

NURSES' STRUCTURED TEACHING RELATED TO CARDIAC
PATIENTS' PSYCHOLOGICAL ADJUSTMENT

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BY
JANE ANTHONY PETERSON, R.N., B.S.

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CHAPTER 1

INTRODUCTION

At some point in life almost everyone receives a terrifying shock--you or a relative or a friend has heart disease. Even the suspicion of heart disease can provoke anxiety. This anxiety is accentuated by an inadequate understanding of heart disease and its treatment. Far too few people understand the advances that have been made recently in the treatment of heart disease.

There is a need to bridge the gap between medical knowledge and the patient's understanding of heart disease and treatment possibilities. Often, understanding may mean the difference between despair and great hope, between invalidism and productive living, even between death and life for the patient. Nurses must assist patients and their families to adapt to heart disease and its life-long implications.

Studies have shown nurses' teaching interventions improve patients' knowledge of their disease and the prescribed medical regimen (Bille, 1977a). However, relatively few studies have been done on cardiac patients' psychological adjustment to the disease

entity as influenced by nurses' instructions. To assist patients to move toward useful lives compatible with cardiac illness, nurses need to be aware of the psychological adjustment of patients who have been involved in patient education programs.

Problem of Study

The problem of this study was to determine if a significant difference exists between cardiac patients' psychological adjustment who have and who have not received nurses' structured teaching interventions.

Justification of Problem

Man is placed in an ever-changing environment. A momentary hesitation is all that is needed to perceive the number of changes occurring in his life. Toffler (1970) described the accelerated pace of change modern man faces. Although environmental changes seem to affect only one aspect of man's life, man reacts to the situation as a unified whole (Toffler, 1970).

Through the process of adaptation, man attempts to cope with the changing environment to meet his needs. Adaptation problems result from the responses that are disruptive to personal integrity (Roberts, 1976).

The goal of nursing has clearly been defined as helping the client to adapt to situations of health and illness (Roy, 1976). Nurses can effect change to stabilize positive adaptation by manipulating the change stimuli or by broadening the patient's coping abilities (Roy, 1976).

Nurses' teaching interventions can promote patients' learning so they can effectively cope with their health situations. Teaching provides one of the major ways to achieve the goal of nursing: to help patients strengthen themselves through strengthening role performance (Redman, 1972). Redman (1976) considered the aim of teaching to be the modification of behavior in the areas of understanding, performance of psychomotor skills, and conscious attitudes.

The objectives of rehabilitation of the coronary patient are twofold: to restore optimal function (physical, mental, and social) so the patient may live a useful life and to prevent clinical episodes of ischemic heart disease (Goldberg, 1973). Wenger (1975) stressed that information about heart disease and its management should be presented so the patient can better comprehend the rationale for controlling the disease. Satisfactory rehabilitation depends on a patient's adjustment to

psychological problems, in addition to physical limitations, related to the underlying disease (Royle, 1973).

Numerous studies have been reported to evaluate the effectiveness of patient teaching programs. In a study by Bille (1977a), 12 myocardial infarction patients were shown to have an increased knowledge following a structured teaching program. Rosenberg (1971) demonstrated that patient's knowledge and adherence to a prescribed medical regimen increased following an education program for 50 congestive heart failure patients. In a study of 100 patients admitted to a coronary care unit, the patients placed high value on information by the nurse (Cassem, Hackett, & Bascom, 1970). A 35-day study was conducted on 15 randomly selected myocardial infarction patients at Rose General Hospital (Hahn, 1970). An individualized teaching program had been in effect at the time of the patient's hospitalization. Patients had favorable comments regarding the program.

Of the studies reported, few substantiate that teaching interventions promote patients' adjustment to their health state. However, Royle (1973) did study the adaptation of patients to their cardiac illness. Royle interviewed 20 myocardial infarction patients to assess their psychological adaptation at various levels of their

cardiac illness. When specific instructions were given regarding therapeutic measures, patient anxiety lessened. Patients progressed more effectively through identifiable phases of adaptation with information nurses provided in coronary care and general units.

Nursing's goal generally deals with helping the patient to adapt in various situations of health and illness (Roy, 1976). Since most studies have not evaluated patients' adjustment to their illness following nurses' instructions, exploration in this area is needed. The relationship between nurses's instruction to patients and patients' psychological adjustment to the disease entity is needed to demonstrate patient's adaptation to their health state. Further studies are indicated to ascertain if cardiac patients' adjustment has been facilitated by nurses' teaching interventions.

Conceptual Framework

Nurses as early as Florence Nightingale have strived to explain the basis for their nursing actions. However, in recent years nursing has made greater efforts to define its theoretical base for practice. These efforts are aimed at defining more clearly the person who receives care, the goal of nursing, and the nurse's

activities. Various frameworks have been devised by nursing theorists to describe the scientific discipline of nursing.

One such framework, the Roy Adaptation Model of Nursing, was described by Roy (1976). The goal of nursing is to assist man's adaptation to changes he will encounter in alterations of health status (Roy, 1976). Patients will present unique ways of coping with their health situations. Since the goal of nursing is to promote adaptation, nurses must assess the patients' adaptation and plan interventions accordingly.

Man is a biopsychosocial being in constant interaction with a changing environment. Uniquely, man copes with this changing environment by utilizing both acquired and innate adaptive mechanisms. A positive response to a changing environment is the process of adaptation. This is a general behavior that maintains the integrity of the individual. A maladaptive response does not maintain integrity and is disruptive to the individual (Roy, 1976).

Roy drew further from the work of Helson to describe the process. Helson (1964) theorized man's ability to respond positively, or to adapt, depends upon the degree of change taking place and the state of the person coping

with the change. An adaptive response will result following confrontation with change stimuli in relation to the person's coping ability.

Man is conceptualized as having four modes of adaptation: (a) physiologic needs, (b) self-concept, (c) role function, and (d) interdependence (Roy, 1976). All nursing activity is aimed at promoting man's adaptation in these four modes during health and illness.

When confronted with an illness, man must maintain psychic integrity (Roy, 1976). That is, man must adapt to the illness in the self-concept mode. The self-concept mode is composed of the physical self and the personal self. A psychological threat often exists in the person with an illness. This requires the person's psychological adaptation to the physical and psychic changes perpetuated by the illness.

A positive behavioral response indicates a patient is adapting to reach the identified goal of nursing care. The nurse's role is to support and promote adaptation by intervening in the process (Roy, 1976).

Roy's Adaptation Model for nursing intervention can be supported by evaluating the patient's adaptive responses. By this process, nursing can substantiate goal attainment. According to the adaptation concept of

nursing, nursing strives to promote adaptation in health and illness (Roy, 1976). Through nursing research it can be demonstrated that nursing activities can facilitate the change of maladaptive patient situations toward positive adaptation.

Assumptions

For the purposes of this study, the following were assumed:

1. The goal of nursing is to promote man's adaptation in situations of health and illness.
2. Man utilizes available adaptive mechanisms to cope with a changing environment.
3. The psychological adjustment of the two groups of cardiac patients will be similar prior to any nurses' teaching interventions.

Hypothesis

For the purpose of this study, the following hypothesis was tested:

There is no significant difference in the psychological adjustment of cardiac patients who have and who have not received nurses' structured teaching interventions.

Definition of Terms

For the purposes of this study, the following terms were defined and emphasized throughout:

1. Cardiac patient--any patient hospitalized in the Coronary Intensive Care Unit and suspected of having coronary atherosclerosis on the basis of any one of the following: history of angina pectoris, myocardial infarction, or physician's diagnosis of coronary atherosclerotic heart disease, or positive exercise stress test.

2. Nurses' structured teaching interventions--method of instructing cardiac patients individually in regard to their disease. A specific teaching outline was utilized with topics identified basic to the understanding of atherosclerotic coronary heart disease and its management. All pertinent aspects of the disease are included in the instruction to the patient: nature of the disease, the expected clinical course of the disease, hospital care, risk factor modification, dietary management, exercise, long-range goals, and follow-up care (Appendix A).

3. Psychological adjustment--changes in customary behavior to more effectively meet life's problems; or

to adapt psychologically as measured by the Cardiac Adjustment Scale (Rumbaugh, 1964).

Limitations

The following limitations may have influenced the conclusions of this study:

1. Personalities and coping abilities may have differed with individual subjects.
2. The outcome reflected the participants' response only at that particular time.
3. The Hawthorne effect, or the tendency of people to react differently because they are being studied, may have altered the subjects' responses.
4. More than one nurse was involved in the teaching, and therefore, the information taught may have varied.

Summary

Previous studies have shown nurses' teaching interventions improve patients' knowledge of their disease. However, few studies substantiate nurses' teaching promotes patients' adjustment to their health state. Roy (1976) conceptualized the goal of nursing as assisting man in his adaptation to changes encountered during

alterations of his health status. Through nursing research it can be demonstrated that nursing activities can facilitate patients' adaptation to changing health states and illness. This study was conducted to determine if nurses' structured teaching interventions promoted cardiac patients' psychological adaptation to their illness.

CHAPTER 2

REVIEW OF LITERATURE

Chapter 2 consists of a review of literature related to this study. This chapter covers the concept of adaptation, psychological adaptation to illness, nursing care to assist client adaptation, and studies on patient teaching. First, the concept of adaptation will be presented in order to develop the broad context into which this study on the psychological adjustment of cardiac patients was applied.

Concept of Adaptation

Adaptation is man's adjustment to environmental changes and is affected by man's reaction to stimulation from the environment (Helson, 1964). Helson further conceptualized that man's response to the environment will be either positive or negative. A positive response to the changing environment would be the process of adaptation (Roy, 1976). A negative response would lead to maladaptation. An adaptive response is behavior that maintains the integrity of the individual, while a maladaptive response does not maintain integrity and is eventually destructive to the person (Roy, 1976).

Helson (1964) called the degree of response to the changing environment the focal stimulus. The adaptation level represents the condition of the person relative to adaptation (Helson, 1964). The adaptation level is determined by the combined effect of three classes of stimuli: (a) focal stimulus, a stimulus immediately confronting the person; (b) contextual stimuli, all other stimuli present; and (c) residual stimuli, stimuli such as beliefs, values, experiences, attitudes, or traits which have an immeasurable effect on the person's response (Helson, 1964).

The environment man lives in is everchanging. Toffler (1970) wrote of the accelerated pace of change that modern man faces. Not only the change, but the rate at which it occurs, threatens man's ability to adapt (Toffler, 1970). Man must interact within this changing environment in order to survive. Survival and health depend on the ability of man to maintain his internal environment, despite the endless and often extreme variations of the external environment (Dubos, 1965). Dubos expressed his convictions that constancy of man's internal environment is achieved through the body's performance of various physiological and biochemical processes.

Adaptive mechanisms are measured to the extent man can occupy and make effective use of resources available to him (Dubos, 1965). These adaptive mechanisms are biological, psychological, and social in origin (Roy, 1976). To cope with the changing environment, man has both innate and acquired mechanisms (Roy, 1976). Innate mechanisms are genetically determined and are common to the species; whereas, acquired mechanisms are gained through a process such as learning (Roy, 1970). Whatever the change in the environment, man has the mechanisms to cope with the changing world.

A person's survival depends upon the constant mediation between environmental demands and adaptive capabilities. Various adaptive mechanisms operate constantly, adjusting the body to a changing number of internal and external stressors. Stressors are always present and impinging on the human organism. The stress producing factors may be physiological, psychological, or social, yet they all produce essentially the same biological stress response (Selye, 1973).

Stress is a physical and emotional state always present in the person, intensified when environmental change or threat occurs internally or externally to

which he must respond (Byrne & Thompson, 1972). Selye (1956) has shown that it is immaterial whether a stress agent is pleasant or unpleasant, and that the stressor effect depends on the intensity of the demand made on the adaptive work of the body. Stress is, therefore, not something to be avoided. Stress cannot be avoided, since complete freedom from stress is death (Selye, 1973).

Selye (1956) defined stress as the nonspecific response of the body to the demands made on it. When a stressor confronts the body, there is an increased demand on the body to readjust itself. This demand is non-specific and requires the body's adaptation to the problem (Selye, 1973). All agents that a person encounters produce a non-specific increase in the need to perform adaptive functions and to re-establish normalcy (Selye, 1956).

Responses to stress may be categorized as either local or general. The Local Adaptation Syndrome is the method used to wall off and control effects of physical stressors locally (Murray & Zentner, 1975). This is the typical inflammatory response. When a stressor cannot be handled locally, the whole body responds to protect itself and insure survival through the General Adaptation Syndrome (Murray & Zentner, 1975).

The General Adaptation Syndrome was first defined by Selye. In 1956, Selye conducted a study in which he injected rats with a new hormone extracted from cattle ovaries. Selye detected adrenal enlargement, gastrointestinal ulcers, and thymicolymphatic shrinkage in the rats. It was discovered that hormonal injections acted as toxins to the living organism. From this experimental study, the stress concept evolved.

Stressful situations require systemic adaptation. The stress may be either physiological or psychosocial in nature (Selye, 1956). A number of studies correlate the effects of psychosocial stress on physiological responses of the body, primarily the sympathetic nervous system. Wyatt (1971) correlated depression and anxiety with increased levels of the sympathetic neurotransmitter norepinephrine. Frankenhauser (1971) noted increased catecholamines excreted in the urine with "attention-demanding" activity. An increase in blood catecholamine levels was found in subjects performing vigilant tasks (Williams, 1975). These studies suggested psychologically stressful situations do cause physiological responses by the body.

A study by Cromwell, Butterfield, Brayfield, and Curry (1977) was conducted to examine the stress responses

among myocardial infarction patients. The researchers utilized plasma 17-hydrocorticosteroids as one of the dependent variables in the study. The subjects in the study included 36 acute myocardial infarction patients, 28 on-ward nonmyocardial infarction patients, and 20 off-ward nonmyocardial infarction patients. Blood samples were taken throughout the day on the subjects to determine 17-hydrocorticosteroid levels and circadian rhythms. The major finding was the delayed and exaggerated plasma 17-hydrocorticosteroid response to stress among the myocardial infarction patients. These findings suggested myocardial infarction patients deal with stress situations while it is occurring and later ruminate over the event, which elevates the steroid level. No difference in hormonal levels in the myocardial infarction patients and the nonmyocardial infarction patients could be attributed to circadian rhythms. The findings of this study supported the findings of Wyatt (1971), Frankenhauser (1971), and Williams (1975). Psychological stress can produce physiological responses by the body.

The general body response augments bodily functions that serve to protect the organism from psychological or

physiological injury, and suppress nonessential functions (Murray & Zentner, 1975). The General Adaptation Syndrome is characterized by alarm and resistance stages and, when body resistance is not maintained, an end stage of exhaustion is reached (Selye, 1956).

The alarm stage is an instantaneous, life-preserving, sympathetic nervous system response of short duration (Murray & Zentner, 1975). This stage is typified by a "fight or flight" reaction as epinephrine is released from the adrenal medulla (Selye, 1956). The person is thus prepared to act; he is more alert and able to adapt to the stressful situation.

The stage of resistance ensues if the person continues to encounter the noxious stress agent (Selye, 1973). This also may be known as the stage of adaptation. During this stage the body adapts through an adrenocortical response to the disruption caused by the stressor (Selye, 1956). Because of the adrenocortical response in the body to fight for preservation, there is an increase in strength and endurance, antibody production, hormonal secretion, blood sugar levels, and blood volume. As the body adapts, the bodily responses will return to normal (Selye, 1973).

Stress has an additive effect and continued exposure to the stress or stressors leads to the final stage, the stage of exhaustion (Selye, 1973). The stage of exhaustion occurs when the person is unable to continue adaptation to internal and external environmental demands (Selye, 1973). The body's adaptation ability is finite, and physical or psychic disease or death can result because the body can no longer compensate for the disequilibrium which exists. Manifestations of this stage are similar to the alarm stage except that all reactions first intensify and then diminish without returning to a level of effective functioning (Selye, 1973).

In summary, when man is faced with a stressful situation, he can respond by systemic adaptation. This response may be neurological, immunological, and/or hormonal. Adaptation assists man to function within a normal range to promote survival. Adaptation enables a living organism to respond to changes in the environment in a manner to prevent injury or disease or repair bodily damage.

Psychological Adaptation

Next, the psychological aspect of adaptation will be considered. Toffler (1970) has proposed that an

individual is able to adapt with change as long as the psychosocial and environmental factors in his situation are in balance. When there is an imbalance, a person may experience a threat to his integrity. Illness may be perceived by the individual as such a threat.

Myocardial infarction and associated experiences precipitate changes for the person. These changes cause an imbalance of psychosocial and environmental factors (Gentry & Williams, 1975). The victim of the myocardial infarction experiences physical pain and a threat to life (Gentry & Williams, 1975). The myocardial infarction acts as a physical and psychological stressor, necessitating psychological and physiological adaptation.

When a person experiences a myocardial infarction, perceptions of the event enter his conscious awareness (Gentry & Williams, 1975). A mental barrier is erected to ward off concomitant painful feelings associated with the reality of the situation. He may block perceptions and allow others to permeate barriers and stimulate reactions. These reactions produce behaviors or defense mechanisms by which the individual functions in the stressful situation (Gentry & Williams, 1975). Individuals cope with myocardial infarction in much the same way as they

have coped with other changes in their lives (McKegney, 1969).

Several studies have been conducted on the defense mechanisms utilized by myocardial infarction patients. Based on studies performed in coronary care units, most patients utilized denial, suppression, repression, and disbelief to "ward off" the painful reality of the myocardial infarction (Gentry & Williams, 1975). Hackett, Cassem, and Wishnie (1968) and Gentry and Haney (1973) found that the majority of patients in coronary care units deny the severity of the illness or deny having feelings of being threatened by the situation they are experiencing.

In contrast, Pranulis (1969) found most patients in her study to be vulnerable and they admitted their fears and concerns. Ten men and 10 women with a diagnosis of acute or suspected myocardial infarction were observed by nurse-researchers for verbal and nonverbal behaviors. The findings revealed none of the patients in the study consistently utilized denial, but utilized various defense mechanisms. Pranulis concluded from this study that the interpersonal relationships the nurse-researchers established with the patients enhanced

self-disclosure and reduced the patient's need for denial.

In addition to denial, anxiety and depression are commonly found in patients experiencing acute myocardial infarctions. Bellak and Haselkorn (1956) studied the psychological aspects of cardiac illness and rehabilitation. These authors found in their study that patients initially responded with diffuse anxiety when diagnosed with a myocardial infarction. The patient became narcissistic and regressed to an earlier level of development (Bellak & Haselkorn, 1956). Carroll (1968) found in his work with cardiac patients that depression, anxiety, and fear were almost universally present. Carroll (1968) concluded that these emotional responses were only abnormal if they persisted for a long period of time. Hackett et al. (1968) in their study found that during the acute phase of cardiac illness most patients demonstrated anxiety and fear of death.

Not only does anxiety and depression occur in the initial phase of a myocardial infarction, studies have shown patients demonstrated these behavioral responses which extended into the postcoronary period. Several researchers have concluded the prolonged adverse

emotional responses to a myocardial infarction could have been eliminated had the patient received adequate information regarding the condition. Nagle, Gangola, and Picton-Robinson (1971) found in their study of post-coronary patients that anxiety and depression were present in 55% of the patients at home. In 52% of these patients not working, there was no clinical evidence of residual heart damage, only psychological maladjustment. Nagle et al. (1971) concluded that adverse emotional reactions were not dependent on the severity of the heart attack, but related to inadequate instructions to prepare the patients for discharge.

Crawshaw (1974) found by personally interviewing myocardial infarction patients that the most common emotional problem was fear. A period of depression generally develops following the initial anxiety. Crawshaw stated the resulting anxiety and depression in postcoronary patients could be reduced by adequate information and handling of fears and social problems early in the illness.

In a study of the needs of myocardial infarction patients, Mullen (1973) interviewed and observed 35 subjects during hospitalization and after dismissal from

the Kaiser Foundation Hospital in Oakland, California. Information was obtained to determine the patients' adjustment to the myocardial infarction and their learning needs. The findings of the study suggested an educational program to reduce anxiety should begin early in hospitalization. The study also indicated the need for educational programs to respect the patients' readiness to deal with the myocardial infarction and the changes the illness would create in their lifestyle.

Several studies have shown that anxiety, depression, and denial of postmyocardial infarction patients can be alleviated by providing the patient with adequate information about his illness. Studies also indicated that the timing of information given to these patients is also a critical factor. Redman (1972) stated that properly timed teaching can facilitate a patient's adaptation to his health state.

Convalescence has been described as involving three tasks--life reassessment, dealing with the threat to self-concept, and dealing with dependency (Redman, 1976). A study by Nite and Willis (1964) gave credibility to this statement. In their study of myocardial infarction

patients, the first 2 weeks after the attack patients expressed resentment and hostility over the restriction of activity. The behaviors are consistent with the stage of disbelief (Redman, 1976). In the 3rd and 4th weeks of hospitalization, patients began to show interest in their surroundings and in increasing their activity (Nite & Willis, 1964). This is the stage of developing awareness and is noted by the patients beginning to ask questions about their illness and care (Redman, 1976). During the 5th and 6th weeks after the infarction, the patients' activity is increased and the questions they ask are more specific and futuristic (Nite & Willis, 1964). The stages of adaptation to a myocardial infarction seem to have a characteristic length and behavior pattern, as exemplified in the study by Nite and Willis (1964).

In contrast to this, Gentry and Williams (1975) stated that no agreement has been reached on the specific stages of recovery from a heart attack. Cassem and Hackett (1973) found in their study that most patients with myocardial infarctions experience anxiety and depression while in the coronary care unit. They also found some myocardial infarction patients do not want

to hear about their illness even beyond the early phase. Patients were found to often exhibit accentuated fear when discharged from coronary care units to the general wards (Melia, 1977).

Even though there is some conflicting information as to when myocardial infarction patients are ready for information about their condition, most studies show the acute stage of illness is not the most beneficial time for patient education. A study by Hackett et al. (1968) indicated that during the acute phase of illness most patients deny their heart disease. Graham (1969) studied 15 myocardial infarction patients in the coronary care unit and immediately after transfer. It was found that information given patients who had not yet acknowledged their illness was irrelevant and retention was minimal. The primary interest was the attainment of a sense of security. Graham (1969) concluded the reasons for this were emotional shock, denial of the seriousness of the illness, and/or decreased comprehension due to sedation.

Haferkorn (1971) found in her work that myocardial infarction patients are overwhelmed by the threat to life in the acute stages of illness. Haferkorn stated

that this threat leads to a sense of powerlessness or the inability for the patient to control events surrounding him. Loss of control interferes with a patient's ability to learn about his illness (Haferkorn, 1971). The patient can only experience a sense of powerfulness as he restores certain environmental controls and acquires new knowledge (Roberts, 1976).

The initial stages of a myocardial infarction are threatening to most patients. Studies have shown that patients are not receptive to instructions regarding their illness during this period. However, a study of 36 hospitalized cardiac patients by Owens, McCann, and Hutelmeyer (1978) demonstrated that patients are capable of learning during the early phases of recovery. These authors cited discussions with patients concerning their myocardial infarctions or cardiac surgery. It was concluded from these discussions that patient education should begin within 6 to 10 days after the event (Owens et al., 1978). This contradicts most of the reported studies dealing with when patient education should begin.

Studies have shown information may be withheld from patients because they do not ask directly or appear concerned. Lineham (1966) and Alt (1966) conducted

studies on hospitalized patients to determine what they wanted to know. These researchers found patients wanted more explanation about what was done and why, more explanation from nurses regarding procedures, and more discharge information. Patients were found generally to want to learn even though they may not ask questions or seek information (Aiken, 1970). Gowan and Morris (1964) interviewed 52 postoperative patients to determine their learning needs. The results revealed a high number of unstated questions and requests for information from the nurse. Pratt, Seligmann, and Reader (1957) confirmed in their study that patients want information, but may not ask for it. Patients who received some explanation, tended to ask more questions than those who did not (Pratt et al., 1957). Patients may need help in identifying and expressing needs, many of which might be relieved by teaching (Redman, 1976).

Patient Teaching

Whether information is requested by the patient or not, health education is felt by many nurse-authors to be an important nursing function. Patient teaching is a nursing intervention and, like all other nursing interventions, is planned, implemented, and evaluated based

on the nursing process (Narrow, 1979). Roy (1976) stated that the nurse must identify problems of client adaptation and intervene appropriately by utilizing the nursing process.

The goal of nursing, according to Roy's Adaptation Model of Nursing (Roy, 1976), is to promote man's adaptation in situations of health and illness. The nursing goal would be to solve the adaptation problem and bring about positive adaptation. Nursing may be viewed as an interactional process for helping people adapt to and learn more about their reactions to their health problems (Burd, 1971). The purpose of this interpretation is to decrease the patient's dependence and to increase his independence in coping with his problems. Thus, emphasis for the nurse is on teaching the patient to anticipate his future health needs (Burd, 1971).

The adaptation concept for nursing considers man's relationship to the external environment, the world upon which man is dependent (Bergerson, 1971). A dynamic equilibrium must be maintained between man and his environment; and since both change constantly, adaptation becomes a lifelong process (Bergerson, 1971). The Adaptation Model of Nursing encompasses the various

factors affecting man as he exists in the environment as a multidimensional whole (Murray & Zentner, 1975). Analysis of the relationship of man and his environment requires consideration be given to the needs of man, to the resources within or available to man, and to the needs and resources within the environment itself (Bergerson, 1971). The nurse utilizing the adaptation concept of nursing practice should more effectively assist the patient to adapt to his crisis, illness, or disability (Murray & Zentner, 1975). Beland and Passos (1975) outlined the nurses' responsibilities: (a) to assess the capabilities of the individual, (b) to modify the stressors in the environment, and (c) to assist the patient to use his adaptive capabilities to his benefit. Teaching provides one of the major ways to help patients adapt (Murray & Zentner, 1975).

To determine the effectiveness of nurses' influence on patients' adaptation, the results of patient education must be examined. Studies have been conducted to determine the effectiveness of nurses' teaching interventions on patients' knowledge of their health state and treatment regimens. However, relatively few studies have been done to specifically determine patients' adaptation to their health state following nurses' teaching.

Nurses' instructions of patients have been shown to have a positive influence on patients' health states. Lindeman and Van Aerman (1971) showed that structured preoperative teaching improved patients' ability to deep breathe and cough postoperatively. Those surgical patients who received structured teaching had shorter hospital stays than those patients who received unstructured teaching (Lindeman & Van Aerman, 1971).

Several investigators have specifically studied the effectiveness of postmyocardial infarction patient teaching. Hahn and Dolan (1970) conducted a study of 15 randomly sampled myocardial infarction patients who had received teaching regarding diet, drugs, therapy, environment, and adjustment to illness. On the basis of this study, the researchers concluded the nurses' teaching improved the patients' understanding of treatments. Patients and their families could apply the instructions to their customary activities following the teaching program (Hahn & Dolan, 1970).

Woodwark (1972) found similar results in his investigation. A study was conducted to determine whether increased knowledge of cardiac patients would increase compliance with the medical regimen and produce a more

favorable rehabilitation outcome. In this study, Woodward utilized two groups of patients: (a) the control group which had no special instructions or discharge planning, and (b) the study group which had special teaching for discharge from a nurse instructor. All the patients in the study group achieved higher knowledge and compliance scores than the control group. Postcoronary disability, when defined as impairment in role performance and complaints referable to the cardiac disease, was much lower in the group receiving special instructions from the nurse. From this study, Woodward (1972) concluded satisfactory rehabilitation following a myocardial infarction was related to the teaching received. This conclusion supports the belief that a patient with inadequate knowledge regarding his illness can suffer consequent physical and emotional disability during convalescence (Woodward, 1972).

A multidisciplinary patient education program was evaluated by Ulrich and Kelly (1972). Patients participating in the program were questioned about their learning following health education. It was found the patients were more prepared to manage their disease after receiving instructions. Continuity of teaching

and cooperation between staff was another finding in this multidisciplinary patient education program (Ulrich & Kelly, 1972). Wenger (1975) stated that the cardiac patient education program she evaluated did improve patient's understanding of the disease and of the prescribed regimen. The patient's motivation was found to be the most valuable part of the program (Wenger, 1975).

Fournet (1974) conducted a patient-teaching project on hospitalized cardiac patients being discharged while on diuretic therapy. The patients were divided into three groups and instructed on diuretics by a different method in each group: (a) Group A--those receiving usual instructions (if any), (b) Group B--those verbally instructed by the researcher, and (c) Group C--those verbally instructed by the researcher and given a booklet to read regarding the information. All of the patients were pretested and posttested by an interview. The results of the posttest showed an identical number of total correct responses in Group A in the pretest and the posttest; a twofold increase in correct responses in Group B; and a greater than twofold increase in responses in Group C. It was shown in this study that cardiac

patients have an increase in health-related knowledge following instructions. This knowledge is greater when instructions are both written and verbal (Fournet, 1974).

Rosenberg (1971) reported that a multidisciplinary team conducting group educational sessions with 50 congestive heart failure patients increased the patients' knowledge of their disease, medications and diet, and increased the patients' adherence to a prescribed regimen. Group instructional methods were found to be an efficient and effective means of providing health information in a study by Lindeman and Van Aerman (1971). In the study by Owens et al. (1978), it was found that peer support generated by the group interactions was found to ease adaptive processes and stimulate further learning.

These studies suggested patient teaching is an effective method to promote a client's understanding of his health state. Furthermore, some studies indicated teaching cardiac patients about coronary risk factors will reduce the factors associated with coronary disease.

Bean (1974) evaluated a patient education program by studying risk factors in 60 cardiac patients. Prior to patient teaching, the risk factors were assessed.

The patients were checked weekly for reduction in coronary risk factors. Although this study was not conclusive, modification of risk factors following patient teaching was speculated. Johnston, Cantwell, and Fletcher (1976) investigated the effects of the cardiac rehabilitation on 89 postmyocardial infarction patients. Risk factor modification data were collected 135 months after hospitalization. The investigated parameters included work, dietary and exercise habits, body weight, high blood pressure, and cigarette smoking. Fifty-six percent of the survival group was actively working, 66% was adhering to a fat-controlled diet, 77% was continuing an exercise regimen, 70% had lost excess body weight, 91% had their blood pressure controlled, and 60% had stopped smoking cigarettes. It was concluded from this study that postmyocardial infarction education and rehabilitation was beneficial in long-term risk factor modification.

Coronary risk factor modification has been found in cardiac patients receiving information about the disease. Several studies also showed the detrimental effects from inadequate cardiac patient education.

In recent years, the impact of "cardiac invalidism" has received much attention. Klein (1965) concluded that

features of invalidism began early in the convalescent experience of the myocardial infarction patient and might be manifested as anxiety, fear, or depression. Nagle et al. (1971) conducted a study of 30 unemployed postmyocardial infarction patients who had no physical reason for not working. Among this group, anxiety and depression were common. From the interviews with these patients, Nagle et al. discovered much of the anxiety and avoidable invalidism was due to the patients' own ignorance about the disease and the implications of their illness. Nagle et al. concluded that adverse emotional reactions were not dependent on the severity of the heart attack but related to inadequate medical instructions on how to prepare for the resumption of normal activities.

The problem of noncompliance with medical recommendations for life style adjustments is substantial (Marston, 1970). Davis and Eichhorn (1963) studied 400 farmers with heart disease. These researchers found over 30% of the group admitted some discrepancy between the medical recommendations and their behavior. The patients in the study adhered to the recommendations that involved the least amount of life style alteration.

Carroll (1968) stated that there are four major reasons why compliance with medical recommendations was not attained: (a) misunderstanding of the medical regimen, (b) complicated directions to follow, (c) misunderstanding by the family, and (d) inconsistent expectations between the health team and the patient. Gillum (1974) stressed the importance of patient knowledge and understanding of his disease and treatment as a prerequisite to patient compliance.

Abnormal psychological adjustment can occur from inadequate instruction of cardiac patients. Although most patient teaching has been found to be beneficial, often it is not. Linde and Janz (1979) conducted a study to measure patients' knowledge and compliance following a hospital-based patient education program. This study included 55 coronary bypass surgical patients. The knowledge scores in such areas as disease process, prevention, and adjustment to the illness indicated health care providers have not fulfilled their responsibilities of patient teaching. The researchers did feel that the program had some positive influence on patient knowledge and compliance. Similarly, Allendorf and Keegan (1975) interviewed 20 patients with angina

pectoris and on nitroglycerin therapy. The patients were not prepared well enough to assume responsibility for their own care and prescriptions. Therefore, teaching should be an integral part of nursing intervention to increase the patients' knowledge, facilitate adjustment to the illness, and reduce mortality from heart disease (Allendorf & Keegan, 1975).

Few studies have been done on cardiac patients' psychological adjustment to the disease entity as influenced by nurses' instructions. Hahn and Dolan (1970) conducted a 35-day study of 15 randomly selected myocardial infarction patients to evaluate the effectiveness of their patient teaching program. After discharge, the patients were sent questionnaires eliciting their comments regarding the benefits of the patient teaching program. On the basis of the study, it was concluded that the teaching program helped the myocardial infarction patients to determine their learning needs and how nurses could meet them. The patients were interviewed in coronary care units and on the general care units. The findings indicated patients and their families wanted relevant information regarding their heart disease and guidance in life style alteration (Royle, 1973).

Patients progressed more effectively through identifiable phases of adaptation with the information nurses provided in coronary care and general units.

In contradiction to most studies, Bille (1977b) did not find that nurses' instructions to patients facilitated the patients' cooperation with medical regimens. Bille studied 24 myocardial infarction patients to investigate the relationship between knowledge of disease and compliance with posthospitalization prescriptions. The researcher found that compliance was not significantly related to the patients' knowledge of his disease entity. The study suggested that a warm, understanding, interpersonal relationship between the health care team and the patient may be predictive of compliance with posthospitalization prescriptions (Bille, 1977b). Bille found that unstructured, individualized patient teaching was most effective as it meets the needs of individualized patients at the time they are identified.

Summary

In summary, the environment in which man lives is continually changing and man must adapt to these changes if he is to survive. Nursing plays a role in helping

man to adapt to situations of health or illness. Man must adapt to the psychological threat of illness, in addition to the physiological adaptation. It is the nurse's role to intervene in patients' illness states to promote positive adaptation. Teaching the patient with regard to his illness provides one of the major ways to help him adapt. In order for health teaching to be productive, the nurse must have an understanding of the patients' readiness to learn and evaluate the effectiveness of teaching. Studies have shown the time when the myocardial infarction patient is most receptive to health teaching as well as the effectiveness of that teaching. Additionally, studies have also shown various teaching methods which are effective in assisting cardiac patients to learn about their disease. Nurses play an important part in assisting the cardiac patient to adapt to his illness through proficient patient education.

CHAPTER 3

PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

This research study was a non-equivalent control group (posttest only) pre-experimental design to determine if a difference exists between cardiac patients' psychological adjustment who have and who have not received nurses' structured teaching interventions. Collection of data was obtained by administering the Cardiac Adjustment Scale to both groups of cardiac patients.

Pre-experimental designs lack one of the properties of the experimental design--randomization, manipulation of independent variable, or a control group component (Polit & Hungler, 1978). This study involved pre-selected, intact groups. Patient assignment to a randomized group was infeasible in the hospital settings selected for this study. Data were not obtained to determine the equivalency of the two groups prior to the two methods of nurses' teaching interventions. A true cause-and-effect conclusion is unable to be drawn with this type of design (Polit & Hungler, 1978).

Setting

This study was conducted in two hospital settings. One hospital utilizes an individualized planned teaching program for cardiac patients. Specific nurses are responsible for teaching the patients outlined information while in the coronary intensive care unit and after transfer to the medical floor. Patient teaching in the other hospital was not guided by a designated plan or completed by specific nurses.

The two hospitals are in two small Midwestern cities which are 40 miles apart. The hospitals have bed capacities of 165 and 140 respectively. The coronary intensive care units have 7 beds in 1 hospital and 6 beds in the other hospital.

Population and Sample

The population of this study included cardiac patients hospitalized in two small Midwestern cities within a time period from October 1979 to February 1980. The subjects who were asked to participate in the study were hospitalized where selected patient education formats were being utilized. All of the 60 subjects requested to participate in the study accepted.

The subjects met the predetermined criteria: (a) a medically stable cardiac patient who had no incapacitating complications of any organ system and no documented cardiovascular complications such as life-threatening arrhythmias, uncontrolled congestive heart failure, cardiogenic shock, or pulmonary or systemic emboli at the time of the study; (b) persons 21 years of age or older; and (c) persons who read, wrote, and communicated in English.

Any patient meeting the criteria for the study was asked to participate. The subjects were selected by purposive, nonprobability sampling. Subjects were chosen until the previously designated number for each group was obtained. The sample of this study was composed of 30 cardiac patients who had received nurses' planned teaching interventions and 30 cardiac patients who had not.

Protection of Human Subjects

Prior to the collection of data, the researcher obtained permission for the study from the Human Research Committee of the Texas Woman's University (Appendix B). Permission was also obtained from the administration of the two hospitals utilized in the study (Appendix C).

A consent form (Appendix D) and a written and verbal explanation (Appendix D) of the purpose and procedure for participation in the study were given to each prospective subject. Subjects were assured of anonymity in data collection and report of the study by the absence of identification of the questionnaire. The subjects were informed that their participation or nonparticipation in the study would not affect the nursing care or treatment received during hospitalization.

Instruments

Two instruments were utilized to collect data in this study. The Cardiac Adjustment Scale (Rumbaugh, 1964) (Appendix E) was utilized to determine the cardiac patients' psychological adjustment to their health state. The demographic data sheet (Appendix F) was utilized to describe the sample.

The Cardiac Adjustment Scale (Rumbaugh, 1964) is a closed-end questionnaire with yes-no or uncertain alternatives. This questionnaire was chosen for data collection in this study because it is relatively inexpensive, offers anonymity, reduces biases, and obtains data required for this study (Rumbaugh, 1964).

A variety of health professionals recognized the importance of psychological adjustment in cardiac patients and the need for a standardized diagnostic instrument (Rumbaugh, 1964). Rumbaugh developed the Cardiac Adjustment Scale in order to gain a better understanding of cardiac patients' adjustment to their heart disease. The scale has 160 items to be answered by the subjects. From the subjects' responses, favorable or unfavorable psychological adjustment of cardiac patients can be predicted (Rumbaugh, 1964).

The subjects' scores on the Cardiac Adjustment Scale are to be grouped based on the percentile ranking of the raw score groups. Rumbaugh (1964) recommended the scores be divided into three groups to rank the subjects' psychological adjustment. These are: (a) scores of 131 and above, highest psychological adjustment; (b) scores of 111 through 130, middle psychological adjustment; and (c) scores of 110 and below, lowest psychological adjustment.

The Cardiac Adjustment Scale was shown to be highly reliable by the Spearman-Brown formula. The reliability coefficient was .94 based on the initial 79 cases (Rumbaugh, 1964). Validity of the Cardiac Adjustment

Scale for predicting cardiac patients' psychological adjustment was established in a 3-year follow-up study. Cardiac psychological adjustment was evaluated in 85 cardiac cases with a .37 biserial correlation significant at the .01 level (Rumbaugh, 1964).

The subjects participating in the study were asked to complete a demographic sheet which was attached to the instrument. The variables of sex, age, and race were ascertained to describe the sample.

Data Collection

The cardiac patients selected to participate in the study received nurses' instructions by the two different methods utilized in the hospitals. One hospital used unstructured teaching interventions for cardiac patients. This teaching was done by staff nurses assigned to care for individual patients. The other hospital utilized structured teaching interventions done by several predesignated staff nurses specifically responsible for teaching cardiac patients. Both methods of teaching cardiac patients were completed prior to data collection.

Collection of data was done by the researcher who administered the questionnaire to the subjects in the

study. After determining that a particular patient qualified for the study, a verbal explanation of the purpose and procedure for participation was given by the researcher to the prospective subject. The subject was informed that 20 minutes were required to complete the questionnaire. All subjects were approached for participation in the study on the day of transfer from the coronary intensive care unit. The questionnaire was administered the day prior to hospital discharge. The subject was informed that he may withdraw from the study at any time. Data collection extended over a period from October 1979 to February 1980.

After signing the consent form, the subjects completed the demographic data sheet which was attached to the questionnaire. Then each participant was asked to complete the questionnaire. The subjects were instructed that the "I don't know" alternative should not be marked more than absolutely necessary. The researcher left the room and allowed the subject a minimum of 20 minutes to complete the questionnaire. Questions the subject had regarding participation in the study were answered by the researcher. The fact that there were no "right" or "wrong" answers was reinforced.

Treatment of Data

After the completed questionnaires were received, the responses were evaluated utilizing the Cardiac Adjustment Scale scoring stencil (Rumbaugh, 1964). Interval data were obtained for analysis. The scores provided a percentile ranking of the subjects' psychological adjustment to their disease. The Cardiac Adjustment Scale raw scores for each subject were divided into the three score groups based on the percentile ranking.

The statistical method utilized in this study was the two-way analysis of variance for determining the difference between means of two sample groups. This test is commonly employed when interval data are to be analyzed (Kviz & Knafl, 1980). For the two-way analysis of variance to be utilized, homogeneous variance for the two sample groups must be shown (Minium, 1970). The F distribution test was used in this study to determine if the variance between the two sample groups being compared exceeded the amount of variation within the group. This statistical method was done by converting the raw data to a standardized score and testing the F distribution to interpret results (Kviz & Knafl, 1980).

The level of significance for all computations in this study was at the .05 level.

The hypothesis for this study was tested by utilizing the two-way analysis of variance on the ranked score groups on the Cardiac Adjustment Scale relative to whether the subjects had received structured or unstructured teaching interventions. Additional findings were tested by utilizing the two-way analysis of variance for the subjects who had received nurses' structured and unstructured teaching relative to age level and sex of the subject.

CHAPTER 4

ANALYSIS OF DATA

A non-equivalent control group (posttest) only pre-experimental study was conducted for the purpose of determining if a significant difference exists between cardiac patients' psychological adjustment who have and who have not had nurses' structured teaching interventions. The Cardiac Adjustment Scale was utilized to collect data. Chapter 4 presents the quantitative description of the sample and the results of the study.

Description of the Sample

The sample was composed of 30 cardiac patients who had received nurses' structured teaching interventions and 30 cardiac patients who had not. The demographic variables of age, sex, and race of the cardiac patients were ascertained to describe the sample. All of the subjects were Caucasian.

Of the subjects taught, 22 or 74% were male and 8 or 28% were female. Of the subjects who did not receive structured teaching, 23 or 76% were male and 7 or 23% were female. Seventy-five percent of the subjects

participating in the study were male and 25% were female. Table 1 depicts the sex distribution of the sample.

Table 1

Sex Distribution of the Subjects Who had
and Who Had Not Received Structured
Teaching Intervention

Subject Group	Male	Female
Subjects taught ($\underline{n} = 30$)	22 (74%)	8 (28%)
Subjects not taught ($\underline{n} = 30$)	<u>23</u> (76%)	<u>7</u> (23%)
Total	45 (75%)	15 (25%)

The ages of the subjects were divided into three groups to quantitatively tabulate the data. The subjects' age groups were: 70 years and above, 60-69 years, and 50 years and below.

Of the subjects who received structured teaching, 9 or 30% were 70 years of age or above; 12 or 40% were 60-69 years of age; and 9 or 30% were 59 years of age or below. Of the subjects who did not receive nurses' structured teaching interventions, 14 or 48% were 70 years of age and above; 8 or 26% were 60-69 years of age; and 8 or 26% were 59 years of age or below. In the 70 years and above age group, the subjects not

receiving structured teaching interventions exceeded the subjects receiving structured teaching in the same age group by 18%. In the 60-69 years of age group, the subjects receiving structured teaching exceeded the subjects not receiving structured teaching by 14%. The age groups of the subjects are summarized in Table 2.

Findings

The subjects receiving the structured teaching interventions and those who did not were divided into two groups of 30 each. The subjects' scores on the Cardiac Adjustment Scale were grouped based on the percentile ranking of the raw scores. The scores were divided into three groups to rank the subjects' psychological adjustment. These were: (a) scores of 131 and above, highest psychological adjustment; (b) scores of 111 through 130, moderate psychological adjustment; and (c) scores of 110 and below, lowest psychological adjustment.

Of the subjects who received structured teaching, 4 or 13% were highly adjusted; 18 or 60% were moderately adjusted; and 8 or 27% had low psychological adjustment. Of the subjects who did not receive structured teaching, 4 or 13% were highly adjusted; 14 or 47% were moderately

Table 2

Age Groups of the Subjects Who Had and Who Had
Not Received Structured Teaching
Intervention

Subject Group	70 and above	60-69	59 and below
Subjects taught ($\underline{n} = 30$)	9 (30%)	12 (40%)	9 (30%)
Subjects not taught ($\underline{n} = 30$)	<u>14</u> (48%)	<u>8</u> (26%)	<u>8</u> (26%)
Total	23 (38%)	20 (34%)	17 (28%)

adjusted; and 12 or 40% had low psychological adjustment based on the Cardiac Adjustment Scale scores. Table 3 shows the number and percentage of subjects in the sample groups with scores in each of the three Cardiac Adjustment Scale ranked score groups.

The hypothesis of this study, there is no significant difference in the psychological adjustment of cardiac patients who have and who have not received nurses structured teaching interventions, was tested using the two-way analysis of variance. Table 4 illustrates the outcome of the two-way analysis of variance for the Cardiac Adjustment Scale Scores for subjects who received nurses' structured teaching and those who did not.

The results of the two-way analysis of variance was $F = .002 (1, 54)$, $p > .05$; thus the null hypothesis was accepted. There was no significant difference shown in the psychological adjustment of cardiac patients who had and who had not received nurses' structured teaching interventions.

The interaction between the rows was significant at 97.39, $p < .05$. This is due to the grouping of the scores on the Cardiac Adjustment Scale.

Table 3

Cardiac Adjustment Ranking of the Subjects
Who Had and Had Not Received Structured
Teaching Interventions

Score Group	High Adjustment 131 & above	Moderate Adjustment 111-130	Low Adjustment 110 & below
Subjects receiving structured teaching (<u>n</u> = 30)	4 (13%)	18 (60%)	8 (27%)
Subjects not receiving structured teaching (<u>n</u> = 30)	<u>4</u> (13%)	<u>14</u> (47%)	<u>12</u> (40%)
Total	8 (13%)	32 (54%)	20 (33%)

Table 4

Two-Way Analysis of Variance of Cardiac Adjustment Scale
 Scores of Subjects Who Had and Had Not Received
 Structured Teaching Interventions

Source	Degrees of Freedom	Sum of Squares	Variance Estimate	Value of F	Value of p
Columns (structured and unstructured teaching)	1	6.58	6.58	.002	$p < .05$
Rows (3 levels of psycho- logical adjustment)	2	12414.01	6207.005	97.39	$p < .05$
Interaction	2	368.93	184.465	3.11	$p > .05$
Within cells	54	3200.0	59.259		
Total	59				

Additional Findings

The data were further analyzed using the age and sex variables of the two sample groups' score on the Cardiac Adjustment Scale. Table 5 and Table 6 illustrate the statistical evaluations of the data.

Table 5 depicts the statistical outcome of the Cardiac Adjustment Scale scores on cardiac patients who had received nurses' structured teaching interventions and who had not relative to their age. The data in Table 5 shows the calculated value of $F = .783 (1, 54)$, $p > .05$. This would indicate there is no significant difference between the subjects who had and who had not received nurses' structured teaching interventions relative to their age.

Table 6 summarizes the analysis of the Cardiac Adjustment Scale scores on the subjects who had and who had not received nurses' structured teaching interventions relative to their sex. The data in Table 6 shows the calculated value of $F = .39 (1, 56)$, $p > .05$. This indicates there is no significant difference between the subjects' psychological adjustment who had and who had not received nurses' structured teaching interventions relative to their sex.

Table 5

Two-Way Analysis of Variance of Cardiac Adjustment Scale
 Scores of Subjects Who Had and Who Had Not Received
 Structured Teaching Interventions
 Relative to Age

Source	Degrees of Freedom	Sum of Squares	Variance Estimate	Value of F	Value of p
Columns (structured and un- structured teaching)	1	223.53	223.52	.783	$p > .05$
Rows (age groups)	2	.78	.39	.001	$p > .05$
Interaction	2	283.21	141.605	.49	$p > .05$
Within cells	54	15698.97	290.721		
Total	59				

Table 6

Two-Way Analysis of Variance of Cardiac Adjustment Scale
 Scores of Subjects Who Had and Had Not Received
 Structured Teaching Interventions
 Relative to Sex

Source	Degrees of Freedom	Sum of Squares	Variance Estimate	Value of F	Value of p
Columns (structured and unstructured teaching)	1	114.31	114.31	.39	$p > .05$
Rows (sex)	1	697.23	697.23	2.38	$p > .05$
Interaction	1	118.79	118.79	.40	$p > .05$
Within cells	<u>56</u>	16553.2	295.59		
Total	59				

Summary of Findings

In this study it was determined that no significant difference existed in the psychological adjustment of cardiac patients who had and who had not received nurses' structured teaching interventions. The demographic variables of age and sex of subjects were also analyzed, demonstrating no significant difference existed between those cardiac patients who had received nurses' structured teaching interventions and those who had not relative to age or sex.

CHAPTER 5

SUMMARY OF THE STUDY

The problem of this study was to determine if a difference exists in the psychological adjustment of cardiac patients who had and who had not received nurses' structured teaching interventions. This chapter will present a summary of the study, discussion of the findings, conclusions and implications of the study, and recommendations for further study.

Summary

This research study was a non-equivalent control group (posttest only) pre-experimental study to determine if a significant difference existed between cardiac patients who had and who had not received nurses' structured teaching interventions. The conceptual framework for this study was the Roy Adaptation Model of Nursing (Roy, 1976). The goal of nursing as described by Roy (1976) is to assist man's adaptation to changes he will encounter in alterations of health status. Data were collected by administering the Cardiac Adjustment Scale to both groups of cardiac patients. The Cardiac

Adjustment Scale (Rumbaugh, 1964) is a closed-end questionnaire with yes-no alternatives. Rumbaugh (1964) developed the questionnaire for a standardized diagnostic instrument to assist health professionals to gain a better understanding of cardiac patients' adjustment to their heart disease. From the subjects' responses on the questionnaire, favorable or unfavorable psychological adjustment of cardiac patients can be predicted. Rumbaugh showed the Cardiac Adjustment Scale to be both valid and reliable following a 3-year study of cardiac patients.

Two hospital settings were utilized for the collection of data in this study. One hospital utilized an individualized structured teaching program for cardiac patients with the teaching being done by specific nurses. Patient teaching in the other hospital was not guided by a designated plan or completed by specific nurses.

Thirty medically stable cardiac patients who had received nurses' structured teaching interventions and 30 who had not participated in the study. The subjects signed a written consent form indicating willingness to participate in the study. Anonymity in data collection and report of study were assured to the subject by the

absence of identification on the questionnaire. The subjects were asked to complete the questionnaire 1 day prior to hospital discharge. The data collection period extended from October 1979 to February 1980.

The Cardiac Adjustment Scale scoring stencil (Rumbaugh, 1964) was utilized to evaluate the subjects' responses on the questionnaire. The Cardiac Adjustment Scale raw scores were divided into three groups based on the percentile ranking. The higher the percentile ranking, the more optimally adjusted the cardiac patient.

The statistical method utilized in this study was the two-way analysis of variance of the subjects who had received nurses' structured teaching interventions and those who had not. The data were also analyzed based on age and sex relative to the subjects' scores on the Cardiac Adjustment Scale. The F distribution test was utilized to determine if variance between the two sample groups of cardiac patients being compared exceeded the amount of variation within each group.

The psychological adjustment of the group of cardiac patients who had been taught by nurses' structured interventions and those who had not did not significantly differ from each other, where $F = .002 (1, 54)$, $p > .05$. The null hypothesis was accepted.

Discussion of Findings

The findings in this study showed there was no significant difference in the psychological adjustment of cardiac patients who had received nurses' structured teaching interventions and who had not. The results may be related to several factors affecting the outcome of the study.

Myocardial infarction patients progress through stages of adaptation to their illness (Nite & Wallis, 1964). In the first few weeks after the attack, patients manifest emotional shock, denial, and hostility. During this period patients retain very little health teaching given them by nurses (Graham, 1969). Five or 6 weeks after the infarction, patients are more receptive to teaching, ask more specific questions regarding their illness, and can make futuristic plans (Nite & Willis, 1964).

The cardiac patients participating in this study were given the Cardiac Adjustment Scale to predict their psychological adjustment to the illness 1 day prior to hospital discharge. This generally was on the 10th through the 14th day following the infarction. Interactions between the nurse and patient involving

either structured or unstructured teaching interventions would have taken place prior to this time. The patients' receptivity to nurses' teaching interventions may have been influenced by emotional shock and denial during this period. Inadequate time to progress through the stages of adaptation to their illness may have influenced the measurement of the cardiac patients' psychological adjustment in this study.

Some nursing experts in patient education consider unstructured teaching to be more beneficial than structured teaching. Palm (1971) stated informal patient teaching is the most effective and important teaching. Informal teaching opportunities are more apt to meet patient needs evidenced by the patients' questions, verbal expressions, and behavior (Palm, 1971). Patients' learning needs cannot be anticipated or planned prior to personalized nurse-patient interaction (Pohl, 1968). Nurses' informal teaching provides the opportunity to answer patients' questions and assist in meeting individualized learning needs.

The patients in this study who participated in the structured teaching program all received similar instructional information. The schedule of the teaching plan

did not allow for much variance in the format. Perhaps the structured information the nurses presented did not meet individualized learning needs nor improve adaptation to their illness. The psychological adaptation of the cardiac patients engaging in the structured teaching program may not have been substantially influenced by the nurses' interventions.

The cardiac patients in this study did not demonstrate a significant difference in psychological adjustment to their illness based on whether they received nurses' structured teaching interventions or not. This may have been related to the fact that cardiac patients may still be in a state of emotional shock or denial at the time nurses are giving instruction. Another factor that may have minimized the difference in the psychological adjustment of the two groups studied is the nurses' ability, whether structured or unstructured, to meet the patients' health learning needs comparably. Perhaps nurses do perceive patients' needs and answer questions accordingly in both teaching formats.

Conclusions and Implications

It can be concluded from the findings of this study that the psychological adjustment of cardiac patients was

not significantly different for those who had and had not received nurses' structured teaching interventions. No implications can be drawn from this study. Further research would be needed in order to draw implications for nursing practice.

Recommendations for Further Study

Based on the findings of the study, the following recommendations are made:

1. This research study be repeated, preferably in a metropolitan area, utilizing a randomly selected, larger population sample.
2. A longitudinal study be conducted to determine if a long-range significant difference exists in the psychological adjustment of cardiac patients who have and who have not had nurses' structured teaching interventions.
3. Studies be conducted to determine if a significant difference exists in cardiac patients' psychological adjustment before and after nurses' structured teaching interventions by utilizing a pretest and a posttest design.

4. Studies be conducted at different time intervals post-myocardial infarction to ascertain the effect on cardiac patients' psychological adjustment.

5. More investigation be made regarding the level of psychological adjustment following various methods of nurses' patient teaching interventions.

APPENDIX A

Patient _____

Room _____

Nurse _____

PATIENT EDUCATION AND EVALUATION

M.D.

Check items you want patient taught or

All _____

	Instruction Completed	Family Member Instructed	Patient's Response
_____ A. Patient demonstrates understanding of admission procedure 1. Equipment 2. Diagnostic tests 3. CICU routines			
_____ B. Patient demonstrates knowledge of condition 1. Heart disease 2. Angina 3. Myocardial Infarction 4. Healing process			
_____ C. Patient identifies risk factors and modifications 1. Heredity 2. Diabetes 3. Smoking 4. High blood pressure			

		Instruction Completed	Family Member Instructed	Patient's Response
	5. Lack of proper exercise 6. Obesity 7. Stress 8. High fat diet			
_____	D. Patient demonstrates knowledge of psychosocial aspects 1. Normal reactions			
_____	E. Patient demonstrates knowledge of progressive activity 1. What to expect 2. Occupation 3. Exercise 4. Activities to avoid 5. Sexual activity 6. Spacing activities			
_____	F. Patient demonstrates knowledge of medications 1. Name, purpose, and possible side effects 2. How and when to take			
_____	G. Patient demonstrates knowledge of when to seek medical atten- tion 1. Symptoms 2. Importance of keeping doctor's appointment			

PATIENT EDUCATION OUTLINE

A. Patient Demonstrates Understanding of Admission Procedure.

1. Equipment

- a. Monitor: Patient should be told that electrodes are being applied to his chest so that his heart rhythm can be observed at the nurse's station at all times. Remind him he can turn to either side. Remind him to not be alarmed at sudden up and down motions on the screen, because it is very sensitive, it will pick up muscle tremors and change in position.
- b. IV: This is being started to provide an easy access to give medications if your heart should become irregular. It will be going very slowly, only to keep the vein open.
- c. Oxygen: This is being given to allow your heart to rest as much as possible. Be sure to inquire about any chronic lung disease.
- d. EKG: This will give the doctor a better picture of your heart and tell him if any damage has been done. The doctor usually orders three done on consecutive days. Placement should be marked with pencil to obtain the same lead placement each time.

2. Diagnostic tests

- a. Lab: The lab is done to collect blood studies to determine if your heart has been damaged. Certain enzymes are let loose in the blood stream if there has been damage to your heart muscle. The doctor usually orders three of these tests to be done on three consecutive days because the way they elevate and decrease in your blood stream is very diagnostic.

- b. X-ray: A chest x-ray is done to determine if there is any fluid in your lungs and to make sure it is clear.

3. CICU Routines

- a. Bedrest: You must remain in bed to give your heart as much rest as possible. Your activity will be increased according to what is found on the EKG and lab and how you feel.
- b. Call Light: Here is how you can call for help, use it whenever you have any pain or need anything. We will try to answer it as soon as possible.
- c. Vital Signs: We will take your blood pressure, pulse, respirations very often to see if they remain the same--it is a normal procedure.
- d. Diet: Clear liquids are usually ordered until we see if you are nauseated and it also gives your heart less work.
- e. Urinal and Bedpan: You must use these until there is an increase in activity ordered.
- f. Pain Med., Sedation: Emphasize telling the nurse about any pain and the importance of telling about it as soon as it starts. Also feeling free to ask for something to relax.
- g. Family Visitation: Your family will be allowed to visit at least 5 minutes every hour, two at a time. We will try to include them in your care as much as possible, also advise on lodging if needed.
- h. Observation-sensory Deprivation: We have nurses here 24 hours a day. Opening the curtains in the daytime helps, talking about the weather. If the patient can't sleep at night, keeping him awake in the daytime, spacing sedation.

- i. Gown--Lack of Privacy: Close the window curtains, close door, cover patient, etc.
- j. Admission Questions: Asked of everyone, stress, allergies, patient's own medicine.
- k. I & O: Means of seeing if heart is functioning well and getting rid of fluids.
- l. Religion: Offer services of minister or chaplain.

B. Patient Demonstrates Knowledge of Condition

1. Heart Disease

a. Related A & P

The heart is a hollow muscular organ that pumps blood through the body. An adult's heart is about the size of a man's clenched fist. It lies in the center of the chest, protected by the breastbone and the rib cage.

The heart is divided into four chambers; two upper and two lower ones. A thin solid wall of tissue separates the right side of the heart from the left side. Valves connect the upper and lower chambers. A valve is like a one-way door that allows blood to flow through it in only one direction.

The heart is connected to a closed system of pipes called veins and arteries. Veins take blood to the heart after the tissues and organs of the body have taken the necessary oxygen out of the blood to do their work. Arteries take blood from the heart to the tissues and organs after the lungs put oxygen back into the blood. 2 1/2 ounces of blood leave the heart every time it beats. The heart beats approximately 85,000 times a day.

The Coronary Arteries

On the outside of the heart itself there are two main arteries that give oxygen rich blood to the heart muscle. Since the heart rests only between beats, it needs a constant supply of blood, oxygen, and nourishment to do its work. These arteries of the heart are called the coronary arteries. The blood inside the heart does not nourish the heart muscle--this is the job of the coronary arteries.

b. Pathophysiology

What makes your heart beat? There is a "battery" to the heart that makes your heart beat, or push blood out of the heart to the rest of the body. It causes your pulse. This is called a "pacemaker" and sends electrical impulses through the heart muscle. In response, the heart muscle clamps down and squeezes the blood out of the body creating a heart beat. The pacemaker relaxes for a second allowing the heart muscle to also relax at which time the heart can refill with blood before the next beat. All this happens 85,000 times a day.

A heart attack can interfere with the work of the pacemaker. The pacemaker depends on a blood supply and oxygen. Oxygen is the "gas" that makes you go.

2. Angina

Angina pectoris is the heart muscle's complaint that it is not getting enough oxygen. This occurs when your heart is working a little harder than usual because of such things as excitement, exercise, walking fast, or eating a large meal.

Usually angina is caused by the narrowed openings in the coronary arteries which make it difficult for the blood to travel freely into the heart muscle. These complaints of poor circulation are passed along the spinal column to the brain but

may trigger any nerve they find along the path. You may have feelings of indigestion, fullness, squeezing, pressure, or tightness anywhere in the chest area. Also, you may have heaviness, numbness or tingly sensations or aches and pains in any or all portions of the arms. You may experience choking in the throat, pain in the jaw, teeth, or earlobe or pain in the neck or between the shoulder blades. The discomfort may start in one or more areas and spread to another area or may be in one small spot. It may be mild and go away with rest but is usually better relieved with medications such as nitroglycerin.

3. Myocardial Infarction

What is a Heart Attack?

In a heart attack there is damage or death or an area of the heart muscle. This results from a reduction in the blood supply reaching that area.

Heart attacks often occur during or following hard exercise but can also occur during rest or inactivity. Physical exercise alone doesn't cause a heart attack.

What causes a Heart Attack?

Although the heart attack happens suddenly, it is most often the result of a slowly developing process called "hardening of the arteries." The medical word for this process is atherosclerosis. This can be compared to the rusting of the inside of a pipe. As more lime deposits and debris collect, the pipe becomes very narrow and may become plugged. In hardening of the arteries, the inside of the arteries become roughened and narrowed by fatty deposits, making less room for the blood to flow through. Eventually, little or no blood may get through to an area of the heart.

Because the heart muscle requires a continuous supply of oxygen, that portion of the heart muscle without enough blood cannot do its work.

Sometimes a blood vessel is blocked by a blood clot rather than fatty particles. This cuts off the blood to that area of the heart. Therefore, either fatty particles or a blood clot can block the artery and cause a heart attack.

4. Healing Process

Even though a part of the heart muscle does die, it will heal itself with proper treatment. In the gradual healing process, white blood cells rush to the damaged area of the heart and start carrying away the dying tissue. At this time, your heart is very much like an innertube with a weakened area. Given time, usually 6 to 8 weeks, scar tissue begins to put a patch over the damaged area. Nearby coronary arteries start to "grow" into the weakened area. They get wider and open up tiny new branches that begin to deliver blood to the damaged area. These new branches provide oxygen and nutrition for healing and will continue to nourish the heart muscle.

--What you can do to help and how long it will take

Even after you begin to feel well, healing takes time (6-8 weeks). During this healing, you need both physical and emotional rest. At first, you will be assisted in all aspects of care. This may include feeding, bathing, shaving, and getting out of bed to use the commode. Gradually, your activity will progress from mostly bedrest to sitting in a chair and then to some walking. The time required will depend on your doctor's judgment, the extent of heart injury, the rate of healing, and whether or not complications develop.

5. Symptoms

The warning signs of a heart attack

The pain may be different types with different people. The usual warnings are:

- a heavy, squeezing intense pain in the center of the chest (that is not relieved by rest)
- the pain may spread into the shoulder, arm, neck, or jaw
- sweating
- nausea, vomiting, shortness of breath
- the pain is often spontaneous, not necessarily following effort or emotional upset

C. Patient Identifies Risk Factors and Modifications

About 27 million Americans have had a heart attack in the past. The American Heart Association has identified these "risk" factors as those living habits and characteristics of the body that may increase your chance of having a heart attack.

Hereditary	Obesity
Diabetes	Stress
Smoking	High Fat Diet
High Blood Pressure	Personality--type
Lack of Proper Exercise	Salt Intake

We cannot say that any one of these factors or that even all of these factors would definitely cause you to have a heart attack. Some people have heart attacks without having any of these risk factors. However, we do know that if you have a risk factor, your chance of having a heart attack is greater than someone without a risk factor. Therefore, in order to reduce your chance of having a heart attack, you should reduce the number of risk factors in your lifestyle.

Men have more heart attacks than women until middle age, then the ratio seems about even in both sexes. There seems to be hormone protection for women before they go through the "change of life" that is not fully understood. However, as the role of women in today's society expands, there seems to be an increase of heart disease. What you do with your life when

younger affects your chances of developing heart disease whether male or female.

1. Heredity

A tendency toward having heart disease can be inherited. The risk factor of heredity is most important to those who might have relatives who have developed heart disease during middle age. This appears to raise your chances of a heart attack slightly above average.

While you cannot pick your relatives, you can turn this into an advantage by heeding its warning. Probably at least 80% of family tendency for heart disease can be attributed to such learned habits as smoking, overeating, and how you deal with your life physically and emotionally.

2. Diabetes

Diabetes (excess sugar in the blood) is due to a failure of the body to produce enough insulin. When there is a lack of insulin in the blood, sugar and starch cannot be changed to energy. Thus, an excess of sugar builds up in the blood. Many problems result when the sugar in the blood is too high. There is an elevation in cholesterol and other fats in the blood which contributes to the development of atherosclerosis (fatty deposits).

3. Smoking

Smokers increase their chances of a heart attack 3-6 times as much as non-smokers. Studies have shown that persons who quit smoking are able to reduce those risks to almost those of a non-smoker.

Some of the damaging effects are:

- Smoking causes narrowing of the smaller blood vessels in the body. This raises the blood pressure and reduces the amount of blood flow to the tissues. The heart then has to pump

against more pressure and strain by trying to force blood through a smaller area.

- All of us have a substance in our body called heparin which helps to keep our blood flowing through our blood vessels instead of clotting. It is felt that for some reason smoking takes heparin out of circulation for a short period of time after each cigarette, and that there is an increase in the speed in which your blood clots. A smaller set of blood vessels combined with blood that has more of a tendency to clot can be very dangerous.
- Another effect is that carbon monoxide from inhaled smoking takes the place of oxygen in the blood. This makes less oxygen available to the heart and other body tissues.
- A fourth effect is that nicotine, a drug in cigarettes, is a stimulant. It causes a reaction of chemicals in the body that can change the speed of the heart beat and raise the blood pressure. Smoking may cause the heart to change its beating pattern into a dangerous rhythm in people who have had a heart attack.
- Another effect is that on the lungs. The lungs have some little hair-like projections over which a sheet of mucus glides. Therefore, if a particle of dust accidentally gets down into our lungs, these little hair-like projections, called cilia, start a wave-like motion in an attempt to propel the dust up into the throat. You are then stimulated to cough and clear away the dust. It has been shown that prolonged cigarette smoking paralyzes and eventually kills cilia. It takes away one of the body's natural defense mechanisms.

After smoking for many years, it may be difficult to stop. However, research proves that the incidence of death from heart disease is much decreased among those who stop smoking.

4. High Blood Pressure

Many Americans have high blood pressure (hypertension). Blood pressure is the pressure on the walls of the arteries as the heart pumps blood through them. This pressure varies from minute to minute. There are several causes of hypertension. It can be caused by various diseases, but the cause of the most common kind of hypertension is still unknown. Nevertheless, great progress has been made to keep it under control. Treatment may include: medication, stopping cigarette smoking, weight reduction, and decreased sodium (salt) intake. Untreated hypertension is a major health problem. When combined with conditions such as obesity, high cholesterol levels or diabetes, the risk of heart attack is increased several times.

5. Lack of Proper Exercise

Studies show that the inactive person has twice the risk of heart attack than one who is active. The heart provides itself with an extra blood supply, called collateral circulation, when people regularly exercise. This additional network of blood vessels helps protect the heart from further damage if a heart attack occurs. In addition, active people tend to have lower blood cholesterol since they use more of the fats eaten in their diet. Active people usually have fewer weight problems and good outlets for tension buildup.

You should consult your physician and with him or her help plan an exercise program that is best for you. Avoid being only a weekend exerciser. Don't over do it, but work up gradually and regularly as you are instructed.

6. Obesity

When a person is overweight, his heart has to work harder to supply the extra tissue with blood. (It has been stated that every pound of excess

fat contains something like 200 miles of blood vessels which blood is pushed through). If you are overweight, your doctor may suggest a reducing diet. The doctor will know what weight is best for your height, age, and body build.

7. Stress

Tension and stress are considered by some as the leading risk factor in coronary heart disease. Yet, tension and stress are always a part of one's life.

Your personality determines how you will react to stressful situations. If you are aggressive, ambitious, competitive, you are more likely to get heart disease in middle age than people who are easy going and seldom impatient. These are learned behaviors and as such can be unlearned.

What effect does stress have upon the heart?

- Makes your heart beat faster.
- Makes your blood pressure rise.
- Adrenalin starts pumping in an attempt to ready you for an emergency.
- Makes your blood cholesterol rise, at least temporarily.

All these can be strenuous for a heart weakened by a recent heart attack. Therefore, you need to learn to deal with stress and tension in a manner that is not so demanding of your emotions.

- Determine what the stressful situations are in your life--such as driving in traffic, arguments, business, etc. Being aware of them may help you handle it better.
- Get sufficient rest and keep in good health.
- Find activities and hobbies that you enjoy.
- Learn diversion by turning to less demanding tasks and slowing the pace temporarily.

Ways to ease your way through some of your emotions:

- Work out your family conflicts. Get help by the appropriate persons if you need.
- Exercise--physical activities may help you handle your stress.
- Learn to relax. Muscular work provides an outlet and helps you relax physically and mentally. Plan regular periods for relaxation each day.

8. High Fat Diet

In countries such as the United States where the main diet foods are meat and dairy products, eggs and organ foods (liver, kidney, brain), and high caloric foods, the incidence of atherosclerosis is very high. (Review: atherosclerosis is a buildup of fatty deposits in your blood vessels). To reduce this risk, we suggest these changes (but remember to consult your physician also about dietary needs).

- Reduce your intake of saturated fats and increase your intake of unsaturated fats. Saturated fats are the solid animal fats found in butter, whole milk, ice cream, many solid cooking fats, and chocolate. Polyunsaturated fats are largely the liquid vegetable oils such as corn, cottonseed, and soybean oils.

By using polyunsaturated fats, this helps to reduce the blood cholesterol level, which in turn slows the process of atherosclerosis. Some suggestions for doing this are:

- Use skim milk or nonfat dry milk instead of whole milk
- Increase your intake of poultry and fish in place of fatty meats

- When you do eat fatty meats, cut away the excess fat
- Instead of using butter or lard, use unsaturated margarines for cooking

9. Personality Type

Certain personality types are more inclined to suffer heart attacks and heart disease than others. This type of personality is called Type A personality. This individual does not have to be surrounded by stress, or have a lot of stress in his/her life. This person makes his own stress!

A Type A individual acts as though every event in life is an emergency. The body of the Type A individual is constantly producing a variety of chemical substances such as adrenalin for this instant energy. He or she doesn't know how to relax and is constantly calling this "emergency system" into action. Even though a little bit of adrenalin does not seem to harm your veins and arteries, a constant flow is similar to pouring lye down a drain. It eventually damages the inside wall, making it easier for cholesterol and hardening of the arteries to occur.

Are you a person that--

- (1) tries to finish sentences for others, or tries to hurry them on by
- (2) feels that watching a sunset or noticing a pretty flower is a waste of time
- (3) tries to do or think about two things at the same time, such as eat your breakfast and read the newspaper, or watch TV and do your bookkeeping simultaneously
- (4) tries to do more and more things in less and less time
- (5) feels guilty when you try to relax
- (6) speaks with a great deal of emphasis or adds expressions through the use of your hands?

If your answer is "yes" to any of these questions, it is highly likely that you are a Type A personality. Some tend to think that it takes this type of person in order to get things done . . . and that to be otherwise is the same as being unsuccessful . . . which is not true.

A Type B person is an individual who paces themselves according to their own needs--not influenced with the idea of "keeping up with the neighbors." They are realistic about their achievements and confident that they did the job to the best of their ability. They are not afraid of taking time to smell flowers or watch sunsets because they know that none of us are indispensable and living is for here and now.

Most presidents of insurance companies or of colleges tend to be more relaxed and confident Type B individuals.

Almost all of us are a combination of both types of personality. The trick is for us to train the Type B part of us to become the more dominant control of our life! This is a very difficult task, but worth the effort. If you were to die this minute, would you have regrets about your life?

- Would you have liked to have spent more time with your children?
- Did you ever spend the time telling and sharing how much your spouse meant to you.
- Did you ever get to do that painting or other hobby that you always wondered if you could do?

Your chance is now--the time is now--now will never come again.

10. Salt Intake

Your diet may need to be restricted in sodium (salt) because excess sodium can increase fluid

retention. When the heart does not pump well, fluid tends to collect in the lungs and other areas of the body such as the liver and legs. The fluid collection in the lungs can result in shortness of breath and make the heart work harder. Consult your physician about salt restriction and salt substitutes. However, you should keep your salt intake moderate.

D. Patient Demonstrates Knowledge of Psychosocial Aspects

1. Normal Reactions

After the heart attack the healing period seems to pass slowly because you are asked to cut down on your activities. Do not try to deny or be ashamed of the depression that many of you have gone through or have yet to go through. It is very normal and appropriate expression of the situation.

E. Patient Demonstrates Knowledge of Progressive Activity

1. What to Expect

While in the hospital, you will increase your activity as your physician orders. This activity progression or stages depends on such things as your EKG, lab tests, and how you feel. As you progress from stage to stage of activity, you will be told exactly what activity you can do for that day. The physical therapist and nurses will assist you with your activity progression.

After hospital discharge, you will continue to increase your activity as your doctor tells you to.

2. Occupation

Once the healing is complete, most persons can gradually resume their normal activities,

including their usual job. A small minority of patients may be asked by their physician to switch to work that is less physically demanding. Normal activities can usually be resumed in 6-8 weeks, however, consult your physician for specifics. The doctor will give you the final answer concerning your limitations and expectations because he understands your needs.

3. Exercise

Walk daily: Walk as much as you were walking in the hospital. You may walk outside in nice weather, but walk on level ground. It is a good idea to have a friend accompany you when walking the first few times. In winter, walk in the warmest part of the day, and avoid walking against the wind. In summer, walk in the coolest part of the day. You may walk in a large enclosed area, such as a mall. Walk after rest periods or when you are not tired from another activity. If you have chest pain or shortness of breath, stop and sit on the steps or curb. If you have some, take a nitroglycerin and wait until you feel o.k. to start walking again.

When you begin climbing stairs (usually before hospital discharge), climb them only once or twice a day. Take only a few steps at a time, and then rest for a minute or so. Don't run up a flight of stairs.

While you are in the hospital, your activity gradually increased. At home, you should get up and get dressed every day. Continue to increase your activities such as:

- Sew or do other handwork
- Peel potatoes
- Prepare food
- Talk with friends as long as they don't tire you

- Make shopping lists (have others fill)
- Read or watch T.V.
- Play cards, checkers, or other sitting games, as long as you don't get tense or excited.

4. Activities to Avoid

Situations, people, and topics of conversation which upset you or make you tense or angry.

Activities which tense your body: straining when having a bowel movement (ask your doctor about a laxative); lifting heavy objects--children, groceries, or suitcases or pushing or pulling anything heavy; trying to open a stuck window or unscrewing a jar lid.

Avoid being in very hot or very cold temperatures. Avoid extremely cold or hot showers. Avoid chilling--wear handkerchief, muffler, or scarf over mouth in cold weather. In hot weather, avoid exercising in the heat of the day as your heart has to work harder in hot weather.

Avoid over-use of alcoholic beverages. Excessive drinking definitely has a damaging effect upon the heart muscle.

5. Sexual Activity

Questions often arise concerning sexual activity after a heart attack. First of all, do not allow yourself to see sex as a problem. You and your partner should discuss your sexual relationship and the temporary limitations placed upon you now. Second, discuss with your physician any concerns you may have about sex; this can relieve your worries.

Ask your doctor how long you should wait before resuming sexual activities. Your age, sex, and general state of health help determine how long you should wait. The majority of physicians

believe that within 4-6 weeks, sexual intercourse may be resumed.

You should not have sexual relations if:

- You are tired . . . take a 30 minute nap first
- You have just eaten a heavy meal
- You have been drinking
- You are angry with your mate
- The room temperature is uncomfortably warm or cool

If you have nitroglycerin tablets, you may take these prior to sexual activity to prevent chest pain. Check with your physician to see if it is o.k.

The more relaxed you are before and during sexual intercourse, the less strain it will be on your heart. Initially, the same positions that were comfortable before the heart attack should be tried. However, if chest pain or other warning signals exist, the noncardiac partner should assume the active and dominant role.

Possible Danger Signals:

- Chest pain during or after sexual intercourse
- Heart palpitations (pounding) that persist 15 minutes or more after sexual intercourse
- Shortness of breath that persists 15 minutes or more after sexual intercourse
- Sleepiness apparently caused by the exertion of sexual activity and intercourse
- A "knocked out" feeling the following day after intercourse.

6. Spacing Activities

Space your activities to allow your heart to rest. Plan your day's and week's activities to avoid fatigue. Don't do your chores all at one time.

Rest between. Don't try to hurry. Plan your day so you can get everything done without being rushed or tense. After a meal, rest for half an hour before exercising. Avoid large intakes of food at one time.

Try to get 6-8 hours of sleep every night. Do not stay up very late one night and "catch-up" the next. However, if you plan to stay up late, take a nap before hand. Plan a rest period for 20-30 minutes in the morning and afternoon.

F. Patient Demonstrates Knowledge of Medications

1. Name, purpose, and possible side effects

Quinidine (Quinidine Sulfate, CinQuin, Quinidine Extentabs, Quinaglute Duratabs)

- a. Regulates heart beat.
- b. Take only as directed--the right number of tablets or capsules, at the right times.
- c. Danger Signals--dizziness, nausea and vomiting, diarrhea or stomach cramping, cold sweat, difficulty breathing, unusual pounding or fluttering in chest.
- d. If you have been on or will take Quinidine for a long time, watch for these danger signals; blurred vision, lightheadedness, ringing in ears, hearing problems, dizziness, loss of appetite, nausea, vomiting, diarrhea, skin rashes, headache, or fever.

Procainamide (Pronestyl Tablets or Capsules)

- a. Regulates heart beat.
- b. Take only as directed--the right number of tablets or capsules, at the right times.
- c. Danger Signals--loss of appetite, nausea, rash and itching, unusual pounding or fluttering in chest.
- d. If you have been on or will take Pronestyl for a long time, watch for these danger signals: fever, chills, rash, nausea, vomiting, diarrhea, bitter taste in mouth, muscle weakness, arthritic-like pains.

Inderal

- a. Regulates heart beat, sometimes used to prevent chest pain (angina).
- b. Take only as directed -- ____ tablet(s) ____ times a day.
- c. Danger Signals--dizziness, headache, fatigue, mental depression, trouble with breathing.

NOTE FOR DIABETICS: Inderal will not lower sugar levels but it will mask the signs of low sugar (sweating, increased heart beat) so extra caution may be necessary.

Liquid Potassium Replacements (KaoChlor, Pfiklor, Kolyum, KayCiel, Kaon, Potassium Triplex)

- a. Replaces potassium lost from use of diuretics.
- b. Dilute each dose in juice or cold water and drink with or after a meal.
- c. Danger signals of too much potassium--heaviness and weakness of legs, mental confusion, upset stomach (burning).

- d. Avoid excess use of salt substitutes because they contain potassium themselves.

Potassium Replacements in Effervescent Tabs or Powder Form (K-Lor, K-Lyte, K-Lyte/Cl, KaoChlor-Eff, Klorvess, Kaon)

- a. Replace potassium lost from use of diuretics
- b. Dissolve or mix each dose in juice or cold water and drink with or after meal
- c. Danger signs of too much potassium--heaviness and weakness of legs, mental confusion, upset stomach (burning).
- d. Avoid excessive use of salt substitutes because they contain potassium themselves.

Potassium Tablets (Slow-K, Kaon-Cl, Potassium Chloride)

- a. Replace potassium lost from use of diuretics.
- b. Take tablets after meals and/or with a little food at bedtime--do not take with an antacid or milk because it will dissolve the sugar coating on the tablet before it leaves the stomach which may result in an upset stomach.
- c. Danger signals of too much potassium--heaviness and weakness of legs, mental confusion, upset stomach (burning), nausea, vomiting, stomach pain, or distention.
- d. Avoid excessive use of salt substitutes because they contain potassium themselves.

Salt Substitutes (Co-Salt, Diasal, Neocurtasal)

- a. Recommended for use in low salt (sodium) diets.
- b. Danger signs of too little salt in diet--weakness, nausea, muscle cramps.

- c. Many laxatives, antacid tablets, and liquids contain sodium. Don't take them without your doctor's approval.

Coumadin, Panwarfin, Dicumarol

- a. Anticoagulant "blood thinner"
- b. Take in late a.m. or early p.m.
- c. Danger signal--
- d. Do not take any medication without permission from your doctor.
- e. Tell all doctors and dentists that you are on a blood thinner.
- f. Take an aspirin substitute instead of aspirin for minor aches, pains, headaches, or fevers. (Tylenol, Datril, Nebs are just a few of the aspirin substitutes now on the market).

Digoxin--Digitoxin (Lanoxin, Purodigin, Crystodigin)

- a. Heart pill--helps heart beat more efficiently.
- b. Take in late a.m. or early p.m.
- c. Take after pulse rate is obtained, if under _____ beats per minute, do not take.
- d. Danger signals--nausea, vomiting, loss of appetite, visual disturbances (halos around objects) rapid and/or irregular heart rate, diarrhea, headache, weakness, mental depression, confusion, insomnia, or unexplained skin rash.

Valium, Librium, Serax, Tranxene

- a. Nerve pill--relieves nervousness, tenseness, anxiety, fear.

- b. Danger signals--Drowsiness (i.e., take extra care while driving, operating machinery, or doing any work requiring a high amount of physical dexterity).
- c. Alcohol should be avoided or used wisely. When taken together, excessive drowsiness or confusion may result.

For acute attacks (Nitroglycerin, Isordil Sublingual, Sorbitrate Sublingual, Nitrostat)

- a. Helps relieve chest pain.
- b. Dissolve under tongue as necessary for chest pain--not to exceed 3 in 15 minutes. If pain not relieved at this time, call doctor. DO NOT SWALLOW TABLETS.
- c. May have headache, flushed face, throbbing in the temple area, burning sensation in mouth, rapid heart rate, weakness.
- d. Must keep in original container (NO PILL BOXES) with lid tightly closed--Never leave open to air.
- e. Get new supply every 6 months and throw away old supply. A fresh tablet should produce a slight burning sensation when placed under the tongue.

To prevent attacks (Cardilate, Isordil, Isordil Tembids, Sorbitrate, Peritrate, SK-PNET)

- a. Helps prevent chest pain. NOT USEFUL FOR FAST RELIEF.
- b. Take only as directed (swallowed, chewed, dissolved under tongue) at the times specified by your doctor, preferably on an empty stomach.
- c. May have headache, flushing of face, dizziness, palpitation of heart, weakness.

To prevent attacks (Nitro-Bid, Nitrospan, Duo-trate, Pentritol Tempules, Peritritol Tempules, Peritrate-SA, PETN-Timed Release, Metamine)

- a. Helps prevent chest pain. NOT USEFUL FOR FAST RELIEF.
- b. These capsules/tabs are long-acting--take them only at the times specified by your doctor, preferably on an empty stomach.
- c. May have headache, flushing of face, dizziness, palpitation of heart, weakness.
- d. Danger signal--call your doctor if blurring of vision or dryness of mouth occurs.

Persantine

- a. Helps prevent chest pain. NOT USEFUL FOR FAST RELIEF.
- b. Take only as directed by your doctor, preferably at least one hour before meals.
- c. May have headache, dizziness, nausea, flushing of face, weakness.

Nitroglycerin, Ointment (Nitro-Bid, Nitrol)

- a. Helps prevent chest pain.
- b. Measure the ointment as squeezed from the tube, using the rulered papers provided. Measure out _____ inches as directed by your doctor and rub the ointment into the chest. Tell patient if doctor prefers with or without Saran Wrap.
- c. May have headache, flushing of face, dizziness, weakness, palpitation of heart.

Diuretics (HydroDiuril, Diuril Esidrix, Hygroton, Hydromox, Naturetin, Anhydron, Enduron, Saluron, Renese, Zaroxolyn, Oretic)

- a. Water pill--relieves excess fluid and prevents swelling. Also produces a slight drop in blood pressure when taken over a long period of time and may sometimes be used for high blood pressure.
- b. Danger signals--dryness of mouth, thirst, weakness, drowsiness, dizziness, restlessness, muscle pains or cramps, muscle fatigue, nausea, vomiting.
- c. If no potassium replacement is given, you should eat some foods high in potassium daily, such as: 2-3 glasses of citrus juices or fruits, prunes, bananas, apricots (dried or fresh), or fresh tomatoes, sanko, green leafy vegetables.

Storn Diruetics (Lasix, Edecrin)

- a. Water pill--relieves excess fluid and prevents swelling.
- b. Take only as directed, preferably in the morning, or early afternoon.
- c. Danger Signals--dryness of mouth, thirst, weakness, drowsiness, restlessness, muscle cramps, muscle fatigue, nausea, vomiting, increased perspiration. Any dizziness, ringing in the ears or hearing problems should be reported to your doctor.
- d. May be given along with other diuretics which "save" potassium.
- e. If no potassium replacement is given, you should eat some foods high in potassium daily, such as: 2-3 glasses of citrus juices or fruits, prunes, bananas, apricots (dried or fresh), or fresh tomatoes, green leafy vegetables.

Potassium "Saving" Diuretics (Aldactazine, Dyrenium, Dyazide)

- a. Water pill--relieves excess fluid and prevents swelling. Also produces a slight drop in blood pressure when taken over a long period of time and may sometimes be used for high blood pressure.
- b. May be prescribed by your doctor along with other diuretics.
- c. Potassium supplements, either as medication or as a potassium-rich diet are usually not necessary.
- d. Danger Signals--dryness of mouth, thirst, weakness, lethargy, headache, drowsiness, diarrhea, nausea, vomiting, unusual joint pain or swelling, or an unexplained rash.
- e. Notify the doctor of any sudden drop in urine output below that which you are accustomed to passing.

Stool Softeners (Colace, Doxinate, Surfak, Dorbantyl, Doxan, Doxidan, Peri Colace, Dialose, Dialose Plus)

- a. Softens feces to avoid straining at the stool.
- b. Take as directed by your doctor. Follow with glass of water.
- c. Should not be taken along with mineral oil.
- d. Discontinue use and call your doctor if--abdominal pain, nausea, vomiting, or other symptoms of appendicitis are present, hemorrhage, severe spasm, or diarrhea.

Aldomet

- a. Blood pressure pill--helps lower blood pressure.

- b. Take only as directed by your doctor. Your doctor may change your dose from time to time--be sure your pharmacist knows this and changes the label on your prescription bottle.
- c. Common reactions: drowsiness, headache or weakness may occur when you start taking this drug but should soon disappear.
- d. Danger Signals--fever, extreme sedation or dizziness, jaundice (yellowing of skin).

2. How and when to take

Some of you may have to make these medications for the rest of your life. Medications make the heart's job easier and to work more efficiently.

Take your medications only as the doctor prescribes. Always tell other doctors and dentists what medications you are on. When returning to the hospitals, always bring your medications in--in the original containers. Be sure and get all your prescription and non-prescription drugs from the same pharmacy. The druggist keeps a record of your drugs and watches for possible problems. Be sure you understand what each medicine is used for and how it should be taken. Always keep an adequate supply of medicine available in case you couldn't get refills immediately. Never take anyone else's medicine without your doctor's o.k.

G. Patient Demonstrates Knowledge of When to Seek Medical Attention

1. Symptoms

You need help if the following discomfort lasts more than 15 minutes.

- Heavy pressure or squeezing pain in the chest which may spread to the shoulder, arm, neck, or jaw and is not relieved by resting and/or

nitroglycerine or if the pain begins to recur at frequent intervals.

- Increased shortness of breath
- Fainting
- Very slow or rapid heart rate

Stop what you are doing, take your nitroglycerin (if prescribed) and rest for several minutes. If you must continue with what you are doing, make it a slower rate. Sitting, lying, or doing a restful activity is the best course of action.

If the discomfort persists for longer than 15 minutes, GET HELP! Notify the nearest rescue squad.

Everyone in the family should know how to get help in an emergency. Don't waste time--time is the element. Statistics show that death occurs in the first two hours following a heart attack usually.

Driving to the hospital is not the wisest thing to do, either by yourself or with your family driving. If the victim becomes unconscious en-route to the hospital, it would be difficult to support the patient properly.

It may be wise for family members to learn Basic Life Support. Check with the Red Cross or Heart Association in the area.

2. Importance of keeping Doctor's Appointment

Check with your doctor before taking long car trips. When you go, stop every hour and walk around. This will help clots from forming in your lower legs.

Be sure to check with your doctor before going to the mountains or to a very hot, humid place.

Airplane trips in pressurized cabins are usually o.k. two months after discharge.

Even though you are beginning to understand how to take care of yourself after your heart attack, remember to consult with your physician for specific and continuous follow-up care.

APPENDIX B

TEXAS WOMAN'S UNIVERSITY

Human Research Committee

Name of Investigator: Jane Anthony Peterson Center: Dallas
Address: 1408 W. 40th Date: June 29, 1979
Kearney, Nebraska 68847

Dear Ms. Peterson:

Your study entitled Cardiac Patients' Psychological Adjustment Relates to Nurses' Planned Teaching has been reviewed by a committee of the Human Research Review Committee and it appears to meet our requirements in regard to protection of the individual's rights.

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

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

Sincerely,



Chairman, Human Research
Review Committee

at Dallas.

APPENDIX C

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING
DENTON, TEXAS 76204

DALLAS CENTER
1810 INWOOD ROAD
DALLAS, TEXAS 75235

HOUSTON CENTER
1130 M. D. ANDERSON BLVD.
HOUSTON, TEXAS 77025

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE Lutheran Memorial Hospital

GRANTS TO Jane Anthony Peterson

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: To determine if a significant difference exists between cardiac patients' psychological adjustment who have and who have not received nurses' planned teaching interventions as determined by administration of the Cardiac Adjustment Scale questionnaire.

The conditions mutually agreed upon are as follows:

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

Date: _____

Harold Meyander
Signature of Agency Personnel

Jane Anthony Peterson
Signature of Student

Beth C. Clavahan-Wood, R.N., Ed.D.
Signature of Faculty Advisor

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

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING
DENTON, TEXAS

DALLAS CENTER
1810 Inwood Road
Dallas, Texas 75235

HOUSTON CENTER
1130 M.S. Anderson Blvd.
Houston, Texas 77025

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE _____
GRANTS TO Jane Anthony Peterson

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: To determine if a significant difference exists between cardiac patients' psychological adjustment who have and who have not received nurses' planned teaching interventions as determined by administration of the Cardiac Adjustment Scale questionnaire.

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3. The agency (wants) (does not want) a conference with the student when the report is completed.
4. The agency is (willing) (unwilling) to allow the completed report to be circulated through interlibrary loan.
5. Other: _____

Date 7-24-79

Jane Anthony Peterson
Signature of Student

Signature of Agency Personnel
Beth Chapman-Wood, R.N., Ed.D.
Signature of Faculty Advisor

*Fill out and sign three copies to be distributed as follows: Original - Student; first copy - agency; second copy - T.W.U. College of Nursing.

APPENDIX D

TEXAS WOMAN'S UNIVERSITY

Consent to Act as a Subject for Research and Investigation:

1. I hereby authorize Jane Anthony Peterson to perform the following investigation: To administer the Cardiac Adjustment Scale, a 160-item questionnaire, to me to ascertain my emotional adjustment to my heart disease. The questionnaire requires approximately 20 minutes to complete and cannot be passed or failed. No identification will be placed on the questionnaire and withdrawal from the study can be done at any time.

2. The procedure for the investigation listed in Paragraph 1 has been explained to me by Jane Anthony Peterson.

3. I understand that the investigation described in Paragraph 1 involves the following possible risks: Inadvertent release of personal information and my misinterpretation of information on the questionnaire. Fatigue is possible while completing the questionnaire.

4. I understand that the investigation described in Paragraph 1 has the following potential benefits to myself and/or others: It may help nurses to understand the influence of their teaching on heart patients and

the patients' emotional adjustment to their heart disease.

5. An offer to answer all of my questions regarding the study has been made. I understand that I may terminate my participation in the study at any time.

Subjects' Signature

Date

Written Explanation of the Purpose
and Procedure for Participation
in the Study

The researcher, Jane Anthony Peterson, is requesting your participation in the following investigation: A study to help nurses to understand the influence of their teaching on cardiac patients' emotional adjustment to their heart disease. This requires completing the Cardiac Adjustment Scale, a 160-item questionnaire requiring approximately 20 minutes to complete. It is not a test that can be passed or failed, and there are no "right" or "wrong" answers. Therefore, record your reactions to the items freely.

Participation or refusal to participate in this study will not affect your treatment or care in any way. Your personal privacy is being strived for by the lack of identification on the questionnaire. Withdrawal from the study may be done at any time. Any questions you may have concerning the study will be answered by the researcher.

APPENDIX E

Cardiac Adjustment Scale

A copy of this instrument by D. Rumbaugh (1964)
may be obtained from:

Educational and Industrial Testing Service
Box 7234
San Diego, California 92107

APPENDIX F

Demographic Data Sheet

Please fill in the appropriate information.

Age: _____

Sex: _____

Race: _____

Medical Diagnosis: _____

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(a)
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