject of heart disease and its results in man, including the effects of a myocardial infarction on the rehabilitation and the adjustment process in the patient. For the person interested in the patient suffering from a myocardial infarction, an abundance of literature dealing with medical and nursing care exists. In this review of literature, the researcher examined a number of recent studies in the field that are pertinent to the problem.

Literature on Medical Care

The patient who has experienced a myocardial infarction has many feelings, one of which is a fear of death expressed as anxiety. Bellak (1952, p. 34) suggested that the heart is looked upon as the source of life. Thus, every cardiac affliction is looked upon as a threat to life.

The patient who has experienced a myocardial infarction has experienced anxiety for as Mowbray and Rodger (1967, p. 94) indicated, anxiety can be encountered in many illnesses. Wolff and Goodell (1968) also discussed anxiety and the cardiac patient, indicating that when any of the necessary relationships between man and his environment
are disturbed, many unpleasant feelings such as anxiety,
fear, and dejection develop.

The post-myocardial infarction patient has had many
thoughts about himself which affect his self-concept.
Results of a study by Cleveland and Johnson (1962) on
twenty-five young males hospitalized following an acute
myocardial infarction indicated that the coronary patient
had a self-image wherein he pictured his body as vulnerable,
with his life and being in a delicate balance. Cleveland
and Johnson's study included only male patients less than
forty years of age at the time of their first coronary
attack. The authors noted that, oftentimes, the coronary
patient was not able to face his anxiety. To outward
appearances, he continued to maintain a high level of self­
esteem. The authors stressed that this facet of behavior
should be recognized in the management of cardiac patients.
The researchers also suggested that the implications of
these findings for post-coronary management are considerable.

Braceland (1966), in discussing a patient's thoughts
about himself, felt that

... one of the most severe losses implied by a
disturbance in heart function is the threat to
physical integrity ... anticipation of dis­
ability forces him to alter his image of himself--
particularly of his body, which he may now regard
as damaged. The loss of status at work and of
prestige in social life that he visualizes in the
future threatens his self-esteem (p. 54).
In another discussion of the post-myocardial infarction patient and his thoughts, Hagan (1966) made the observation:

He is no longer the sturdy, self-reliant, capable husband and father. His concept of himself has been assaulted gravely. Physical distress, financial worries, family problems, lack of a suitable job, lack of skills and experience for what is available, fear and anxiety over what has happened all combine to make him irritable and despondent (p. 65).

The patient had an altered view of himself, an altered self-concept.

Basowitz (1955, p. 12), in discussing this altered self-concept, suggested that there is a lowering of intellectual control, attention, and concentration when anxiety is present. He suggested that reasoning and conceptual thinking seem to be somewhat impaired. Further comment on self-concept by Diggory and Rothman (1961, p. 205) indicated that the loss of ability or of skill seemed to reduce the probability of achievement and of self-esteem. Thus, it seemed that anxiety and learning and self-concept are all interrelated.

Several authors related anxiety and self-concept. Cattell and Scheier (1963) correlated anxiety and self-concept by indicating that "failure to integrate behavior about a clear self-concept . . . is one of the major causes and symptoms of anxiety" (p. 17). Wylie (1968, p. 751) related anxiety and self-concept when she suggested
that anxiety is one of the ultimate outcomes of inaccuracies in the self-concept. She also said that self-concept accounts for behavioral responses and for personality manifestations.

Information, as an aid to rehabilitation, was a concept also considered in the literature. Barker (1953) indicated that the illness of the patient is of central importance to him and that the treatment of these patients is largely a problem of educating them in new ways of living. In one comment he stated that "we fear most what we don't understand" (p. 338). Barker (1953, p. 317) also suggested that to some extent, the spread of knowledge will tend to remove fears that are based on misunderstanding.

Others have also commented on knowledge as an aid to helping patients. Meyers (1964) stated that to "deprive patients of knowledge of what is to happen to them is to increase tension which may limit their ability to structure mild or more stressful situations in the future" (p. 131). Hellerstein and Hornsten (1966), in studies conducted at the Cleveland Work Classification Clinic, have found that "group participation in a program of cardiac rehabilitation has a beneficial effect on the attitude of the cardiac patient toward his disease and on his self-image" (p. 50). Thus, knowledge and participation in rehabilitation seemed to positively affect the cardiac patient.
Finally, Rumbaugh (1966) suggested that individuals who become heart patients need more than just an assessment of their physical capabilities. He felt that they need to learn of alternative daily life activities which are compatible in their acceptability and in their physical contingencies. He went on to say that this learning is most likely ensured when there is some knowledgeable, interested person to counsel and provide them with appropriate information and guidance from the time of their initial disability on to the time when some satisfactory level of rehabilitation is achieved. . . . (p. 56).

Cardiac patients need specific knowledge to adjust to their new situations.

**Literature on Nursing Care**

Although a considerable amount has been written on nursing care of the coronary patient, relatively few authors have written on the actual teaching of the patient who has had a myocardial infarction. The following studies have dealt with the subject of patient teaching.

Kinlein (1966), in her discussion of the nursing care of the coronary patient, indicated that one of the most challenging aspects in the care of such patients is the answering of their many questions in a satisfactory manner. As she suggested, today's patients are extremely well-informed and "the veil of mystery is being removed from medicine with intensive education of the public by
newspaper and magazine accounts of illness of various individuals" (p. 39).

In another study involving rehabilitation of the myocardial infarction patient, Kos (1969) considered how the nurse might help the patient by assessing his needs and then intervening in a teaching, listening, and supportive basis. She noted that at the time her study occurred, all the included patients were beyond the critical post-myocardial infarction period since they were semi-ambulatory and anticipated discharge within a two-week period. Kos felt that, at this point, the patient was beginning to work through the "coping mechanisms of anxiety, regression, anger, apprehension, frustration . . . and some degree of denial" (p. 599) to see their health problem in perspective.

In her unpublished doctoral dissertation, Clark (1965) studied fifty-two post-myocardial infarction patients to determine what patients learned in the hospital and what the nurses' contribution to these various learnings were. In the study, she found that nurses were not satisfactorily contributing to patient learning. One of her conclusions indicated that of all medical personnel, the nurse is the most appropriate person to carry a major share of patient teaching and should become more involved in instructing patients.
Studies in the field of coronary care have indicated that knowledge is beneficial to the post-myocardial infarction patient. A positive relationship existed between knowledge, the elimination of fears, and a more totally integrated self-concept of the patient.
CHAPTER 3

DESIGN OF THE INVESTIGATION

The concept that knowledge and participation in rehabilitation positively affects the self-concept of the cardiac patient served as a basis for the study.

Design of the Study

This study used an experimental design in an attempt to measure the effectiveness of patient teaching as a means of improving the care of the post-myocardial infarction patient in the hospital. One approach was in the form of the oral administration of a short teaching unit to a group of myocardial infarction patients. The booklet "After A Coronary" (American Heart Association, 1964) was the sole basis for the teaching unit. This booklet was designed expressly for the patient who has had a myocardial infarction. The aim of the booklet was to answer some pertinent questions which may help to dispell some of the doubts and fears that beset the person who has had a coronary attack. The teaching unit functioned as the independent variable. The responses to the teaching unit in terms of self-concept served as the dependent variable. Another group of cardiac patients, the control
group, experienced no planned teaching unit. The researcher did all the teaching and all the testing for all the patients.

The Sample

The sample consisted of fourteen patients who had experienced their first myocardial infarction, and was drawn from a population of post-myocardial infarction patients in three hospitals in Tucson, Arizona, over a three-month period of time. All patients were in a coronary care unit and had had an electrocardiogram diagnosis of "myocardial infarction." Patients were literate and English-speaking and were between the ages of thirty and seventy. Permission for participation in the study was obtained from both the attending physician and the individual patient. Seven patients were randomly assigned to the control group and seven patients were randomly assigned to the experimental group by picking numbers out of a hat. The drawing of a "Group I" indicated assignment to the control group and the drawing of a "Group II" indicated assignment to the experimental group.

Measurement Instruments

Tools for data collection were the IPAT Anxiety Scale and semantic differential scales. These two instruments for measuring patient reactions were chosen for this study for several reasons. First, the IPAT Anxiety
Scale was chosen to assess general free anxiety level in the patients. In a review of the usefulness of the IPAT Anxiety Scale, Cohen (1965, p. 121) concluded that the test has no peer as a quick measure of anxiety level in literate adolescents and adults. For screening purposes, the IPAT Anxiety Scale had no equal. Cattell and Scheier (1963, p. 7) estimated the construct validity at .85 to .90. Cooley and Hutton (1965, p. 326), when dealing with a three-day interval for the IPAT Anxiety Scale, found a test-retest coefficient of .75. The IPAT Anxiety Scale used in the study is in Appendix A.

The instrument used for measurement of perception of meaning was the semantic differential. The semantic differential, Osgood et al. (1967, p. 20) related, is a combination of controlled association and scaling procedures indicating, ultimately, the direction of a testee's association and its intensity on a scale. Osgood et al. (1967, p. 127) found a test-retest coefficient of .85 when forty items sampled from a total of one thousand items were repeated with no time interval intervening. When measuring subjects having semantic differential scales at two time intervals of three minutes, six minutes, twelve minutes, thirty minutes, one day, one week, and three weeks, Osgood et al. (1967, p. 132) found that the average error of measurement was no more than one scale unit. Kerlinger (1966, p. 578), in his discussion of the semantic
differential and its attributes, indicated that it is both reliable and valid for many research purposes; that it is flexible and easy to adapt to varying research purposes; and finally, that it is quick and economical to administer and easy to score. He suggested that the semantic differential is a fairly sensitive measure of attitude change (Kerlinger, 1966, p. 579). Attitude, as defined by Kerlinger (1966, p. 483), related to thinking, feeling, perceiving, or behaving toward a cognitive object.

Osgood et al. (1967, p. 18), in discussing the semantic differential, indicated that it was designed to measure the meanings of words. He indicated that the communication of meaning is a basic function of language. Words constituted this language. In discussing applications of semantic measurement, Osgood et al. (1967, p. 330) said that the semantic differential is a useful tool for evaluating the self. One's perception of the meaning of words reflected his self-concept. Thus, for the purposes of this study, the semantic differential qualified as an instrument for measuring perception of words.

The assumption that equal distances exist on the scale served as additional rationale for using the semantic differential scales. The semantic differential, a Likert-type scale, used polar adjectives, assuming equal distances between the points of the scale. Palmer (1965), in discussing this concept, said:
A Likert-type scale is a summated scale consisting of a series of statements or items to which the subject is asked to react along a continuum. The ordering of items along a continuum results in converting qualitative facts into quantitative series. Fine discriminations in measurement, then, can be ascertained. The nature of the continuum is inferred from the character of the statements items which compose the scale (p. 100).

Thus, the semantic differential functioned as a Likert-type scale with items appearing along a continuum upon which subjects were asked to discriminate. In discussing the rationale for using equal distance intervals as a basis for the adjective scales, Palmer (1965) also said:

The arbitrary method of scoring item responses treats as though the distance between items was equal. The weights are uniform for all items. This is called the method of equal-appearing intervals. Murphy and Likert, and Rundquist and Sletto found negligible distortion when they compared the sigma method of scoring with the arbitrary assignment of scoring item responses. The sigma method of scoring is a more complicated method which involves converting the proportion of time each response was checked for each item into the corresponding sigma value on the base line of the unit normal curve (McNemar, 1946). Substantially the same results were obtained by these authors when the responses scored by both of these methods were correlated. Rundquist and Sletto obtained correlations between +.946 and +.978. Murphy and Likert obtained a correlation of +.99. Since the arbitrary method of scoring is less time consuming and yields high reliability, it is often preferred to the sigma method of scoring (p. 101).

Consequently, since the items on the semantic differential are on a continuum and discriminations are made on equally distant units, the scale was considered an interval scale upon which statistical inference is possible.
The semantic differential scales for this study were determined by having classmates write down positive adjectives that related to the way they felt about themselves as family members, and positive adjectives as to the way they felt about themselves as members of society or the community. The most frequent positive adjectives were tabulated and opposite, or negative, words were selected from Osgood et al., *The Measurement of Meaning* (1967); from *Roget's Pocket Thesaurus* (Mawson, 1956); and from *Webster's New Dictionary of Synonyms* (1968). Thus, a positive and a negative adjective made up a scale, resulting in a semantic differential with twelve scales. The first six scales were designated as the "family factor" and the last six scales were designated as the "community factor" for purposes of administration, tabulation, and analysis. Assigned values of "1" to "7" to the intervals on the scale provided a scoring method. High scores indicated a more positive self-concept, low scores a more negative concept of the self. Four persons, three classmates and one faculty member, acted as judges to evaluate the scales at this time, agreeing unanimously on the selection of words. The semantic differential used in the study is in Appendix B.

In this study, the two tests, the IPAT Anxiety Scale and the semantic differential were given on the same day. The semantic differential followed the IPAT Anxiety Scale.
Data collection began, when possible, on the sixth day following transfer from the coronary care unit to another unit in the hospital. A time allowance of twenty-four hours before and after day six was considered for the beginning of data collection. This was solely to facilitate obtaining patients for the study. Day six was selected so that the patient would be able to adjust to his new surroundings and data would be collected after the critical post-myocardial infarction period and before discharge from the hospital.

The Pilot Sample

One patient was selected to be included in the study as a pilot sample. The rationale for inclusion of a pilot patient was to test out the presentation of the teaching unit for the time involved in presenting and for understanding of terms by the patient. The pilot sample also served to familiarize the researcher with aspects of the teaching unit and to become more comfortable in the approach to the patient.

Only one change occurred in the design as a result of the pilot sample. In the oral administration of the semantic differential to the patient, the patient originally responded to the first six scales in relation to himself as a "family member" and to the last six scales in relation to himself as a "member of society." The word "society"
presented a problem because of its broadness of meaning. Subsequent patients in the study responded to the word "community" in lieu of "society." This one change as a result of the pilot sample facilitated oral administration of the semantic differential.

Method of Data Collection

In collecting the data for the study, there existed a specific set of events with all the patients. After first gaining permission from hospital administrators, the three hospitals' coronary care units were canvassed for patients who met the desired criteria. On the day of transfer from the coronary care unit to another unit in the hospital, and in the ensuing four days, the researcher obtained the physician's written permission, prior to obtaining the patient's permission, for participation in the study. Letters asking for permission from the physician were delivered by hand and picked up on the following day. All physicians but two gave their permission for inclusion of patients in the study.

After ascertaining the physicians' permission, several other steps followed. On day five after transfer from the coronary care unit, the researcher went to meet the patient and to explain that this was a study to improve the nursing care for patients who had experienced a heart attack. An explanation was made to the patients in the
control group that the study was to help design a teaching unit that would benefit the patient. A few questions would be necessary in order to obtain the information that might indicate areas of concern that the patient had. The explanation given to the patients in the experimental group was that the study was to help improve a teaching unit that would be given, on two successive days, to patients with heart attacks. In addition, a few questions on two different days would be necessary in order to indicate areas of concern that the patient might have. All patients except two agreed to be in the study at this time, although each patient was asked to think about the study overnight before making a decision. Of the two patients who refused, one was in the control group and the other in the experimental group. The stated reason for refusal was because the patient was just "not interested." All of the above took place with each patient before any actual data collection.

On the day following the explanation of the study, the patient gave written permission to include him/her in the study. Then, oral administration of the IPAT Anxiety Scale and the first semantic differential took place. The first semantic differential was referred to as semantic differential 1 in the study. Patients in the control group had no further contact with the researcher for the next three days. The experimental group, on the other hand, experienced the teaching unit on days seven and eight.
following transfer. After the conclusion of the teaching unit, each patient received a copy of "After A Coronary." On day nine, no contact occurred between the patient and the researcher. On day ten following transfer from the coronary care unit, all patients had a retest with the semantic differential. This test was referred to as semantic differential 2. Data collection ceased after this test. A time schedule for the teaching unit appears in Appendix C.

**Method of Data Analysis**

Various methods for analyzing data were employed. The IPAT Anxiety Scale measured free anxiety. The scale served as a baseline comparison between the experimental and the control group to reinforce the assumption that all the patients were from the same population. Analysis of total, covert, and overt anxiety scores was made. The semantic differential scales measured a patient's perception of the meaning of various words that related to his self-concept in terms of how he sees himself as a family member and as a member of a community.

Finally, the results of the two groups, the experimental group and the control group, were compared. A difference-of-means test was used on the data, with the acceptable level of significance at .05. The difference-of-means test involving the t-distribution was chosen over
analysis of variance because, as Blalock (1960) suggested, the former test may yield considerably more information. A one-tailed difference-of-means test may prove much more appropriate when dealing with categories where one suspects that one category will differ considerably from another. As he said,

... the more knowledge we have for predicting the relative magnitudes and/or directions of differences, the more likely it is that separate difference-of-means tests will be appropriate. Analysis of variance, on the other hand, seems to be more useful on the exploratory level (p. 253).

Blalock also indicated that the same conclusions will be reached when using two groups regardless of whether one uses analysis of variance or the difference-of-means test, concluding that analysis of variance, in this sense, is actually an extension of the difference-of-means test. The above represents the rationale for having selected the t-test for data analysis in this study.

In summation, the research took place using an experimental design with random assignment of patients to groups, and with data collection using two tools, the IPAT Anxiety Scale and the semantic differential scale. A difference-of-means test for the data analysis was selected to measure any difference between perception of meaning relating to self-concept in instructed and non-instructed groups of post-myocardial infarction patients.
CHAPTER 4

PRESENTATION OF THE DATA

This chapter contains the characteristics of the subjects in the sample who provided the data, the raw data resulting from the measurement of anxiety and self-concept, statistical analysis of the findings, and a discussion of the relationship between the self-concept of patients receiving a teaching unit and those not receiving a teaching unit.

Characteristics of the Sample

The sample included fourteen patients with diagnoses of myocardial infarction as determined from the electrocardiogram report on the patient's chart. Seven patients were in Group I, the control group, and seven patients were in Group II, the experimental group. In each group, there was one female patient. Because the number of females in the sample was so small, statistical analysis to determine whether teaching had a comparable effect on both male and female post-myocardial infarction patients' perception of meaning as measured by a semantic differential was impractical.

The subjects in the control group and the experimental group were similar in several respects. All of the
subjects were Caucasian, were married at the time the data were collected, and all had living children. For all patients, this was the first diagnosis of myocardial infarction. Each patient was attended by a different physician from the community. Distribution of the subjects in the local hospitals was even: two of the local hospitals housed five patients apiece, and the third hospital housed the remaining four patients.

The two groups, however, differed slightly in other characteristics. The mean age of the subjects in Group I was 58.00 years with a standard deviation of 6.88. The average age of the males was 58.50 years, and of the female was 55.00 years. The mean of the amount of contact between patient and researcher in this group was 48.57 minutes and had a standard deviation of 6.90.

Characteristics of Group II were slightly different. The mean age of the subjects in this group was 50.57 years with a standard deviation of 10.64. The average age of the males was 49.17 years, and of the female was 59.00. There was a difference of 7.43 years in the mean ages of the two groups, although the difference was not significant statistically at the .05 level, having a t-value of 1.42. The mean of the amount of contact between the patient and the researcher in this group was 157.86 minutes and there was a standard deviation of 17.76. The difference between the total mean minutes of contact with the patients in
Group I and Group II was 109.29 minutes. This time difference was planned as part of the research design in order to administer the instructional unit. Table 1 summarized the findings of the sample that are discussed above.

Table 1. Characteristics of Subjects with Myocardial Infarctions According to Sex and Means of Age and Minutes of Contact with the Researcher

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Mean Age</th>
<th>Mean Minutes of Contact with Researcher</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Group I</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>6</td>
<td>58.50</td>
<td>48.33</td>
</tr>
<tr>
<td>Females</td>
<td>1</td>
<td>55.00</td>
<td>50.00</td>
</tr>
<tr>
<td>Total--Group I</td>
<td>7</td>
<td>58.00</td>
<td>48.57</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td></td>
<td>6.88</td>
<td>6.90</td>
</tr>
<tr>
<td><strong>Group II</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>6</td>
<td>49.17</td>
<td>155.83</td>
</tr>
<tr>
<td>Females</td>
<td>1</td>
<td>59.00</td>
<td>170.00</td>
</tr>
<tr>
<td>Total--Group II</td>
<td>7</td>
<td>50.57</td>
<td>157.86</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td></td>
<td>10.64</td>
<td>17.76</td>
</tr>
</tbody>
</table>

Raw Data From Measurement Instruments

The raw data from the measurement instruments were tabulated after all the subjects had been seen. The results of the IPAT Anxiety Scale were tabulated first. This scale served as the baseline measure of anxiety
present in the two groups of subjects. The mean score of the control group, Group I, was 30.86 with a standard deviation of 11.74. The mean score of the subjects in the experimental group, Group II, was 29.29 with a standard deviation of 7.25. Cattell and Scheier (1963, pp. 10-11) suggest that scores of 17 through 39 indicate the range of average degree of anxiety.

Tabulation of the IPAT total covert and overt scores also occurred. Regarding the covert anxiety score, Group I had a mean score of 15.86 and a standard deviation of 5.93. Group II had a mean score of 16.14 and a standard deviation of 4.45 for the covert score. In the results of the overt anxiety scores, Group I had a mean score of 15.00 and a standard deviation of 7.28. Group II had an overt score mean of 13.14 and a standard deviation of 4.06. The results of the IPAT Anxiety Scale scores were tabulated and presented in Table 2.

Next tabulated were the results of the semantic differential scales. The initial operation performed was to select from the total of twelve scales on the semantic differential those items that correlated most highly with one another, thereby increasing the reliability of the measurement procedure as a whole by increasing its internal consistency. Selltiz et al. (1959, p. 182) indicated a method of increasing the reliability of a measurement procedure by selection and accumulation of measurement
Table 2. Raw Scores of the IPAT Anxiety Scale for Subjects with Myocardial Infarctions

<table>
<thead>
<tr>
<th>Subject</th>
<th>IPAT Anxiety Scale Total Score</th>
<th>IPAT Covert Score</th>
<th>IPAT Overt Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group I</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>27</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>2</td>
<td>9</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>29</td>
<td>20</td>
<td>9</td>
</tr>
<tr>
<td>4</td>
<td>34</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td>5</td>
<td>43</td>
<td>19</td>
<td>24</td>
</tr>
<tr>
<td>6</td>
<td>30</td>
<td>19</td>
<td>11</td>
</tr>
<tr>
<td>7</td>
<td>44</td>
<td>20</td>
<td>24</td>
</tr>
<tr>
<td>Mean</td>
<td>30.85</td>
<td>15.86</td>
<td>15.00</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>11.74</td>
<td>5.93</td>
<td>7.28</td>
</tr>
<tr>
<td>Group II</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>21</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>9</td>
<td>30</td>
<td>13</td>
<td>17</td>
</tr>
<tr>
<td>10</td>
<td>30</td>
<td>17</td>
<td>13</td>
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<tr>
<td>11</td>
<td>37</td>
<td>23</td>
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<tr>
<td>12</td>
<td>25</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td>13</td>
<td>22</td>
<td>15</td>
<td>7</td>
</tr>
<tr>
<td>14</td>
<td>40</td>
<td>21</td>
<td>19</td>
</tr>
<tr>
<td>Mean</td>
<td>29.29</td>
<td>16.14</td>
<td>13.14</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>7.25</td>
<td>4.45</td>
<td>4.06</td>
</tr>
</tbody>
</table>

A range of 17 through 39 indicates an average degree of anxiety.
operations rather than changing the conditions under which the measurement operations are made. Table 3 showed the results of the analysis of the items in the semantic differential.

Table 3. Item Analysis of Semantic Differential Scales

<table>
<thead>
<tr>
<th>Item</th>
<th>Upper 25%</th>
<th>Lower 25%</th>
<th>Discriminatory Power</th>
<th>Mean for Total Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6.86</td>
<td>4.43</td>
<td>2.43</td>
<td>5.53</td>
</tr>
<tr>
<td>2</td>
<td>6.86</td>
<td>4.00</td>
<td>2.86</td>
<td>5.68</td>
</tr>
<tr>
<td>3</td>
<td>6.71</td>
<td>4.00</td>
<td>2.71</td>
<td>5.50</td>
</tr>
<tr>
<td>4</td>
<td>6.29</td>
<td>5.14</td>
<td>1.15</td>
<td>5.79</td>
</tr>
<tr>
<td>5</td>
<td>6.71</td>
<td>3.29</td>
<td>3.42</td>
<td>5.21</td>
</tr>
<tr>
<td>6</td>
<td>6.14</td>
<td>6.14</td>
<td>0.00</td>
<td>5.93</td>
</tr>
<tr>
<td>7</td>
<td>6.43</td>
<td>4.43</td>
<td>2.00</td>
<td>5.43</td>
</tr>
<tr>
<td>8</td>
<td>5.57</td>
<td>3.86</td>
<td>1.71</td>
<td>4.96</td>
</tr>
<tr>
<td>9</td>
<td>6.86</td>
<td>5.71</td>
<td>1.15</td>
<td>6.14</td>
</tr>
<tr>
<td>10</td>
<td>6.86</td>
<td>5.29</td>
<td>1.57</td>
<td>5.79</td>
</tr>
<tr>
<td>11</td>
<td>6.43</td>
<td>5.29</td>
<td>1.14</td>
<td>5.83</td>
</tr>
<tr>
<td>12</td>
<td>6.00</td>
<td>3.86</td>
<td>2.14</td>
<td>4.68</td>
</tr>
</tbody>
</table>

In this analysis, the goal of increasing the internal consistency of the tool was first approached by dividing all the subjects into two groups, a high scoring one and a low scoring one, on the basis of the total scores. The mean scores of the upper twenty-five percent and the lower twenty-five percent were then tabulated and the results of the lower were subtracted from the upper.
group, resulting in discriminatory power of the item, or
the scale. As Sellitz et al. (1959) further explained:

If an item is consistent with the complete set of items, then the proportion of high scorers who answer the item in a specified way should be significantly different from the corresponding proportion of low scorers. Those items are most consistent with the total set which yield the largest differences in the appropriate direction (p. 184).

The researcher accepted a discriminatory power of 1.15 or higher for this measurement tool.

After completing the item analysis, two items were eliminated from the semantic differential scales. Item 6, with a discriminatory power of 0.00 and item 11, with a discriminatory power of 1.14 were eliminated from further tabulation and statistical analysis. Reference may be made to Appendix B for the specific word scales that were eliminated from the semantic differential.

The raw scores of the first and second semantic differential scales for Groups I and II were recorded in Table 4. Group I, on semantic differential 1, had a mean score of 54.71 with a standard deviation of 8.32, on the family factor a mean score of 29.29 with a standard deviation of 3.59 and on the community factor a mean score of 25.43 with a standard deviation of 5.83. On semantic differential 2, Group I had a mean score of 56.71 with a standard deviation of 8.77, on the family factor a mean score of 29.29 with a standard deviation of 4.68 and on the
Table 4. Raw Scores of Semantic Differential Scales for Subjects with Myocardial Infarctions

<table>
<thead>
<tr>
<th>Group</th>
<th>Subject</th>
<th>Semantic Differential 1 Total Score</th>
<th>Total Community Factor Score</th>
<th>Semantic Differential 2 Total Score</th>
<th>Total Community Factor Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group I</td>
<td>1</td>
<td>62</td>
<td>31</td>
<td>31</td>
<td>63</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>65</td>
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<td>4</td>
<td>54</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Standard Deviation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group II</td>
<td>8</td>
<td>61</td>
<td>33</td>
<td>28</td>
<td>67</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>42</td>
<td>19</td>
<td>23</td>
<td>54</td>
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<td>47</td>
</tr>
<tr>
<td>Mean</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Standard Deviation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Group I: Mean Total Score = 54.71, Mean Community Factor Score = 29.29, Mean Total Community Factor Score = 25.43
- Group II: Mean Total Score = 50.43, Mean Community Factor Score = 24.00, Mean Total Community Factor Score = 26.43
community factor a mean score of 27.43 with a standard deviation of 4.43.

In Group II, the mean score on semantic differential 1 was 50.43 with a standard deviation of 8.42. The mean score for the family factor was 24.00 with a standard deviation of 6.56, on the community factor a mean of 26.43 with a standard deviation of 2.23. Group II's mean score on semantic differential 2 was 57.14 with a standard deviation of 7.27, on the family factor a mean score of 28.14 with a standard deviation of 3.72, and on the community factor a mean score of 29.00 with a standard deviation of 3.96.

Statistical Analysis of the Findings

A difference-of-means test provided a method for analyzing the scores of Group I and Group II on the IPAT Anxiety Scale. This test reinforced the fact that all the subjects who had suffered a myocardial infarction had anxiety levels that were not significantly different from one another. The results of the findings were recorded in Table 5. The t-value of .30 for the total IPAT Anxiety Scale score was not significant at the .05 level using 13 degrees of freedom. The results of the covert and overt scores were also analyzed. Neither t-value was significant at the .05 level, with a covert score t-value of .10 and an overt score t-value of .59. A t-value of 2.18 was necessary
Table 5. t-Values and Probabilities for Total Sample Using Total, Covert, and Overt Mean Scores of the IPAT Anxiety Scale

<table>
<thead>
<tr>
<th>Scores</th>
<th>t-value</th>
<th>df</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPAT, Total Score</td>
<td>.30</td>
<td>13</td>
<td>n.s.</td>
</tr>
<tr>
<td>IPAT, Covert Score</td>
<td>.10</td>
<td>13</td>
<td>n.s.</td>
</tr>
<tr>
<td>IPAT, Overt Score</td>
<td>.59</td>
<td>13</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

n.s. = not significant at .05 level.

to be significant at the alpha level of .05 with 13 degrees of freedom. Thus, the subjects in Group I and Group II had no statistically significant differences in their anxiety levels at the time the data were collected.

The original hypothesis to be tested in this study was that teaching post-myocardial infarction patients about possible contributing factors to their heart attack and possible implications for their daily life has a significantly positive effect on their perception of meaning as measured by a semantic differential when compared with scores of patients not receiving the instruction. To further illustrate this, the knowledge that there was no significant difference between the mean scores of the semantic differential test given five days apart for the patients in Group I, the control group, was necessary. The
additional knowledge that there was a significant difference in the mean scores of the semantic differential test given five days apart for the patients in the experimental group was needed. In other words, to compare the effects of an instructional approach on the patients, statistical analysis of the test results within each group was necessary.

An analysis of the scores on the semantic differential scales between groups was done to determine if there was any significance in these results. A t-test between semantic differential 1 for Group I and Group II was not statistically significant at the .05 level, having a t-value of 1.35 with 13 degrees of freedom. Likewise, an analysis between the scores of semantic differential 2 for Group I and Group II resulted in no significant difference statistically, having a t-value of 0.14 with 13 degrees of freedom.

Following the above, a comparison of the results of the two groups was considered. Analysis of the scores of the semantic differential test, first for Group I and then for Group II, using a correlated t-test occurred.

A t-test for correlated data on the difference in total scores between semantic differentials 1 and 2 for Group I was done. The t-value of 1.15 with 6 degrees of freedom was not statistically significant at the chosen alpha level of .05. In analyzing the family factor for the
control group, the t-value was 0.00. The t-value for the community factor was 1.26 and also statistically not significant at the .05 level. Thus, none of the difference scores between semantic differentials 1 and 2 for the control group attained an acceptable level of statistical significance.

The same analysis was carried out on the results from Group II, the experimental or teaching group. The t-value of 4.29, using 6 degrees of freedom, for the difference in total scores was statistically significant at the alpha level of .01. In analyzing the difference in scores on the family factor for the experimental group, the t-value of 2.70 was significant at the .05 level. Likewise, a t-value of 2.51 was significant at the .05 level for difference scores of the community factor. The data were summarized and recorded in Table 6. In conclusion, the original hypothesis was supported by statistical analysis of the data.

In looking more closely at some of the data, several relationships were noted. The mean age of the subjects in Group II was 50.57 years and of the subjects in Group I was 58.00 years. Also, the subjects in Group II scored lower on the initial semantic differential scales, obtaining a mean score of 50.43 versus a mean score of 54.71 for the subjects in Group I. This also was not significant statistically. Therefore, in this study with
Table 6. *t*-Values and Probabilities on the Comparison of Semantic Differential Scale Scores of Group I and Group II

<table>
<thead>
<tr>
<th>Group</th>
<th>Score</th>
<th>t-value</th>
<th>df</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group I</td>
<td>Total Score</td>
<td>1.15</td>
<td>6</td>
<td>n.s.</td>
</tr>
<tr>
<td></td>
<td>Family Factor</td>
<td>0.00</td>
<td>6</td>
<td>n.s.</td>
</tr>
<tr>
<td></td>
<td>Community Factor</td>
<td>1.26</td>
<td>6</td>
<td>n.s.</td>
</tr>
<tr>
<td>Group II</td>
<td>Total Score</td>
<td>4.29</td>
<td>6</td>
<td><em>p &gt; .01</em></td>
</tr>
<tr>
<td></td>
<td>Family Factor</td>
<td>2.70</td>
<td>6</td>
<td><em>p &gt; .05</em></td>
</tr>
<tr>
<td></td>
<td>Community Factor</td>
<td>2.51</td>
<td>6</td>
<td><em>p &gt; .05</em></td>
</tr>
</tbody>
</table>

n.s. = not significant at .05 level.

This sample, those persons suffering a myocardial infarction at a younger age also scored lower in their perception of self-concept than those persons having a heart attack at a later age, although not to a degree that was significant statistically.

The patients in Group II, the experimental group, scored lower overall on the total IPAT Anxiety Scale score. Four persons, though, in Group II scored above the mean whereas only three subjects in Group I scored above the mean. In this study, the patients in the control group manifested a slightly higher anxiety level than those in the experimental group, though as reported earlier, the difference was not significant statistically.
Also noted was a significant negative correlation coefficient, at the .05 level, between the total IPAT Anxiety Scale scores and the scores on semantic differential 1. Group I had a correlation coefficient of -.88 between the two tests. Three persons scoring above the mean score of the IPAT Anxiety Scale also scored below the mean on the semantic differential scale measuring self-concept. The patients scoring below the mean on the IPAT Anxiety Scale scored above the mean on semantic differential 1. This supported the concept that the post-myocardial infarction patient experiences stress, which is expressed as anxiety, and is manifested in a low self-concept of the patient.

The results of the data from Group II supported this concept, too. The correlation coefficient between the IPAT Anxiety Scale scores and semantic differential 1 scores was -.61, which was statistically significant at the alpha level of .05. Four persons scoring above the mean on the IPAT Anxiety Scale scored below the mean on the semantic differential scales. The three patients scoring below the mean on the IPAT Anxiety Scale also scored above the mean in the measure of self-concept and thus supported the above concept.

Tables 7, 8, and 9 were designed to summarize the data discussed above. The results of semantic differential 2 were included in the tables to illustrate differences in
Table 7. Relationship Between Age and Scores Above and Below the Means of the IPAT Anxiety Scale Score and Semantic Differentials 1 and 2 for Subjects in Group I

<table>
<thead>
<tr>
<th>Age</th>
<th>Subject Number</th>
<th>IPAT Total Score</th>
<th>Semantic Differential 1--Total Score</th>
<th>Semantic Differential 2--Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Above Mean</td>
<td>Below Mean</td>
<td>Above Mean</td>
</tr>
<tr>
<td>30-39</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40-49</td>
<td>2</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>50-59</td>
<td>3</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>60-69</td>
<td>1</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
Table 8. Relationship Between Age and Scores Above and Below the Means of the IPAT Anxiety Scale Score and Semantic Differentials 1 and 2 for Subjects in Group II

<table>
<thead>
<tr>
<th>Age</th>
<th>Subject Number</th>
<th>IPAT Total Score Above Mean</th>
<th>Below Mean</th>
<th>Semantic Differential 1--Total Score Above Mean</th>
<th>Below Mean</th>
<th>Semantic Differential 2--Total Score Above Mean</th>
<th>Below Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>30-39</td>
<td>14</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>40-49</td>
<td>8</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>50-59</td>
<td>10</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>60-69</td>
<td>11</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>
Table 9. Mean Scores, Correlation Coefficient, and Probability for Scores on the IPAT Anxiety Scale and Semantic Differential 1 for the Total Sample

<table>
<thead>
<tr>
<th>Group</th>
<th>Scale</th>
<th>Mean</th>
<th>Correlation Coefficient</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Between IPAT and Semantic Differential 1</td>
<td></td>
</tr>
<tr>
<td>Group I</td>
<td>IPAT</td>
<td>30.85</td>
<td>-.88</td>
<td>p &gt; .01</td>
</tr>
<tr>
<td></td>
<td>Semantic Differential 1</td>
<td>54.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group II</td>
<td>IPAT</td>
<td>29.29</td>
<td>-.61</td>
<td>p &gt; .05</td>
</tr>
<tr>
<td></td>
<td>Semantic Differential 1</td>
<td>50.43</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
scoring from one test to another by each subject. The results in no way indicated the effects of teaching or not teaching the subjects. In Group I, subjects 4 and 6 each had changes in their placement above and below the mean scores in the second semantic differential. This may have been due merely to the passage of time and to uncontrolled variables within the hospital situation. In Group II, subject number 10 scored above the mean on the IPAT Anxiety Scale and also scored above the mean on both the semantic differential scales, indicating high anxiety and a positive self-concept. Subject number 12 scored below the mean on the IPAT Anxiety Scale and below the mean on the measurement of self-concept, indicating low anxiety and a negative self-concept. However, this occurred on semantic differential 1 and on semantic differential 2, this same patient scored above the mean. This may have been due to time, uncontrolled variables, or to the teaching unit that was administered.

**Summary**

Finally, the results of the study supported the initial hypothesis. Teaching did have a statistically significant effect upon the self-concept of post-myocardial infarction patients as measured by their perception of meaning on a semantic differential as compared with
post-myocardial infarction patients who did not have any teaching.
CHAPTER 5

DISCUSSION OF FINDINGS

This chapter discusses the relationship of the findings of the study and the theoretical framework upon which it was based. Conclusions and recommendations for further study are also presented in this chapter.

Theoretical Framework

Lazarus' psychological stress theory, serving as a basis for this study, provided nursing with a useful theoretical framework. In stress, the stimulus was perceived as a threat by the subject and resulted in a response. The word "anxiety" characterized the stress. In stress theory, perception occurred between the stimulus and the response. As Lazarus indicated, if one could change the perception of threat, the degree or kind of response would also change. In other words, if a person's beliefs about the threat, or the harm produced by the stimulus might be altered, the response reactions might also be altered. Herein was the importance for nursing.

In this study, the patient experienced anxiety as a result of stress caused by myocardial infarction perceived as a threat by the patient. The perceived threat affected the patient's response, an altered self-concept.
Intervention by the nursing practitioner changed the perception of the threat, resulting in a change in the response of the patient concerning his self-concept.

This research study utilized a teaching approach as an intervention technique. Input in the form of knowledge and information comprised the teaching unit, and affected the patient's perception, or his evaluation, of the threat. The response resulted in a more positive self-concept for the subjects who experienced the teaching unit than for those who did not. The response resulted in a significantly more positive perception of meaning as measured by a semantic differential for the patients who experienced the instructional unit.

Implications for the daily care of the myocardial infarction patient were obvious. The study illustrated the value of a teaching approach based on intervention at an appropriate time in the stimulus-perception-response process. The benefit of the teaching approach for the patient with a myocardial infarction has significant implications for the nursing care of the patient recovering from a heart attack.

Conclusions

Several conclusions were evident as a result of the study.
First, the original hypothesis, that teaching a post-myocardial infarction patient about possible factors that contributed to his heart attack and about implications for daily life had a positive effect on the patient's perception of meaning as measured by a semantic differential, was supported. In other words, teaching the patient had a positive effect on the self-concept of patients in the study. Patients who received no instruction did not have a statistically significant change in their self-concept.

Secondly, there was no significant difference between the mean scores of the semantic differential scales 1 and 2 administered five days apart to the patients in the control group, Group I, who did not receive any instruction. Consequently, there was no significant difference in their self-concept.

Third, the data supported the idea that there was a significant difference between the mean scores of the semantic differential scales 1 and 2 of the patients in the experimental group, Group II. This group received instruction and had a statistically significant difference in responses on the semantic differential scales administered five days apart with teaching occurring during the interval. The instruction was presumed to be the influencing factor in the results, as all subjects in the sample were randomly selected, had like diagnoses, had no
significant age differences, and had no significant differences in anxiety levels.

Fourth, there was a significant negative correlation between anxiety level, as measured by the IPAT Anxiety Scale, and a person's perception of meaning as measured by the semantic differential scales. As anxiety increased, self-concept decreased; as anxiety decreased, self-concept increased and was more positive.

Finally, the psychological stress theory and its relationship to a person's self-concept as measured by perception of meaning of words provides a useful framework for describing the process of threat reduction through health teaching. The stress theory explained processes that occur in the ill person. The theory served as a guideline for nursing intervention to reduce threat and increase self-concept in the patient.

The above comprised the primary conclusions that were discernible from the results of this research design.

**Recommendations for Further Study**

The findings of the study gave rise to several recommendations. There is a need for continued effort in the development and the refinement of tools for measuring the effectiveness of the health teaching approach to patients. Also, the value of the health teaching to various individuals and the most beneficial method of
effecting the teaching approach needs additional study. Recommendations for further study include:

1. A replication of this study using a larger sample to include a substantial number of female patients in the total sample, consisting of individuals recently diagnosed as having had a myocardial infarction, is recommended.

2. A replication of this study after first assessing the primary needs of the patient by means of an assessment tool and then basing the teaching approach and the content on the results of the assessment is recommended.

3. A study comparing the effects of the health teaching on both the self-concept and the anxiety level of the post-myocardial infarction patient is recommended.

4. A replication of the study and extension of the data collection to measure both anxiety level and self-concept when the patient returns home, in order that the health practitioner might assess the health teaching needs and the continuity of care needs, is recommended.

The above recommendations for investigations serve to promote the enlargement of nursing's body of knowledge concerning the role of health teaching for the patient
experiencing the stress of illness. The investigations also serve to promote the development of a body of nursing knowledge for the advancement of nursing care through nursing theory, science, and research.
CHAPTER 6

SUMMARY

This research study rested on the premise that professional nursing care includes helping the patient who has suffered a myocardial infarction to resume or to maintain as nearly a normal life as possible. The purpose of this research study was to measure whether an instructional nursing approach to persons with myocardial infarctions effects a positive influence on the patient's self-concept as measured by his perception of the meaning of words relating to his concept of himself as a member of a family and a member of a community. Part of the significance of the purpose lay in the value of added nursing knowledge of the care of the patient who has had a heart attack. The study was significant to the patient in terms of an aid to psychological health, convalescence, and total outlook on life. The study was important for society in its effect upon the attitude of all individuals who have suffered a myocardial infarction and have had to adapt to a somewhat altered way of life.

The theoretical framework for this study was Lazarus' psychological stress theory. In analyzing stress, Lazarus described it as being influenced by the variable
of threat. He looked at the stress process as initiated by a stimulus, perceived as a threat, and resulting in a response. Lazarus suggested that the crucial process in psychological stress is the appraisal, or perception, occurring between the stimulus and the reaction. If one could change the perception, the degree or kind of response also would be changed. In other words, if one intervened at the time of perception, a person's beliefs about the threat caused by the stimulus might be altered, and the response reactions also might be altered. Herein was the area of concentration for this research study. The researcher intervened between the stimulus of the myocardial infarction and the response reaction of the altered self-concept to influence the patient's perception of the threat caused by a heart attack.

A review of the literature on medical and nursing care of the patient with a myocardial infarction indicated that knowledge is beneficial to the patient. A positive relationship existed between knowledge, the elimination of fears caused by threat, and a more totally integrated self-concept of the patient.

This study utilized an experimental design in an attempt to collect data and to improve the care of the myocardial infarction patient. The researcher administered a short teaching unit to one group of seven post-myocardial infarction patients. Another group, the control group, did
not experience a teaching unit. Assignment to group was random. The teaching unit was the independent variable. The responses to the teaching unit in terms of self-concept served as the dependent variable. The researcher did all the teaching and all the testing of the subjects.

Health teaching about possible factors contributing to a heart attack and possible implications for daily life was the essence of the teaching unit. The information in the booklet, "After A Coronary," designed by the American Heart Association, provided the sole basis for the content of the teaching unit. The unit took two days to administer to the subjects in the experimental group. Responses to the instruction were measured as perceptions of the meaning of words on a semantic differential scale.

Tools for the data collection were the IPAT Anxiety Scale and a semantic differential scale developed by the researcher. The IPAT Anxiety Scale was chosen to assess general free anxiety level of all patients in the sample. The semantic differential was the instrument used for measurement of perception of meaning. This tool, originally developed by Osgood et al. (1967), measured the meaning of words. One's perception of the meaning of words reflected his self-concept. The semantic scales had two word groups, one referring to the patient and his family and the second to the patient and the community. Also, because of the assumption that equal distances exist on the scale, the
semantic differential was considered an interval scale upon which statistical inference was possible. Thus, rationale existed for the selection of these measurement instruments.

There were several limitations inherent in the study. First, the sample size was restricted to fourteen adult patients. The sample was limited to literate English-speaking patients in three different hospitals in the community and to patients who had been in three different coronary care units in these hospitals where orientation and teaching programs varied. The sample was further restricted to patients between the ages of thirty and seventy. Limitations occurred in the inherent variables present in each patient's background and in the inherent variables present in each patient's relationship with his individual physician. Finally, the fact that one nurse did all the teaching and all the testing of patients limited the study. These appeared to be the major limitations of this research design.

**Findings of the Study**

Statistical analysis of data was performed using a difference-of-means test, a t-test, to compare correlated data from the control group, Group I, and the experimental group, Group II. The acceptable level of significance was .05. The t-test on the total raw, total covert, and the total overt scores of the IPAT Anxiety Scale between Group
I and Group II resulted in no significant difference in the anxiety level of the two groups of patients.

Semantic differential 1 denoted the scale given on the first day of data collection and semantic differential 2 designated the scale administered on day five of data collection. For the patients in Group I, the t-values for the correlated data of total scores, the family factor, and the community factor scores on semantic scales 1 and 2 resulted in no statistically significant difference in the patients' perceptions of meaning. For the patients in Group II, the t-values for the correlated data from total scores, the family factor, and the community factor scores on semantic scales 1 and 2 resulted in a statistically significant difference at the .05 level in the patients' perceptions of meaning that was measured. Thus, the group that received the teaching unit had a significant increase in self-concept as measured by perception of the meaning of words on a semantic differential scale. The hypothesis, that teaching post-myocardial infarction patients about possible contributing factors to their heart attack and possible implications for their daily life has a positive effect on their perception of meaning as measured by a semantic differential, was supported.

Lazarus' psychological stress theory provided a useful theoretical framework for the study. By using this theory as a guideline, positive action was effected for
the benefit of the post-myocardial infarction patient. The stress theory was a useful framework for reducing threat perception and increasing self-concept.

The findings of the study gave rise to several recommendations for investigations to enlarge nursing's body of knowledge regarding the care of the post-myocardial infarction patient and the role of health teaching for the patient experiencing the stresses of illness. A replication of this study using a larger sample to include a substantial number of female patients is recommended. A replication of the study after first assessing the needs of the patient by means of an assessment tool and basing the teaching unit on the results of the assessment is recommended. Also, a study comparing the effects of the health teaching on both the self-concept and the anxiety level of the patient is recommended. Finally, a study to extend the data collection to measure both anxiety level and self-concept when the patient returns home, in order that the health practitioner might assess the health teaching needs and the continuity of care needs of the patient, might be done. There is a need for continuous development of methods of health teaching approaches and useful tools for measuring the effectiveness of the teaching. The recommendations for investigations resulting from the study may serve to promote the advancement of nursing care through nursing theory and science.
APPENDIX A

INSTITUTE FOR PERSONALITY AND ANXIETY TESTING (IPAT) ANXIETY SCALES
1. I find that my interests, in people and amusements, tend to change fairly rapidly. 
   - True
   - In between
   - False

2. If people think poorly of me I can still go on quite serenely in my own mind.
   - True
   - In between
   - False

3. I like to wait till I am sure that what I am saying is correct, before I put forward an argument.
   - Yes
   - No

4. I am inclined to let my actions get swayed by feelings of jealousy.
   - Sometimes
   - Seldom
   - Never

5. If I had my life to live over again I would:
   - (A) plan very differently, (B) want it the same
   - A
   - B

6. I admire my parents in all important matters.
   - Yes
   - No

7. I find it hard to "take 'no' for an answer", even when I know what I ask is impossible.
   - True
   - False

8. I doubt the honesty of people who are more friendly than I would naturally expect them to be.
   - True
   - False

9. In demanding and enforcing obedience my parents (or guardians) were:
   - (A) always very reasonable, (B) often unreasonable
   - A
   - B

10. I need my friends more than they seem to need me.
    - Rarely
    - Sometimes
    - Often

11. I feel sure that I could "pull myself together" to deal with an emergency.
    - Always
    - Occasional
    - Seldom

12. As a child I was afraid of the dark.
    - Often
    - Sometimes
    - Never

13. People sometimes tell me that I show my excitement in voice and manner too obviously.
    - Yes
    - Uncertain
    - No

14. If people take advantage of my friendliness I:
    - (A) soon forget and forgive, (B) resent it and hold it against them.
    - A
    - B

15. I find myself upset rather than helped by the kind of personal criticism that many people make.
    - Occasionally
    - Never

16. Often I get angry with people too quickly.
    - True
    - In between
    - False

17. I feel restless as if I want something but do not know what.
    - Very rarely
    - Sometimes
    - Often

18. I sometimes doubt whether people I am talking to are really interested in what I am saying.
    - True
    - In between
    - False

19. I have always been free from any vague feelings of ill-health, such as obscure pains, digestive upsets, awareness of heart action, etc.
    - True
    - Uncertain
    - False

20. In discussion with some people, I get so annoyed that I can hardly trust myself to speak.
    - Sometimes
    - Rarely
    - Never

CONTINUE ON NEXT PAGE.
21. Through getting tense I use up more energy than most people in getting things done

22. I make a point of not being absent-minded or forgetful of details

23. However difficult and unpleasant the obstacles, I always stick to my original intentions

24. I tend to get over-excited and “rattled” in upsetting situations

25. I occasionally have vivid dreams that disturb my sleep

26. I always have enough energy when faced with difficulties

27. I sometimes feel compelled to count things for no particular purpose

28. Most people are a little queer mentally, though they do not like to admit it

29. If I make an awkward social mistake I can soon forget it

30. I feel grouchy and just do not want to see people:
   (A) occasionally, (B) rather often

31. I am brought almost to tears by having things go wrong

32. In the midst of social groups I am nevertheless sometimes overcome by feelings of loneliness and worthlessness

33. I wake in the night and, through worry, have some difficulty in sleeping again

34. My spirits generally stay high no matter how many troubles I meet

35. I sometimes get feelings of guilt or remorse over quite small matters

36. My nerves get on edge so that certain sounds, e.g., a screechy hinge, are unbearable and give me the shivers

37. If something badly upsets me I generally calm down again quite quickly

38. I tend to tremble or perspire when I think of a difficult task ahead

39. I usually fall asleep quickly, in a few minutes, when I go to bed

40. I sometimes get in a state of tension or turmoil as I think over my recent concerns and interests

STOP HERE. BE SURE YOU HAVE ANSWERED EVERY QUESTION.
APPENDIX B

SEMANTIC DIFFERENTIAL SCALES

Directions. In order to give better care to patients who have had a heart attack, I wish to find out how you feel about yourself at this time. I wish to do this by measuring what certain words mean to you. On this paper I have some adjective. Each line of spaces has an adjective at either end. Place a check in the space in each line that most nearly applies to your feelings about yourself. For example, which adjective below best describes you, in your opinion, at this time?

Short     ___________  ___________  ___________  ___________  ___________  ___________  ___________
Tall

SCORE VALUES: #1 Very short
#2 Short
#3 Slightly short
#4 Neutral
#5 Slightly tall
#6 Tall
#7 Very tall

If you think you are very tall, place a check in space #7. If you are just tall, place a check in space #6. The answers you will give only apply to how you feel at this very moment. You may feel differently tomorrow. There are no wrong answers.

Changeable     ___________  ___________  ___________  ___________  ___________  ___________  ___________
Stable
Uncertain     ___________  ___________  ___________  ___________  ___________  ___________  ___________
Confident
Dejected     ___________  ___________  ___________  ___________  ___________  ___________  ___________
Happy
Detached     ___________  ___________  ___________  ___________  ___________  ___________  ___________
Involved
Confused     ___________  ___________  ___________  ___________  ___________  ___________  ___________
Organized
Inattentive ___________  ___________  ___________  ___________  ___________  ___________  ___________
Concerned
<table>
<thead>
<tr>
<th>Indifferent</th>
<th><strong>:</strong>:<strong>:</strong>:<strong>:</strong>:__</th>
<th>Enthusiastic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passive</td>
<td><strong>:</strong>:<strong>:</strong>:<strong>:</strong>:__</td>
<td>Active</td>
</tr>
<tr>
<td>Uninterested</td>
<td><strong>:</strong>:<strong>:</strong>:<strong>:</strong>:__</td>
<td>Interested</td>
</tr>
<tr>
<td>Lonely</td>
<td><strong>:</strong>:<strong>:</strong>:<strong>:</strong>:__</td>
<td>Friendly</td>
</tr>
<tr>
<td>Uncomfortable</td>
<td><strong>:</strong>:<strong>:</strong>:<strong>:</strong>:__</td>
<td>Comfortable</td>
</tr>
<tr>
<td>Nervous</td>
<td><strong>:</strong>:<strong>:</strong>:<strong>:</strong>:__</td>
<td>Calm</td>
</tr>
</tbody>
</table>
APPENDIX C

TIME SCHEDULE FOR TEACHING UNIT

Day 1 . . . . Day of patient's transfer from the coronary care unit to another unit.

Day 1-5 . . . . Find the patient.

Obtain the physician's written permission to include the particular patient in the research study.

Day 5 . . . . Introduce self to the patient and explain desire to include the patient in the research study.

Day 6 . . . . Obtain written permission from the patient to include him/her in the study.

Orally administer the IPAT Anxiety Scale and the semantic differential.

Day 7 . . . . Administer the major portion of the teaching unit to the patient in the experimental group. Hopefully, answers to questions 1-10 will be covered.

Day 8 . . . . Complete questions and answers.

Give a copy of "After A Coronary" to the patient.

Day 9 . . . . Have no contact with the patient.

Day 10 . . . . Retest with the semantic differential.
LIST OF REFERENCES


